



Forward Delivery Supplement to Official Statement dated July 14, 2021 of the

New York State Bridge Authority

Relating To

\$40,935,000

General Revenue Refunding Bonds, Series 2021B (Forward Delivery)

In connection with the forward delivery of the \$40,935,000 General Revenue Refunding Bonds, Series 2021B (Forward Delivery) on October 6, 2021, the Official Statement of the New York State Bridge Authority (the "Authority") dated July 14, 2021 (the "Official Statement") is hereby supplemented as described below. This Official Statement Supplement (the "Supplement") constitutes an integral part of the Official Statement and should be read in conjunction with the Official Statement. A copy of the Official Statement is attached hereto. Capitalized terms used but not otherwise defined herein shall have the meanings assigned to such terms in the Official Statement.

Except as specifically provided in this Supplement, the Official Statement has not been updated or supplemented. The Official Statement contains information only through its date, except as specifically set forth in this Supplement. The Official Statement, together with this Supplement, should be read in its entirety.

1. The information in the Official Statement under the sub-caption entitled "COVID-19 Impacts on Operation" under the caption "SUMMARY OF PAST OPERATIONS" is supplemented to update the table included therein to read as follows:

The following tables illustrate traffic volume and unaudited toll revenue for the period ending July 31 for the years 2019, 2020 and 2021:

		Traffic Volume (000s) ⁽¹⁾						
		Jan.	Feb.	Mar.	Apr.	May	June	July
2019		2,331	2,205	2,587	2,672	2,870	2,799	2,850
2020		2,427	2,333	1,974	1,288	1,748	2,090	2,325
2021		1,976	1,694	2,310	2,394	2,594	2,632	2,662

		Toll Revenue (\$000s) ⁽¹⁾⁽²⁾⁽³⁾						
		Jan.	Feb.	Mar.	Apr.	May	June	July
2019		4,135	3,967	4,614	5,306	5,155	4,988	5,528
2020		4,255	4,157	3,807	2,830	4,308	4,539	4,862
2021		4,038	3,599	4,863	5,531	5,612	5,698	6,057

(1) Includes toll paying eastbound traffic. Westbound traffic is not tolled.

(2) 2020 toll revenues for May through July reflect the May 1, 2020 toll schedule revisions

(3) 2021 toll revenues for January through April reflect the May 1, 2020 toll schedule revision. 2021 toll revenues for May through July reflect the May 1, 2021 toll schedule revisions.

2. The information in the Official Statement under the sub-caption entitled "*All Electronic Tolling/Tolls by Mail*" under the sub-caption "History of Traffic, Toll Revenues and Expenses, 2010-2020" under the caption "SUMMARY OF PAST OPERATIONS" is supplemented as follows:

In July 2021, the Authority converted the Newburgh-Beacon Bridge to all electronic tolling ("AET"), with all of the Authority's vehicular bridges scheduled to be completed by Spring of 2022.

3. On September 15, 2021 the Authority filed its draft budget for FY 2022 with the Authorities Budget Office. The draft budget, which remains subject to change by the Authority Board, reflects further refinement of estimates for AET including contracted systems maintenance costs and new experience associated with overall market conditions for commercial insurance costs.
4. The information in the Official Statement under the sub-caption entitled "Current and Future Capital Program" under the caption "IMPLEMENTING THE CAPITAL PROGRAM" is supplemented as follows:

On September 15, 2021, the Authority approved an updated Capital Improvement Program for the years 2022 through 2026. The program anticipates expenditures over the five-year period 2022 through 2026 of \$174,971,000 allocated to the Bridges as follows:

Rip Van Winkle Bridge	\$12,000,000
Kingston-Rhinecliff Bridge	10,000,000
Mid-Hudson Bridge	22,750,000
Newburgh-Beacon Bridge	42,450,000
Bear Mountain Bridge	30,900,000
Walkway Over the Hudson	1,100,000
Miscellaneous System-wide	55,771,000

Major projects for this period are scheduled to include:

- a. Completion of deck replacement for the North Span of the Newburgh-Beacon Bridge commenced in 2020.
- b. Maintenance painting and commencement of deck replacement at Bear Mountain Bridge
- c. Replacement of Main Cable Suspenders, maintenance painting and paving at Mid-Hudson Bridge
- d. Maintenance Painting at Kingston-Rhinecliff Bridge
- e. Maintenance Painting at Rip Van Winkle Bridge
- f. Painting and pier base repairs at Walkway over the Hudson
- g. All Electronic Tolling Conversion system-wide

None of the projects underway or scheduled to get underway as part of the approved 2022-2026 Five Year Capital Program are expected to increase or decrease traffic capacity on any of the bridges, including the re-decking of the Newburgh-Beacon Bridge.

5. The information in the Official Statement under the sub-caption entitled “Projected Revenues and Operating Expenses” under the caption “SUMMARY OF PROJECTED OPERATIONS” is amended by updating the projected Operating Expenses and resulting Net Operating Revenues and Net Revenues as shown in the updated Table 9 (amended) below:

TABLE 9 (Amended)

PROJECTED REVENUES AND OPERATING EXPENSES
(ASSUMING EXISTING TOLLS AND APPROVED TOLL SCHEDULE INCREASES)
2021-2026
(\$000's)

<u>Year</u>	<u>Toll Revenues</u> ⁽¹⁾	<u>Violation Fee Revenues</u>	<u>Operating Expenses</u> ⁽²⁾	<u>Net Operating Revenues</u>	<u>Other Revenues</u> ⁽³⁾	<u>Net Revenues</u>
2021	59,900	200	35,056	25,044	1,250	26,294
2022	64,100	2,000	36,476	29,624	1,050	30,674
2023	69,600	1,900	37,817	33,683	1,050	34,733
2024	71,700	1,900	39,209	34,391	1,050	35,441
2025	72,000	1,800	40,652	33,148	1,050	34,198
2026	72,000	1,800	42,278	31,522	1,050	32,572

- ⁽¹⁾ As projected by the Traffic Consultant, based on the approved toll schedule including increases scheduled to become effective May 1, 2022 and May 1, 2023. See “APPENDIX A — REPORT OF TRAFFIC CONSULTANT”
- ⁽²⁾ Does not include “Other Post-Employment Benefits”, depreciation on equipment, and net loss on sale of equipment. See “IMPLEMENTING THE CAPITAL PROGRAM—Future Capital Program” herein.
- ⁽³⁾ Primarily interest income; estimated by the Authority based on current interest rates and existing reserve balances.

[The remainder of this page is intentionally left blank.]

6. The information in the Official Statement under the caption “PROJECTED DEBT SERVICE COVERAGE” is amended as follows. Table 10-a is amended by updating the projected revenues and coverage based on the information in Table 9 (amended) to read as shown in the updated Table 10-a (amended) below. Table 10-b is amended by updating the projected revenues and coverage based on the information in Table 9 (amended) to read as shown in the updated Table 10-b (amended) below.

TABLE 10-a (Amended)

PROJECTED DEBT SERVICE COVERAGE
(ASSUMING EXISTING AND APPROVED TOLL INCREASES, TAKING INTO ACCOUNT DEBT
SERVICE ON THE SERIES 2021 NEW MONEY BONDS ISSUED JULY 29, 2021, AND PRIOR TO
CLOSING ON THE SERIES 2021 REFUNDING BONDS)
2021-2026

<u>Year</u>	<u>Net Operating Revenues (\$000's)⁽¹⁾</u>	<u>Net Revenue (\$000's)⁽¹⁾</u>	<u>Debt Service on 2021 Bonds and 2012 Bonds (\$000's)⁽²⁾</u>	<u>Net Revenues After Combined Debt Service (\$000's)</u>	<u>Net Operating Revenue Coverage of Combined <u>Debt</u> <u>Service</u></u>	<u>Net Revenue Coverage of Combined <u>Debt Service</u></u>
2021	25,044	26,294	12,564	13,730	1.99	2.09
2022	29,624	30,674	14,386	16,288	2.06	2.13
2023	33,683	34,733	14,388	20,345	2.34	2.41
2024	34,391	35,441	14,386	21,055	2.39	2.46
2025	33,148	34,198	14,386	19,812	2.30	2.38
2026	31,522	32,572	14,387	18,185	2.19	2.26

- (1) As projected by the Traffic Consultant, based on the approved toll schedule including increases scheduled to become effective May 1, 2022 and May 1, 2023. See “APPENDIX A — REPORT OF TRAFFIC CONSULTANT”
- (2) Includes debt service on the Series 2021 New Money Bonds, and debt service on the Outstanding Series 2012 Bonds prior to closing on the Series 2021 Refunding Bonds.

Source: The Authority

[The remainder of this page is intentionally left blank.]

TABLE 10-b (amended)

PROJECTED DEBT SERVICE COVERAGE
(ASSUMING EXISTING AND APPROVED TOLL INCREASES, TAKING INTO ACCOUNT DEBT
SERVICE ON THE SERIES 2021 NEW MONEY BONDS ISSUED JULY 29, 2021, AND ASSUMING
CLOSING OF THE SERIES 2021 REFUNDING BONDS)
2021-2026

<u>Year</u>	<u>Net Operating Revenues (\$000's)⁽¹⁾</u>	<u>Net Revenue (\$000's)⁽¹⁾</u>	<u>Combined Debt Service on 2021 Bonds (\$000's)⁽²⁾</u>	<u>Net Revenues After Combined Debt Service (\$000's)</u>	<u>Net Operating Revenue Coverage of Combined Debt Service</u>	<u>Net Revenue Coverage of Combined Debt Service</u>
2021	25,044	26,294	12,469	13,825	2.01	2.11
2022	29,624	30,674	7,151	23,523	4.14	4.29
2023	33,683	34,733	7,151	27,582	4.71	4.86
2024	34,391	35,441	7,151	28,290	4.81	4.96
2025	33,148	34,198	7,150	27,048	4.64	4.78
2026	31,522	32,572	7,154	25,418	4.41	4.55

(1) As projected by the Traffic Consultant, based on the approved toll schedule including increases scheduled to become effective May 1, 2022 and May 1, 2023. See "APPENDIX A — REPORT OF TRAFFIC CONSULTANT"

(2) Includes debt service on the Series 2021 New Money Bonds and debt service on the Series 2021 Refunding Bonds.

Source: The Authority

[The remainder of this page is intentionally left blank.]

The execution and delivery of this Official Statement Supplement by the undersigned officers of the Authority have been duly authorized by the Authority.

NEW YORK STATE BRIDGE AUTHORITY

By: /s/ Joan McDonald
Chair

By: /s/ Brian Bushek
Treasurer

Please affix this Supplement to the Official Statement that you have in your possession and forward this Supplement to any party to whom you delivered a copy of the Official Statement.

September 22, 2021

In the opinion of Rodenhause Chale & Polidoro LLP, Bond Counsel, under existing statutes and court decisions, and assuming compliance with the tax covenants referred to herein, interest on the Series 2021 New Money Bonds is not included in gross income for Federal income tax purposes pursuant to Section 103 of the Internal Revenue Code of 1986, as amended, and such interest will not be treated as a preference item in calculating the Federal alternative minimum tax that may be imposed on individuals under the Code. It is also the opinion of Bond Counsel that interest on the Series 2021 New Money Bonds is exempt from personal income taxes imposed by the State of New York or any political subdivision thereof (including The City of New York and the City of Yonkers) See "TAX MATTERS" herein. See "Forward Delivery of the Series 2021 Refunding Bonds" and "TAX MATTERS" regarding the opinion of Bond Counsel with respect to the Series 2021 Refunding Bonds.

New York State Bridge Authority



\$73,300,000

General Revenue Bonds, Series 2021A

\$40,935,000

General Revenue Refunding Bonds, Series 2021B (Forward Delivery)

Dated: Date of Delivery

Due: January 1, as shown on the inside cover

The New York State Bridge Authority (the "Authority") will issue its General Revenue Bonds, Series 2021A (the "Series 2021 New Money Bonds") pursuant to the Authority's General Revenue Bond Resolution, adopted by the Authority on December 19, 1996, as amended and supplemented (such General Revenue Bond Resolution as amended and supplemented being referred to as the "Bond Resolution"), including as supplemented by the Fifth Supplemental Resolution, adopted by the Authority on May 27, 2021 (the "Fifth Supplemental Resolution").

The Authority will issue its General Revenue Refunding Bonds, Series 2021B (Forward Delivery) (the "Series 2021 Refunding Bonds") pursuant to the Authority's Bond Resolution, including as supplemented by the Sixth Supplemental Resolution, adopted by the Authority on May 27, 2021 (the Sixth Supplemental Resolution and together with the Bond Resolution and the Fifth Supplemental Resolution, collectively the "Resolutions").

The Bank of New York Mellon, as successor in interest to United States Trust Company of New York, is the trustee (the "Trustee") for the Series 2021 New Money Bonds and the Series 2021 Refunding Bonds (collectively the "2021 Bonds").

The 2021 Bonds are issuable only as fully registered bonds, without coupons, and when issued, will be registered in the name of Cede & Co., as bondowner and nominee for The Depository Trust Company ("DTC"), New York, New York. DTC will act as securities depository for the 2021 Bonds. Purchases of the 2021 Bonds will be made in book-entry form in the denomination of \$5,000 or any integral multiple thereof. Purchasers will not receive certificates representing their ownership interest in the 2021 Bonds purchased. See "DESCRIPTION OF THE 2021 BONDS — Book-Entry Form Only".

Interest on the 2021 Bonds will be payable semi-annually on each July 1 and January 1 commencing January 1, 2022. Payments will be made directly to DTC by the Trustee.

The Series 2021 New Money Bonds are subject to redemption prior to maturity as set forth in the section entitled "DESCRIPTION OF THE 2021 BONDS—Redemption Provisions." The Series 2021 Refunding Bonds are subject to redemption prior to maturity as set forth in the section entitled "DESCRIPTION OF THE 2021 BONDS—Redemption Provisions."

The Authority has no power to levy or collect taxes. The 2021 Bonds are general obligations of the Authority payable from and secured by a pledge of any moneys or revenues of the Authority including the tolls and other revenues derived by the Authority from the operation of the Bridge System of the Authority. The 2021 Bonds do not constitute a debt of the State of New York, or any political subdivision thereof, and neither the full faith and credit nor the taxing power of the State of New York nor any political subdivision thereof is liable on payment of the 2021 Bonds.

This cover page contains certain information intended for general reference purposes only. It is not intended to be a summary of the security or terms of this issue. Investors are advised to read the entire Official Statement to obtain information essential to the making of an informed investment decision.

The 2021 Bonds are offered for delivery when, as and if issued and received by the Underwriters and are subject to the approval of legality by Rodenhause Chale & Polidoro LLP, Rhinebeck, New York, Bond Counsel. Certain legal matters will be passed upon for the Authority by the NYS Thruway Authority's General Counsel, Frank Hoare, serving as General Counsel to the Authority. Acacia Financial Group, Inc. is acting as financial advisor to the Authority in connection with the issuance of the 2021 Bonds. It is expected that the Series 2021 New Money Bonds will be available for delivery to DTC in New York, New York on or about July 29, 2021. It is expected that the Series 2021 Refunding Bonds will be available for delivery to DTC in Jersey City, New Jersey on or about October 6, 2021. For a discussion of the forward delivery of the Series 2021 Refunding Bonds, certain conditions to the Underwriters' obligation to purchase the Series 2021 Refunding Bonds and certain risks to purchasers of beneficial interests in the Series 2021 Refunding Bonds resulting from this forward delivery, see "THE SERIES 2021 REFUNDING BONDS - Delayed Delivery of the Series 2021 Refunding Bonds" herein.

RBC Capital Markets

Siebert Williams Shank & Co., LLC

Mischler Financial Group, Inc.

Oppenheimer & Co.

Ramirez & Co., Inc.

\$73,300,000
General Revenue Bonds, Series 2021A

The General Revenue Bonds, Series 2021A mature on January 1 in each year as set forth below:

Due	Principal Amount	Interest Rate	Yield	CUSIP Number⁽¹⁾	Due	Principal Amount	Interest Rate	Yield	CUSIP Number⁽¹⁾
2028	\$1,730,000	5.00%	0.650%	649807CG7	2035	\$2,435,000	5.00%	1.180%*	649807CP7
2029	1,815,000	5.00	0.760%	649807CH5	2036	2,555,000	5.00	1.220%*	649807CQ5
2030	1,905,000	5.00	0.880%	649807CJ1	2037	2,685,000	5.00	1.300%*	649807CR3
2031	2,005,000	5.00	0.970%	649807CK8	2038	2,820,000	4.00	1.440%*	649807CS1
2032	2,100,000	5.00	1.070%*	649807CL6	2039	2,930,000	4.00	1.460%*	649807CT9
2033	2,205,000	5.00	1.100%*	649807CM4	2040	3,050,000	4.00	1.490%*	649807CU6
2034	2,320,000	5.00	1.130%*	649807CN2	2041	3,170,000	4.00	1.520%*	649807CV4

\$17,855,000 4.00% Term Bonds Due January 1, 2046 Yield 1.630%* CUSIP 649807CW2

\$21,720,000 4.00% Term Bonds Due January 1, 2051 Yield 1.680%* CUSIP 649807CX0

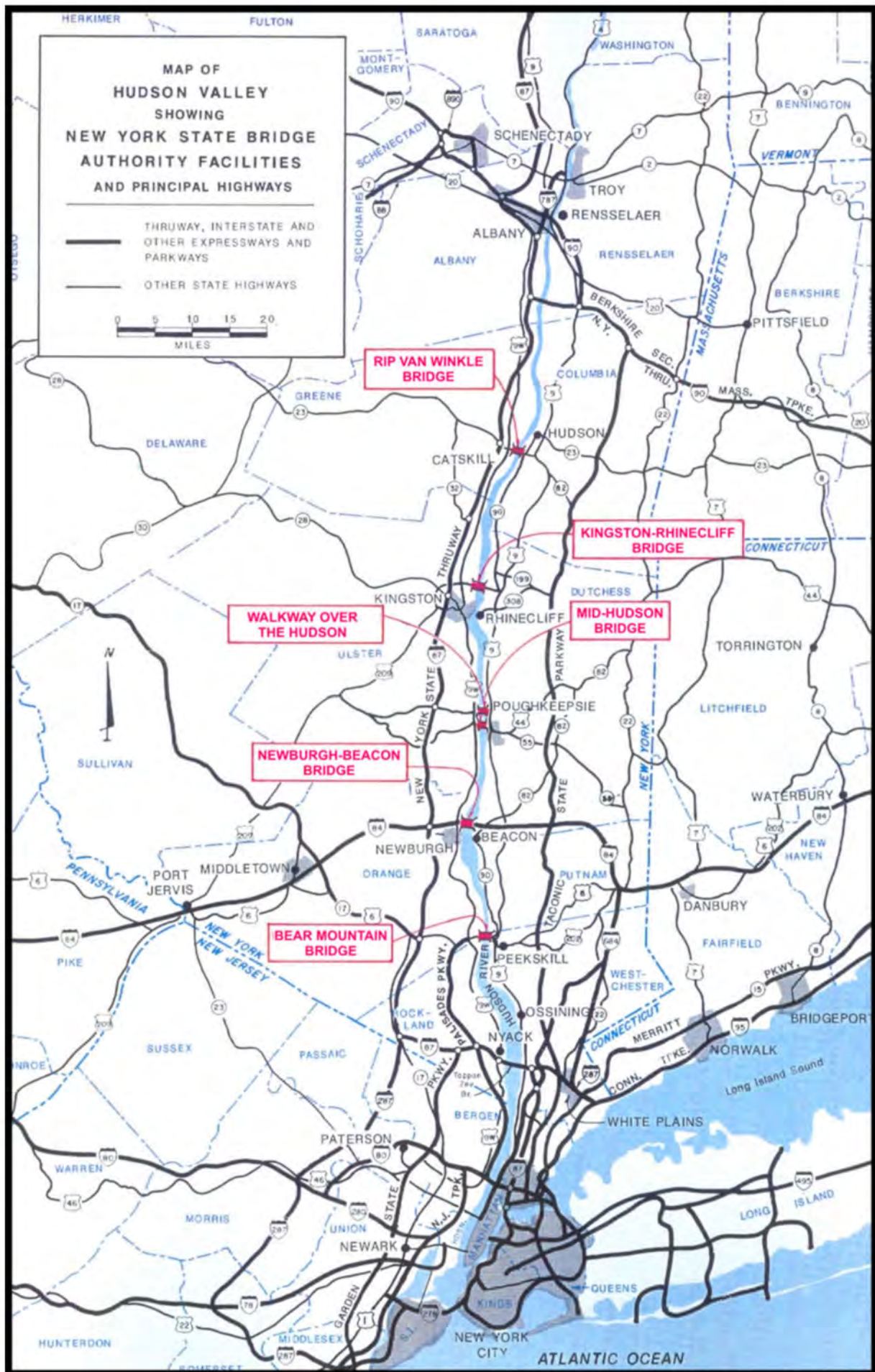
\$40,935,000
General Revenue Refunding Bonds, Series 2021B (Forward Delivery)

The General Revenue Refunding Bonds, Series 2021B (Forward Delivery) mature on January 1 in each year as set forth below:

Due	Principal Amount	Interest Rate	Yield	CUSIP Number⁽¹⁾	Due	Principal Amount	Interest Rate	Yield	CUSIP Number⁽¹⁾
2023	\$2,100,000	5.00%	0.240%	649807CZ5	2030	\$2,955,000	5.00%	1.080%	649807DG6
2024	2,205,000	5.00	0.320%	649807DA9	2031	3,100,000	5.00	1.150%	649807DH4
2025	2,315,000	5.00	0.430%	649807DB7	2032	3,260,000	5.00	1.230%*	649807DJ0
2026	2,430,000	5.00	0.560%	649807DC5	2033	3,420,000	4.00	1.380%*	649807DK7
2027	2,555,000	5.00	0.680%	649807DD3	2034	3,555,000	4.00	1.440%*	649807DL5
2028	2,680,000	5.00	0.860%	649807DE1	2035	3,700,000	4.00	1.500%*	649807DM3
2029	2,815,000	5.00	0.970%	649807DF8	2036	3,845,000	4.00	1.540%*	649807DN1

¹ CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein are provided by CUSIP Global Services, managed by S&P Global Market Intelligence. The CUSIP numbers listed above are being provided solely for the convenience of bondholders only at the time of issuance of the 2021 Bonds and the Authority does not make any representation with respect to such numbers or undertake any responsibility for their accuracy now or at any time in the future.

* Priced to the January 1, 2031 optional call date



No dealer, broker, salesperson or other person has been authorized to give any information or to make any representations, other than those contained in this Official Statement, in connection with the offering of the 2021 Bonds, and, if given or made, such information or representation should not be relied upon as having been authorized by the Authority or the Underwriters. This Official Statement does not constitute an offer to sell or the solicitation of any offer to buy, nor shall there be any sale of the 2021 Bonds, by any person in any jurisdiction in which it is unlawful to make such offer, solicitation or sale. The information set forth herein has been obtained from the Authority and other sources that are deemed to be reliable, but is not guaranteed as to accuracy or completeness by, and is not to be construed as a representation of, the Underwriters. The Official Statement speaks as of its date. The information herein is subject to change without notice, and neither the delivery of this Official Statement, nor any sale made hereunder, shall under any circumstances create any implication that there has been no change in the affairs of the Authority or in the other matters described herein since the date hereof.

Certain information in this Official Statement has been supplied by DTC and other sources that the Authority believes are reliable. Neither the Underwriters nor the Authority guarantee the accuracy or completeness of such information, and such information is not to be construed as a representation of the Authority.

References in this Official Statement to the Act and the Resolution do not purport to be complete. Refer to the Act and the Resolution for full and complete details of their provisions. Copies of the Resolution are on file with the Authority and the Trustee. The order and placement of material in this Official Statement, including its appendices, are not to be deemed a determination of relevance, materiality or importance, and all material in this Official Statement, including its appendices, must be considered in its entirety.

The Underwriters have provided the following sentence for inclusion in this Official Statement: The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, its responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE 2021 BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

Certain statements included or incorporated by reference in this Official Statement constitute "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended. Such statements are generally identifiable by the terminology used such as "plan," "project," "expect," "anticipate," "intend," "believe," "estimate," "budget" or other similar words. The achievement of certain results or other expectations contained in such forward-looking statements involves known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements described to be materially different from any results, performances or achievements expressed or implied by such forward-looking statements. Except as specifically set forth herein, the Authority does not plan to issue any updates or revisions to those forward-looking statements due to changes in its expectations or subsequent events, conditions or circumstances on which such statements are based.

THE 2021 BONDS HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION. THE REGISTRATION, QUALIFICATION, OR EXEMPTION OF THE 2021 BONDS IN ACCORDANCE WITH THE APPLICABLE SECURITIES LAW PROVISIONS OF THE JURISDICTIONS IN WHICH THESE SECURITIES HAVE BEEN REGISTERED, QUALIFIED, OR EXEMPTED SHOULD NOT BE REGARDED AS A RECOMMENDATION THEREOF. NEITHER THESE JURISDICTIONS NOR ANY OF THEIR AGENCIES HAVE GUARANTEED OR PASSED UPON THE SAFETY OF THE 2021 BONDS AS AN INVESTMENT, UPON THE PROBABILITY OF ANY EARNINGS THEREON OR UPON THE ACCURACY OR ADEQUACY OF THIS OFFICIAL STATEMENT.

TABLE OF CONTENTS

	<u>Page</u>		<u>Page</u>
INTRODUCTION	1	IMPLEMENTING THE CAPITAL PROGRAM.....	43
PLAN OF FINANCING	2	Prior Program Expenditures.....	43
Series 2021 New Money Bonds Capital Project Plan ..	2	Current and Future Capital Program.....	44
Series 2021 Refunding Bonds Plan of Refunding.....	3	SUMMARY OF PROJECTED OPERATIONS.....	45
Parity Bonds.....	4	Summary of Traffic Consultant's Report.....	45
SOURCES AND USES OF FUNDS	4	Projected Revenues and Operating Expenses	47
DEBT SERVICE REQUIREMENTS GENERAL		Adjusted Historical Revenues and Operating	
REVENUE BONDS	5	Expenses for Additional Bonds Test.....	47
DESCRIPTION OF THE 2021 BONDS	7	PROJECTED DEBT SERVICE COVERAGE	47
Terms	7	CERTAIN RISK FACTORS	49
Redemption Provisions	7	COVID-19 Pandemic.....	49
Delayed Delivery of the Series 2021 Refunding		Toll Revenues Including AET Conversion.....	50
Bonds	9	Other Factors Affecting Financial Conditions	50
Additional Risks Related to the Delayed Delivery		Force Majeure Events	51
Period.....	13	Threats and Acts of Terrorism	51
Book-Entry Form Only	14	Cybersecurity Risks	51
SOURCES OF PAYMENT AND SECURITY FOR		Future Economic Conditions	51
THE BONDS	15	Investment Securities and other Third Party	
Pledge of Revenues and Funds	15	Considerations	51
Bond Resolution Amendments	15	Defaults and Remedies	52
Toll Rate Covenant	16	Event of Taxability	52
The State Agreement.....	17	Redemption	52
Debt Service Reserve Requirement	17	Legislative Actions	52
Additional Indebtedness.....	18	Amendments	52
Operation and Maintenance of Bridge Facilities.....	21	TAX MATTERS	52
Insurance.....	21	LITIGATION	56
THE AUTHORITY	22	RATINGS.....	57
Statutory Cap	22	LEGALITY OF 2021 BONDS FOR INVESTMENT....	57
Commissioners, Officers and Senior Staff of		CERTAIN LEGAL MATTERS	57
the Authority	23	VERIFICATION AGENT.....	57
Personnel.....	25	CONSULTANTS' AND ACCOUNTANT'S	
Certain Powers of the Authority	25	REPORTS.....	57
THE BRIDGE SYSTEM.....	27	FINANCIAL ADVISOR.....	58
Rip Van Winkle Bridge.....	27	UNDERWRITING	58
Kingston-Rhinecliff Bridge.....	28	CONTINUING DISCLOSURE UNDER SEC RULE	
Mid-Hudson Bridge	28	15c2-12	59
Newburgh-Beacon Bridge.....	28	MISCELLANEOUS.....	63
Bear Mountain Bridge.....	29		
Walkway Over the Hudson	29	APPENDIX A - Report of Traffic Consultant	A-1
Summary of Consulting Engineer's Report	30	APPENDIX B - Report of Consulting Engineer.....	B-1
TRAFFIC AREAS.....	30	APPENDIX C - Financial Statements of the	
Authority Crossings	30	Authority	C-1
Other Hudson River Crossings	31	APPENDIX D - Summary of Certain Provisions	
SUMMARY OF PAST OPERATIONS	32	of the Resolutions.....	D-1
COVID -19 Impacts on Operations.....	32	APPENDIX E - Book-Entry Only System	E-1
History of Traffic, Toll Revenues and		APPENDIX F - Form of Opinion of Bond Counsel as	
Expenses, 2010-2020	33	to Series 2021 New Money Bonds... F-1	
Historical Net Revenues and Debt Service	41	Form of Opinion of Bond Counsel	
OPERATING BUDGET PROCESS	42	as to Refunding Bonds	F-2
CAPITAL BUDGET PROCESS	43	APPENDIX G - Form of Delayed Delivery Contract..	G-1

NEW YORK STATE BRIDGE AUTHORITY

**Mid-Hudson Bridge Plaza
Highland, New York 12528**

(845) 691-7245

Authority Commissioners

Joan McDonald	Chair
Maria Bruni	Vice Chair
Alexander Berardi	Commissioner
Ilan Gilbert	Commissioner
Colin Jarvis	Commissioner
Michael O'Brien	Commissioner
Vacant	Commissioner

Authority Executive Staff

Maureen Coleman	Executive Director
Brian Bushek	Treasurer
Jeffrey Wright	Chief Engineer

Rodenhausen Chale & Polidoro LLP
Rhinebeck, New York
Bond Counsel

Stantec Consulting Services Inc.
New York, New York
Traffic Consultant

EFPR Group, CPAs, PLLC
Williamsville, New York
Independent Accountants

Acacia Financial Group, Inc.
New York, New York
Financial Advisor

Modjeski and Masters, Inc.
Poughkeepsie, New York
Consulting Engineer

Robert Thomas, CPA
Minneapolis, Minnesota
Verification Agent

**OFFICIAL STATEMENT
RELATING TO
NEW YORK STATE BRIDGE AUTHORITY**

**\$73,300,000
GENERAL REVENUE BONDS, SERIES 2021A
and**

**\$40,935,000
GENERAL REVENUE REFUNDING BONDS, SERIES 2021B (FORWARD DELIVERY)**

INTRODUCTION

This Official Statement, including the cover page and the Appendices, provides certain information concerning the issuance of \$73,300,000 General Revenue Bonds, Series 2021A (the “Series 2021 New Money Bonds”), and the \$40,935,000 General Revenue Refunding Bonds, Series 2021B (the “Series 2021 Refunding Bonds”, and together with the Series 2021 New Money Bonds, the “2021 Bonds”) by the New York State Bridge Authority (the “Authority”), a body corporate and politic and public benefit corporation of the State of New York. The Series 2021 New Money Bonds are to be issued under and pursuant to the New York State Bridge Authority Act, Title 2 of Article 3 of the New York Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State, as amended (the “Act”), the General Revenue Bond Resolution adopted by the Authority on December 19, 1996, as amended and supplemented (as amended and supplemented from time to time, the “Bond Resolution”) including as supplemented by a Fifth Supplemental Resolution adopted by the Authority in accordance therewith on May 27, 2021 (the “Fifth Supplemental Resolution”). The Series 2021 Refunding Bonds are to be issued under and pursuant to the Act, the Bond Resolution, including as supplemented by a Sixth Supplemental Resolution adopted by the Authority in accordance therewith on May 27, 2021 (the Sixth Supplemental Resolution). See “SOURCES OF PAYMENT AND SECURITY FOR THE BONDS—Bond Resolution Amendments” herein. The Bond Resolution and the Fifth Supplemental Resolution and Sixth Supplemental Resolution are referred to collectively as the “Resolutions”. The Series 2021 New Money Bonds and the Series 2021 Refunding Bonds, together with the Outstanding Bonds described under “PLAN OF FINANCING”, and all other bonds of the Authority hereafter issued pursuant to the Bond Resolution on a parity as to security and payment with the Series 2021 New Money Bonds, the Series 2021 Refunding Bonds, and the Outstanding Bonds, are referred to herein as the “Bonds”.

The Authority will issue the Series 2021 New Money Bonds principally to provide funds to finance a portion of the costs of the 2021 Project, which consists of certain reconstruction and rehabilitation projects for the Authority’s Bridge System. Proceeds of the Series 2021 New Money Bonds will also be used to pay the costs of issuance of the Series 2021 New Money Bonds.

The Authority will issue the Series 2021 Refunding Bonds principally to provide funds to finance a portion of the costs of providing for the payment at or in advance of maturity of all or a portion of the General Revenue Bonds, Series 2012 of the Authority. Proceeds of the Series 2021 Refunding Bonds will also be used to pay the costs of issuance of the Series 2021 Refunding Bonds.

The Outstanding Bonds, the 2021 Bonds when issued, and any Additional Bonds and Refunding Bonds hereafter issued on a parity therewith are general obligations of the Authority and are payable from and secured by a pledge of any moneys or revenues of the Authority including the toll revenues derived

by the Authority from the operations of the Bridge System, subject to the prior application to the payment of Operating Expenses of the Bridge System and as otherwise provided in the Resolutions.

The 2021 Bonds are also secured by moneys and any surety bonds on deposit in the Debt Service Reserve Fund including amounts to be deposited therein from proceeds of the sale of the 2021 Bonds.

THE AUTHORITY HAS NO POWER TO LEVY OR COLLECT TAXES. THE 2021 BONDS DO NOT CONSTITUTE A DEBT OF THE STATE OF NEW YORK, OR ANY POLITICAL SUBDIVISION THEREOF, AND NEITHER THE FULL FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OF NEW YORK NOR ANY POLITICAL SUBDIVISION THEREOF IS LIABLE ON PAYMENT OF THE 2021 BONDS.

The Authority currently operates and maintains five vehicular toll bridges: the Rip Van Winkle Bridge near Catskill, the Kingston-Rhinecliff Bridge near Kingston, the Mid-Hudson Bridge at Poughkeepsie, the Newburgh-Beacon Bridge linking the cities of Newburgh and Beacon, and the Bear Mountain Bridge at the Bear Mountain section of Palisades Interstate Park, approximately five miles north of Peekskill, together with the toll-free pedestrian Walkway Over the Hudson Bridge and any and all incidental spans, approaches, structures, facilities and other components including highway connections for these bridges.

The Authority has covenanted in the Bond Resolution that the Authority shall at all times fix, charge and collect tolls for the use of the Bridge System as shall be required in order that in each calendar year Net Revenues shall at least equal the Net Revenue Requirement for each year in which Bonds, including the 2021 Bonds, are Outstanding. The Net Revenue Requirement is defined in the Bond Resolution to mean, for any particular period, an amount equal to the greater of: (i) the sum of the Aggregate Debt Service and Required Deposits for such period, or (ii) 1.75 times the Aggregate Debt Service for such period.

The Authority may issue one or more series of Additional Bonds and Refunding Bonds on a parity as to security and payment with the 2021 Bonds, the Outstanding Bonds and with any other Series of Bonds then Outstanding.

PLAN OF FINANCING

Series 2021 New Money Bonds Capital Project Plan

The Authority will issue the Series 2021 New Money Bonds principally to provide funds to finance a portion of the costs of the 2021 Project. Proceeds of the Series 2021 New Money Bonds will also be used to pay the costs of issuance of the Series 2021 New Money Bonds. See the table below under "SOURCES AND USES OF FUNDS."

The 2021 Project consists of certain reconstruction and rehabilitation projects for the Bridge System, as described in "IMPLEMENTING THE CAPITAL PROGRAM." Based on the Traffic Consultant's Report and the current estimates of operating expenses, as described in "SUMMARY OF PROJECTED OPERATIONS," the Authority currently expects that certain amounts will be deposited annually in the Maintenance Reserve Fund. The 2021 Project will be funded in part from proceeds of the Series 2021 New Money Bonds and in part from amounts to be deposited in the Maintenance Reserve Fund.

Series 2021 Refunding Bonds Plan of Refunding

The Authority has previously issued its General Revenue Bonds, Series 2012 (the "Series 2012 Bonds") pursuant to the Bond Resolution. As of the date of this Official Statement, \$58,090,000 in aggregate principal amount of the Series 2012 Bonds remains Outstanding. Upon issuance of the Series 2021 Refunding Bonds at the 2021B Date of Delivery, \$49,380,000 principal amount of the Outstanding Series 2012 Bonds (the "Defeased Bonds") will be defeased pursuant to the terms of the Bond Resolution, and thereafter will be payable solely from amounts held by the Trustee acting as Escrow Agent for such purpose under an escrow agreement with the Authority (the "Escrow Agreement").

The Series 2012 Bonds Outstanding prior to the issuance of the Series 2021 Refunding Bonds mature on January 1 in each of the years 2022 through 2027 and are subject to redemption on and after January 1, 2022. The Series 2012 Bonds maturing January 1, 2022 are not included in the Defeased Bonds and will be paid at maturity from funds of the Authority. The Series 2012 Bonds maturing in the years 2023 through 2027, inclusive, will be redeemed on January 1, 2022 at a redemption price of par, plus accrued interest to the redemption date from proceeds of certain amounts held under the Escrow Agreement. Pursuant to the Escrow Agreement the Authority will deposit cash and/or Defeasance Securities in trust with the Escrow Agent at the 2021B Date of Delivery. The Defeasance Securities will bear interest at such rates and will mature at such times and in such amounts so that, together with any uninvested cash held by the Escrow Agent, sufficient moneys will be available to make full and timely payment on the principal of, and interest on, the Defeased Bonds to the January 1, 2022 redemption date. Upon such irrevocable deposit, the Defeased Bonds will be deemed to be no longer Outstanding and will no longer be entitled to the benefit of the pledge and lien established by the Resolution or to payment from Revenues of the Bridge System. The Authority will direct the Escrow Agent to pay the principal of and interest on the Defeased Bonds on the January 1, 2022 redemption date unless the Defeased Bonds have been previously purchased and retired.

The Defeased Bonds consist of the following General Revenue Bonds, Series 2012, dated April 26, 2012, maturing January 1 in each of the following years:

Due	Principal Amount	Interest Rate	CUSIP Number	Redemption Date	Redemption Price
2023	9,060,000	4.00	649807CB8	1/1/2022	100%
2024	9,425,000	4.00	649807CC6	1/1/2022	100%
2025	9,800,000	5.00	649807CD4	1/1/2022	100%
2026	10,290,000	5.00	649807CE2	1/1/2022	100%
2027	10,805,000	4.00	649807CF9	1/1/2022	100%

Robert Thomas, CPA, a firm of independent public accountants, will deliver to the Authority, on or before the Date of Delivery of the Series 2021 Refunding Bonds, its report indicating that it has verified the mathematical accuracy of the computations of the adequacy of the cash and maturing principal of and interest on the Governmental Obligations to be used to fund the Escrow Fund to be established by the Trustee as escrow agent to pay when due the maturing principal and redemption price of the Defeased Bonds.

Parity Bonds

The Authority may issue one or more Series of Additional Bonds or Refunding Bonds on a parity as to security and payment with the Series 2012 Bonds, the Series 2021 New Money Bonds, the Series 2021 Refunding Bonds, and with any other Series of Bonds then Outstanding under the Bond Resolution. See “SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Additional Indebtedness” and “IMPLEMENTING THE CAPITAL PROGRAM—Future Capital Program.”

SOURCES AND USES OF FUNDS

The proceeds and other funds available upon delivery of the Series 2021 New Money Bonds, exclusive of accrued interest, are expected to be applied in the following approximate amounts:

Sources of Funds

Par Amount of Series 2021 New Money Bonds	\$73,300,000
Original Issue Premium	17,957,701
Funds transferred from the Debt Service Reserve Fund	<u>2,891,112</u>
Total	\$94,148,813

Uses of Funds

Project Costs	\$92,891,112
Underwriter's Discount	378,785
Costs of Issuance (including NYS Bond Issuance Charge)	<u>878,916</u>
Total	\$94,148,813

The proceeds and other funds available upon delivery of the Series 2021 Refunding Bonds, exclusive of accrued interest, are expected to be applied in the following approximate amounts:

Sources of Funds

Par Amount of Series 2021 Refunding Bonds	\$40,935,000
Original Issue Premium	9,361,721
Funds Transferred from the Debt Service Reserve Fund	33,638
Funds Transferred from the Debt Service Fund	<u>544,025</u>
Total	\$50,874,385

Uses of Funds

Escrow Fund for the Defeased Bonds	\$50,468,050
Underwriter's Discount	193,659
Costs of Issuance	<u>212,676</u>
Total	\$50,874,385

DEBT SERVICE REQUIREMENTS GENERAL REVENUE BONDS

The following table sets forth the debt service on the Outstanding Bonds, debt service on the Series 2021 New Money Bonds, and the aggregate debt service on Outstanding Bonds after the issuance of the Series 2021 New Money Bonds and prior to delivery of the Series 2021 Refunding Bonds.

<u>Bond Year ended January 1</u>	<u>Debt Service on Series 2012 Bonds prior to refunding</u>	<u>Debt Service on Series 2021 New Money Bonds</u>		<u>Total Debt Service including Series 2021 New Money Bonds but prior to delivery of Series 2021 Refunding Bonds</u>
		<u>Principal</u>	<u>Interest</u>	
2022	\$11,234,500	\$ --	\$1,329,810	\$12,564,310
2023	11,236,100	--	3,149,550	14,385,650
2024	11,238,700	--	3,149,550	14,388,250
2025	11,236,700	--	3,149,550	14,386,250
2026	11,236,700	--	3,149,550	14,386,250
2027	11,237,200	--	3,149,550	14,386,750
2028	--	1,730,000	3,149,550	4,879,550
2029	--	1,815,000	3,063,050	4,878,050
2030	--	1,905,000	2,972,300	4,877,300
2031	--	2,005,000	2,877,050	4,882,050
2032	--	2,100,000	2,776,800	4,876,800
2033	--	2,205,000	2,671,800	4,876,800
2034	--	2,320,000	2,561,550	4,881,550
2035	--	2,435,000	2,445,550	4,880,550
2036	--	2,555,000	2,323,800	4,878,800
2037	--	2,685,000	2,196,050	4,881,050
2038	--	2,820,000	2,061,800	4,881,800
2039	--	2,930,000	1,949,000	4,879,000
2040	--	3,050,000	1,831,800	4,881,800
2041	--	3,170,000	1,709,800	4,879,800
2042	--	3,295,000	1,583,000	4,878,000
2043	--	3,430,000	1,451,200	4,881,200
2044	--	3,565,000	1,314,000	4,879,000
2045	--	3,710,000	1,171,400	4,881,400
2046	--	3,855,000	1,023,000	4,878,000
2047	--	4,010,000	868,800	4,878,800
2048	--	4,170,000	708,400	4,878,400
2049	--	4,340,000	541,600	4,881,600
2050	--	4,510,000	368,000	4,878,000
2051	--	4,690,000	187,600	4,877,600
TOTAL:	\$67,419,900	\$73,300,000	\$60,884,460	\$201,604,360

Source: The Authority.

The following table sets forth the debt service on the Outstanding Bonds, debt service on the Series 2021 New Money Bonds, debt service on the Series 2021 Refunding Bonds, and the aggregate debt service on all Outstanding Bonds after the issuance of the Series 2021 New Money Bonds and the Series 2021 Refunding Bonds.

<u>Bond Year ended</u> <u>January 1</u>	<u>Debt Service on</u> <u>Unrefunded</u> <u>Maturity of the</u> <u>Series 2012</u> <u>Bonds</u>	<u>Debt Service on</u> <u>Series 2021</u> <u>New Money Bonds</u>	<u>Debt Service on</u> <u>Series 2021 Refunding Bonds</u>		<u>Total Debt</u> <u>Service after</u> <u>issuance of Series</u> <u>2021 New Money</u> <u>Bonds and Series</u> <u>2021</u> <u>Refunding Bonds</u>
			<u>Principal</u>	<u>Interest</u>	
2022	\$10,690,475	\$1,329,810	\$--	\$ 448,977	\$ 12,469,262
2023	--	3,149,550	\$2,100,000	1,901,550	7,151,100
2024	--	3,149,550	2,205,000	1,796,550	7,151,100
2025	--	3,149,550	2,315,000	1,686,300	7,150,850
2026	--	3,149,550	2,430,000	1,570,550	7,150,100
2027	--	3,149,550	2,555,000	1,449,050	7,153,600
2028	--	4,879,550	2,680,000	1,321,300	8,880,850
2029	--	4,878,050	2,815,000	1,187,300	8,880,350
2030	--	4,877,300	2,955,000	1,046,550	8,878,850
2031	--	4,882,050	3,100,000	898,800	8,880,850
2032	--	4,876,800	3,260,000	743,800	8,880,600
2033	--	4,876,800	3,420,000	580,800	8,877,600
2034	--	4,881,550	3,555,000	444,000	8,880,550
2035	--	4,880,550	3,700,000	301,800	8,882,350
2036	--	4,878,800	3,845,000	153,800	8,877,600
2037	--	4,881,050	--	--	4,881,050
2038	--	4,881,800	--	--	4,881,800
2039	--	4,879,000	--	--	4,879,000
2040	--	4,881,800	--	--	4,881,800
2041	--	4,879,800	--	--	4,879,800
2042	--	4,878,000	--	--	4,878,000
2043	--	4,881,200	--	--	4,881,200
2044	--	4,879,000	--	--	4,879,000
2045	--	4,881,400	--	--	4,881,400
2046	--	4,878,000	--	--	4,878,000
2047	--	4,878,800	--	--	4,878,800
2048	--	4,878,400	--	--	4,878,400
2049	--	4,881,600	--	--	4,881,600
2050	--	4,878,000	--	--	4,878,000
2051	--	4,877,600	--	--	4,877,600
TOTAL	\$10,690,475	\$134,184,460	\$40,935,000	\$15,531,127	\$201,341,062

Source: The Authority.

DESCRIPTION OF THE 2021 BONDS

Terms

The 2021 Bonds will be issued in fully registered form in denominations of \$5,000 or any integral multiple thereof pursuant to the Resolutions. See “APPENDIX D - SUMMARY OF CERTAIN PROVISIONS OF THE RESOLUTIONS.” The 2021 Bonds will mature on January 1 in each of the years and in the principal amounts set forth on the inside cover page of this Official Statement. The 2021 Bonds are subject to redemption prior to maturity as set forth in the section entitled “DESCRIPTION OF THE 2021 BONDS—Redemption Provisions.” The 2021 Bonds will be dated as of the date set forth on the cover page of this Official Statement and will bear interest at the rates set forth on the inside cover page of this Official Statement, payable on each January 1 and July 1 commencing January 1, 2022 (each an “Interest Payment Date”).

The 2021 Bonds, when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York (“DTC”), which will act as securities depository for the 2021 Bonds. Purchases of beneficial interests in the 2021 Bonds will be made in book-entry form only (without certificates) in the denomination of \$5,000 or any integral multiple thereof.

The principal of the 2021 Bonds, or redemption premium, if any, is payable at the corporate trust office of The Bank of New York Mellon, as successor in interest to United States Trust Company of New York, as trustee (with its successors, the “Trustee”), paying agent and registrar. So long as DTC or its nominee, Cede & Co., is the registered owner of the 2021 Bonds, payments of the principal of and interest on the 2021 Bonds will be made directly to Cede & Co. Disbursement of such payments to the DTC participants is the responsibility of DTC and disbursement of such payments to the owners of beneficial interests in the 2021 Bonds is the responsibility of the DTC participants. (See “Book-Entry Form Only”.)

In any case where the maturity or redemption date or date on which the payment of interest on or principal of the Bonds is due shall be a date other than a Business Day, then payment of such interest, principal or premium, if any, need not be made on such date but may be made on the next succeeding Business Day with the same force and effect as if made on the date of maturity or the date fixed for redemption, and no interest on such payment shall accrue for the period after such date.

Redemption Provisions

Series 2021 New Money Bonds—Mandatory Sinking Fund Redemption of Term Bonds

The Series 2021 New Money Bonds maturing January 1, 2046 and January 1, 2051, respectively, are subject to redemption in part on January 1 of each year to maturity set forth below in the respective principal amounts set forth below at a redemption price of 100% of the principal amount thereof plus accrued interest to the redemption date from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem the principal amounts of Bonds specified:

Series 2021 New Money Bonds Maturing January 1, 2046:

<u>Year</u>	<u>Sinking Fund Installment</u>
2042	\$3,295,000
2043	\$3,430,000
2044	\$3,565,000
2045	\$3,710,000
2046*	\$3,855,000

*final maturity

Series 2021 New Money Bonds Maturing January 1, 2051:

<u>Year</u>	<u>Sinking Fund Installment</u>
2047	\$4,010,000
2048	\$4,170,000
2049	\$4,340,000
2050	\$4,510,000
2051*	\$4,690,000

*final maturity

Series 2021 New Money Bonds--Optional Redemption

The Series 2021 New Money Bonds maturing on or before January 1, 2031 will not be subject to redemption prior to maturity except pursuant to the Make-Whole Redemption described below. The Series 2021 New Money Bonds maturing on or after January 1, 2032 are subject to redemption prior to maturity, at the option of the Authority, as a whole or in part at any time on or after January 1, 2031, at the redemption price of par plus accrued interest to the redemption date.

Series 2021 Refunding Bonds--Optional Redemption

The Series 2021 Refunding Bonds maturing on or before January 1, 2031 will not be subject to redemption prior to maturity except pursuant to the Make-Whole Redemption described below. The Series 2021 Refunding Bonds maturing on or after January 1, 2032 are subject to redemption prior to maturity, at the option of the Authority, as a whole or in part at any time on or after January 1, 2031, at the redemption price of par plus accrued interest to the redemption date.

Series 2021 New Money Bonds and Series 2021 Refunding Bonds-Optional Redemption at the Make-Whole Redemption Price.

The Series 2021 New Money Bonds and the Series 2021 Refunding Bonds are subject to optional redemption on any date prior to the earlier of maturity or January 1, 2031 (the date on which such bond is otherwise subject to optional redemption as set forth above) at the option of the Authority, in whole or in part (and if in part, at the option of the Authority as to maturity and by lot within a maturity) at the Make-Whole Redemption Price.

“Make-Whole Redemption Price” shall mean the greater of (x) the Amortized Value of the Bonds to be redeemed, or (y) the sum of the present values of the payments of principal and interest (not including accrued interest to the redemption date) to be paid on the Bonds to be redeemed from and including the redemption date to the maturity date of such Bonds, discounted to the redemption date on a semiannual basis (assuming a 360 day year of twelve 30 day months) at the Tax-Exempt Municipal Bond Rate for such Bonds plus 15 basis points, plus accrued interest to the redemption date.

“Amortized Value” shall mean the principal amount of the Bonds to be redeemed pursuant to a make-whole call multiplied by the price of such Bonds expressed as a percentage, calculated based on the industry standard method of calculating bond prices, with a delivery date equal to the redemption date, the maturity date of such Bonds and a yield equal to such Bond’s original reoffering yield set forth in the official statement for such Series.

“Tax-Exempt Municipal Bond Rate” shall mean with respect the Bonds on a given redemption date, the “Comparable AAA General Obligations” yield curve rate for the maturity date of the Bonds, as published by Municipal Market Data at the close of business three days prior to the related redemption date. If no

such yield curve rate is established for the applicable year, the “Comparable AAA General Obligations” yield curve rate for the two published maturities most closely corresponding to the applicable year will be determined and the “Tax-Exempt Municipal Bond Rate” will be interpolated or extrapolated from those yield curve rates on a straight-line basis. In calculating the Tax-Exempt Municipal Bond Rate, should Municipal Market Data no longer publish the “Comparable AAA General Obligations” yield curve rate, then the Tax-Exempt Municipal Bond Rate will equal the Consensus Scale yield curve rate for the applicable year made available daily by Municipal Market Advisors. In the event Municipal Market Advisors no longer publishes the Consensus Scale, the Tax-Exempt Municipal Bond Rate will be determined by the Financial Advisor designated by the Authority as the quotation agent, based upon the rate per annum equal to the semiannual equivalent yield to maturity of those tax-exempt general obligation bonds rated in the highest rating category by Moody’s Investors Service and S&P Global Ratings with a maturity date equal to the maturity date of such Bonds having characteristics (other than ratings) most comparable to those of such Bonds in the judgment of the quotation agent. The quotation agent’s determination of the Tax-Exempt Municipal Bond Rate is final and binding in the absence of manifest error.

Under the provisions of Section 532 of the Act, the State may, upon providing sufficient funds therefor, require the Authority to redeem the Bonds in accordance with the terms of redemption then applicable.

Selection of Bonds to be Redeemed. If less than all of the Bonds of a particular Series are called for redemption at any one time, they shall be called in the order of maturity specified by an Authorized Officer of the Authority, and the Trustee, shall select Bonds by lot within a maturity or using such method of selection as it shall consider proper in its discretion taking into account authorized denominations for such Series.

Notice of Redemption. Notice of redemption is to be given by the Trustee in the name of the Authority by mailing a copy of the redemption notice, by first class mail, postage prepaid, not less than 30 days nor more than 60 days prior to the redemption date to registered owners of the Bonds of the Series to be called at their respective addresses appearing in the registration books. No assurance can be given by the Authority that DTC and DTC Participants will promptly transmit notices of redemption to Beneficial Owners.

The giving of the redemption notices described above is not a condition precedent to redemption and any failure to mail such notice to any registered owner will not affect the validity of the proceedings for the redemption of any Bonds.

Delayed Delivery of the Series 2021 Refunding Bonds

The Authority has entered into a Forward Delivery Bond Purchase Agreement on July 14, 2021 (the “Forward Delivery Agreement”) for the Series 2021 Refunding Bonds with RBC Capital Markets, LLC, as Representative of the Underwriters for the Series 2021 Refunding Bonds (the “Representative”). Subject to the terms of the Forward Delivery Agreement, the Authority expects to deliver the Series 2021 Refunding Bonds on or about October 6, 2021, or such later date as may be mutually agreed to by the Authority and the Representative (the “2021B Date of Delivery”).

The obligation of the Underwriters to purchase the Series 2021 Refunding Bonds from the Authority is subject to the satisfaction of certain conditions, as outlined in the Forward Delivery Agreement, on the 2021B Date of Delivery. Because of the longer period between the sale and settlement of the Series 2021 Refunding Bonds, there are certain additional termination rights and settlement conditions that are not generally present in bond sales that do not involve a delayed delivery, and certain

of those additional rights and conditions are summarized below. All the conditions and termination rights with respect to the sale and settlement of the Series 2021 Refunding Bonds are set forth in the Forward Delivery Agreement. The following is a description of certain provisions of the Forward Delivery Agreement. The following description is not to be considered a full statement of the terms of the Forward Delivery Agreement and, accordingly, is qualified by reference thereto and is subject to the full text thereof, a copy of which is available from the Authority and the Representative.

Pursuant to the Forward Delivery Agreement, the Authority has agreed to prepare an updated official statement (the "Updated Official Statement"), to be dated a date not more than twenty-five (25) days and not less than ten (10) days prior to the 2021B Date of Delivery, and which, as of such date, will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

BY PLACING AN ORDER WITH THE UNDERWRITERS FOR THE PURCHASE OF THE SERIES 2021 REFUNDING BONDS, EACH PURCHASER ACKNOWLEDGES AND AGREES THAT THE SERIES 2021 REFUNDING BONDS ARE BEING SOLD ON A "DELAYED DELIVERY" BASIS, THAT THE PURCHASER IS OBLIGATED TO ACCEPT DELIVERY OF AND PAY FOR THE SERIES 2021 REFUNDING BONDS ON THE 2021B DATE OF DELIVERY SUBJECT TO THE CONDITIONS IN THE FORWARD DELIVERY AGREEMENT, AND THAT EACH PURCHASER WILL SIGN AND DELIVER TO THE REPRESENTATIVE, A DELAYED DELIVERY CONTRACT SUBSTANTIALLY IN THE FORM ATTACHED AS APPENDIX G (A "DELAYED DELIVERY CONTRACT") AS A CONDITION TO ANY SERIES 2021 REFUNDING BONDS BEING ALLOCATED TO SUCH PURCHASER. ADDITIONALLY, EACH PURCHASER ACKNOWLEDGES AND AGREES THAT IT WILL REMAIN OBLIGATED TO PURCHASE SUCH SERIES 2021 REFUNDING BONDS IN ACCORDANCE WITH THE TERMS OF THE DELAYED DELIVERY CONTRACT, EVEN IF THE PURCHASER DECIDES TO SELL SUCH SERIES 2021 REFUNDING BONDS FOLLOWING THE DATE OF PURCHASE, UNLESS THE PURCHASER SELLS SUCH SERIES 2021 REFUNDING BONDS TO ANOTHER ENTITY WITH THE PRIOR WRITTEN CONSENT OF THE REPRESENTATIVE AND SUCH ENTITY PROVIDES A WRITTEN ACKNOWLEDGEMENT OF CONFIRMATION OF PURCHASE ORDER AND A DELAYED DELIVERY CONTRACT IN THE SAME RESPECTIVE FORM AS THAT EXECUTED BY THE PURCHASER.

ADDITIONALLY, EACH PURCHASER ACKNOWLEDGES AND AGREES THAT ANY SALE OF THE SERIES 2021 REFUNDING BONDS BY THE PURCHASER DURING THE DELAYED DELIVERY PERIOD (AS DEFINED BELOW) MUST BE ACCOMPANIED BY A DELAYED DELIVERY CONTRACT (IN THE FORM ATTACHED AS APPENDIX G TO THIS OFFICIAL STATEMENT) EXECUTED BY THE NEW PURCHASER, TOGETHER WITH DELIVERY OF THE UPDATED OFFICIAL STATEMENT TO THE NEW PURCHASER.

Date of Delivery for the Series 2021 Refunding Bonds

The Underwriters' obligations under the Forward Delivery Agreement to purchase, accept delivery of and pay for the Series 2021 Refunding Bonds on the 2021B Date of Delivery are conditioned upon the performance by the Authority of its obligations thereunder, the delivery of certain certificates and legal opinions, including, without limitation, the delivery of an opinion of Bond Counsel dated the 2021B Date of Delivery, substantially in the form and to the effect as set forth in APPENDIX F2 to this Official Statement (the "Bond Counsel Opinion"), and the satisfaction of other conditions as of the 2021B Date of Delivery. At any time subsequent to July 29, 2021 (the "Initial Closing") and on or prior to the 2021B Date of Delivery (the "Delayed Delivery Period"), the Underwriters have the right, without

liability, to terminate their obligations under the Forward Delivery Agreement, by notifying the Authority of their election to do so, if:

- (a) any Change in Law (defined below) shall have occurred;
- (b) there shall occur any event which, in the reasonable judgment of the Representative, either (A) makes untrue or incorrect in any material respect any statement or information contained in the Official Statement as updated by the Updated Official Statement, between the date of the Official Statement to and including the 2021B Date of Delivery (other than any statement or information provided by the Underwriters) or (B) is not reflected in the Official Statement but should be reflected therein in order to make the statements and information contained therein not misleading in any material respect and, in either such event, the Authority refuses to permit the Official Statement to be supplemented to correct or supply such statement or information, or the effect of the Official Statement as so corrected or supplemented is, in the reasonable judgment of the Representative, to materially adversely affect the market for the Series 2021 Refunding Bonds or the sale, at the contemplated offering price or prices (or yield or yields), by the Underwriters;
- (c) there shall occur any outbreak of hostilities or any national or international calamity or crisis or a financial crisis or an escalation of any such hostilities, calamity or crisis, the effect of which on the financial markets of the United States is, in the reasonable judgment of the Representative, to materially adversely affect the market for the Series 2021 Refunding Bonds or the sale, at the contemplated offering price or prices (or yield or yields), by the Underwriters of the Series 2021 Refunding Bonds;
- (d) any rating of the Series 2021 Refunding Bonds by a national rating agency rating the Series 2021 Refunding Bonds has been withdrawn or suspended;
- (e) a general suspension of trading on the New York Stock Exchange shall have occurred and be in force or minimum or maximum prices for trading shall have been fixed and be in force or maximum ranges for prices for securities shall have been required and be in force on the New York Stock Exchange, whether by virtue of a determination by such Exchange or by order of the Securities and Exchange Commission or any other governmental authority the effect of which on the financial markets of the United States is, in the reasonable judgment of the Representative, to materially adversely affect the market for the Series 2021 Refunding Bonds or the sale, at the contemplated offering price or prices (or yield or yields), by the Underwriters of the Series 2021 Refunding Bonds;
- (f) a general banking moratorium shall have been declared by either federal or State authorities and be in force or a material disruption in commercial banking and securities settlement and clearance services shall have occurred, the effect of which on the financial markets of the United States is, in the reasonable judgment of the Representative, to materially adversely affect the market for the Series 2021 Refunding Bonds or the sale, at the contemplated offering price or prices (or yield or yields), by the Underwriters of the Series 2021 Refunding Bonds;
- (g) a material disruption in commercial banking or securities settlement, payment or clearance services in the United States shall have occurred;
- (h) the issuance, offering or sale of the Series 2021 Refunding Bonds as contemplated by the Official Statement is or would be in violation of any provision of the federal or state securities laws, including the Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, or the Trust Indenture Act of 1939, as amended; or
- (i) Bond Counsel determines that they will not be able to deliver their opinion substantially in the form attached as Appendix F-2 to the Official Statement.

If, on the 2021B Date of Delivery, the Authority is unable to satisfy the conditions to the obligations of the Underwriters to purchase, to accept delivery of and to pay for the Series 2021 Refunding Bonds as set forth in the Forward Delivery Agreement or if the obligations of the Underwriters to purchase, to accept delivery of and to pay for the Series 2021 Refunding Bonds are terminated for any reason permitted by items (a) through (i) above, the Forward Delivery Agreement will terminate and none

of the Underwriters or the Authority will be under any further obligation under the Forward Delivery Agreement.

A "Change in Law" means (i) any change in or addition to applicable federal or State law, whether statutory or as interpreted by the courts, including any changes in or new rules, regulations or other pronouncements or interpretations by federal or State agencies, (ii) any legislation enacted by the Congress of the United States or introduced therein or recommended for passage by the President of the United States (if such enacted, introduced or recommended legislation has a proposed effective date that is on or before the Series 2021B Date of Delivery), (iii) any law, rule or regulation proposed or enacted by any governmental body, department or agency (if such proposed or enacted law, rule or regulation has a proposed effective date that is on or before the 2021B Date of Delivery) or (iv) any judgment, ruling or order issued by any court or administrative body, which in the case of any of (i), (ii), (iii) or (iv) would, (A) as to the Underwriters, prohibit (or have the retroactive effect of prohibiting, if enacted, adopted, passed or finalized) the Underwriters from purchasing the Series 2021 Refunding Bonds as provided in the Forward Delivery Agreement or selling the Series 2021 Refunding Bonds or beneficial ownership interests therein to the public; (B) as to the Authority, would make the issuance, sale or delivery of the Series 2021 Refunding Bonds illegal (or have the retroactive effect of making such issuance, sale or delivery illegal, if enacted, adopted, passed or finalized); or (C) eliminate the exclusion from gross income for federal income tax purposes of interest on the Series 2021 Refunding Bonds (or have the retroactive effect of eliminating such exclusion if enacted, adopted, passed, or finalized) provided, however, that such change in or addition to law, legislation, rule or regulation or judgment, ruling or order shall have become effective, been enacted, introduced or recommended, been proposed or enacted or been issued as the case may be, after the date of the Forward Delivery Agreement.

If at any time prior to the 2021B Date of Delivery, Bond Counsel determines that they are unable for any reason, including a Change of Law, to deliver the Bond Counsel Opinion substantially in the form attached as Appendix F2 to the Official Statement, Bond Counsel will provide written notice thereof to the Authority and the Representative (the "Bond Counsel Notice"). Unless the Authority notifies the Representative within five business days of receipt of the Bond Counsel Notice that it has retained a new firm or firms to deliver the Bond Counsel Opinion substantially in the form attached as Appendix F2 to the Official Statement, the Underwriters will have the right to terminate their obligations under the Forward Delivery Agreement.

If the Change in Law involves the enactment of legislation which only diminishes the value of, as opposed to eliminating the exclusion from gross income for federal income tax purposes of, interest payable on "state or local bonds," the Authority may, nonetheless, be able to satisfy the requirements for the delivery of the Series 2021 Refunding Bonds. In such event, the Underwriters would be obligated to purchase the Series 2021 Refunding Bonds from the Authority and the purchasers would be required to accept delivery of the purchased Series 2021 Refunding Bonds from the Underwriters.

The Representative has advised the Authority that the Series 2021 Refunding Bonds will be sold only to purchasers who execute a Delayed Delivery Contract. The Authority will not be a party to the Delayed Delivery Contracts, and the Authority is not in any way responsible for the performance thereof or for any representations or warranties contained therein. The rights and obligations under the Forward Delivery Agreement are not conditioned or dependent upon the performance of any Delayed Delivery Contract.

The Underwriters may not refuse to purchase the Series 2021 Refunding Bonds from the Authority except as expressly described above, and the purchasers may not refuse to purchase the Series 2021 Refunding Bonds from the Underwriters except as expressly described in the Delayed Delivery

Contract. See "APPENDIX G -Form of Delayed Delivery Contract for the Series 2021 Refunding Bonds".

THE UNDERWRITERS (AND, IN TURN, THE PURCHASERS OF THE SERIES 2021 REFUNDING BONDS FROM THE UNDERWRITERS) MAY NOT REFUSE TO PURCHASE THE SERIES 2021 REFUNDING BONDS BY REASON OF "GENERAL MARKET OR CREDIT CHANGES" INCLUDING, BUT NOT LIMITED TO CHANGES IN THE RATINGS ASSIGNED TO THE SERIES 2021 REFUNDING BONDS AT THE INITIAL CLOSING, CHANGES IN THE FINANCIAL CONDITION, OPERATIONS, PERFORMANCE, PROPERTIES OR PROSPECTS OF THE AUTHORITY PRIOR TO THE 2021B DATE OF DELIVERY, CHANGES IN THE GENERAL LEVEL OF INTEREST RATES OR CHANGES IN VALUE OF THE SERIES 2021 REFUNDING BONDS FOR ANY REASON OTHER THAN A FULL ELIMINATION OF TAX EXEMPTION OR FOR ANY REASON OTHER THAN DESCRIBED BY ITEMS (a) THROUGH (i) ABOVE.

Additional Risks Related to the Delayed Delivery Period

The Official Statement to be delivered in connection with the 2021B Date of Delivery may reflect changes to certain information presented in the Original Official Statement. Such changes in the information presented will not permit the Underwriters to terminate the Forward Delivery Agreement or release the purchasers from their commitments to purchase the Series 2021 Refunding Bonds unless the change reflects an event described under "Date of Delivery for the Series 2021 Refunding Bonds" above.

In addition to the risks set forth above, purchasers of the Series 2021 Refunding Bonds are subject to certain additional risks, some of which are described below and which will not constitute grounds for purchasers to refuse to accept delivery of and pay for the Series 2021 Refunding Bonds.

Opinion of Bond Counsel: Tax Law Risk.

Subject to the additional conditions of settlement described under "Date of Delivery for the Series 2021 Refunding Bonds" above, the Forward Delivery Agreement obligates the Authority to deliver and the Underwriters to acquire the Series 2021 Refunding Bonds if the Authority delivers the Bond Counsel Opinion substantially in the form attached as Appendix F2 to the Official Statement. During the 2021B Delayed Delivery Period, new legislation, new court decisions, new regulations, or new rulings may be enacted, promulgated or interpreted that might prevent Bond Counsel from rendering its opinion or otherwise affect the substance of such opinion. Notwithstanding that the enactment of new legislation, new court decisions or the promulgation of new regulations or rulings might diminish the value of, or otherwise affect, the exclusion of interest on the Series 2021 Refunding Bonds for purposes of federal income taxation payable on "state or local bonds," the Authority might be able to satisfy the requirements for the delivery of the Series 2021 Refunding Bonds. In such event, the Underwriters would be required to accept delivery of the Series 2021 Refunding Bonds. Prospective purchasers are encouraged to consult their tax advisors regarding the likelihood of any changes in tax law and the consequences of such changes to such purchasers.

Ratings Risk.

Ratings have been assigned to the Series 2021 Refunding Bonds as described under "RATINGS". No assurances can be given that the ratings assigned to the Series 2021 Refunding Bonds on the 2021B Date of Delivery will not be different from that currently assigned to the Series 2021 Refunding Bonds. Issuance of the Series 2021 Refunding Bonds and the Underwriters' obligations under the Forward Delivery Agreement are not conditioned upon the assignment of any particular rating for the Series 2021 Refunding Bonds or the maintenance of the initial ratings of the Series 2021 Refunding Bonds.

Market Value Risk.

The market value of the Series 2021 Refunding Bonds as of the 2021B Date of Delivery may be affected by a variety of factors including, without limitation, general market conditions, the ratings then assigned to the Series 2021 Refunding Bonds, the financial condition and operations of the Authority, and federal and State income tax and other laws. The market value of the Series 2021 Refunding Bonds as of the 2021B Date of Delivery could therefore be higher or lower than the price to be paid by the initial purchasers of the Series 2021 Refunding Bonds and that difference could be substantial. The Underwriters will nevertheless be obligated to take delivery of and pay for the Series 2021 Refunding Bonds if the conditions in the Forward Delivery Agreement are satisfied on the 2021B Date of Delivery. NEITHER THE AUTHORITY NOR THE UNDERWRITERS MAKE ANY REPRESENTATION AS TO THE EXPECTED MARKET PRICE OF THE SERIES 2021 REFUNDING BONDS AS OF THE 2021B DATE OF DELIVERY. Further, no assurance can be given that the introduction or enactment of any future legislation will not affect the market price for the Series 2021 Refunding Bonds as of the 2021B Date of Delivery or thereafter or not have a materially adverse impact on any secondary market for the Series 2021 Refunding Bonds.

Termination of Forward Delivery Agreement.

The Underwriters may terminate the Forward Delivery Agreement by notification to the Authority on or prior to the 2021B Date of Delivery if any of the events described above in items (a) through (i) under "Date of Delivery for the Series 2021 Refunding Bonds" occurs. Although the Authority is not aware, as of the date of this Official Statement, of any information that would lead it to believe that it will be unable to satisfy its obligations under the Forward Delivery Agreement on the 2021B Date of Delivery, no assurances can be made that, as of the 2021B Date of Delivery: (i) there will have been no Change of Law; (ii) the facts and circumstances that are material to one or more of the required legal opinions will not differ from the facts and circumstances as of the Initial Closing Date; or (iii) that all necessary certifications and representations can or will be delivered and made in connection with the proposed issuance and delivery of the Series 2021 Refunding Bonds. As a consequence of any of the foregoing, one or more of the foregoing legal opinions may not be rendered or one or more of the 2021B Date of Delivery conditions in the Forward Delivery Agreement may not be met, with the possible result that the delivery of the Series 2021 Refunding Bonds will not occur.

Secondary Market Risk.

The Underwriters are not obligated to make a secondary market in the Series 2021 Refunding Bonds, and no assurances can be given that a secondary market will exist for the Series 2021 Refunding Bonds during the Delayed Delivery Period. Purchasers of the Series 2021 Refunding Bonds should assume that the Series 2021 Refunding Bonds will be illiquid throughout the Delayed Delivery Period.

Book-Entry Form Only

Unless otherwise noted, the information contained in APPENDIX E, "Book-Entry-Only System" has been extracted from information given by DTC. Neither the Authority, the Trustee, nor the Underwriters makes any representation as to the completeness or accuracy of such information or as to the absence of material adverse changes in such information subsequent to the date hereof.

NONE OF THE AUTHORITY, THE TRUSTEE OR THE UNDERWRITERS WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO SUCH DTC PARTICIPANTS, INDIRECT PARTICIPANTS OR TO THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT

TO THE PAYMENTS OR THE PROVIDING OF NOTICE FOR SUCH DTC PARTICIPANTS, INDIRECT PARTICIPANT OR THE BENEFICIAL OWNERS.

SOURCES OF PAYMENT AND SECURITY FOR THE BONDS

Pledge of Revenues and Funds

The 2021 Bonds are general obligations of the Authority and are payable from and secured by a pledge of the Net Revenues, the proceeds from the sale of the 2021 Bonds, and all funds and accounts established under the Resolutions (with the exception of the Operating Fund, the Subordinated Indebtedness Fund, and the Rebate Fund) subject only to the provisions of the Bond Resolution permitting the application thereof for the purposes and on the terms and conditions set forth therein.

Under the Bond Resolution, the Authority's pledge of all Net Revenues consists of (a) Revenues, defined as the sum of (i) all tolls, revenues, rates, fees, charges, rents and other income and receipts, in each case derived by or for the account of the Authority from the operation of the Bridge System or from the ownership or holding of certain properties constituting a part of the Bridge System, (ii) the proceeds of any insurance covering business interruption loss relating to the Bridge System, (iii) any proceeds of the investment of any and all of the foregoing and (iv) the investment proceeds of any and all amounts in the Funds and Accounts held by the Trustee under the Bond Resolution, other than the Subordinated Indebtedness Fund and the Rebate Fund, less (b) all Operating Expenses of the Authority. See "APPENDIX D — SUMMARY OF CERTAIN PROVISIONS OF THE RESOLUTIONS."

Under the Bond Resolution, all Revenues are to be collected by the Authority and deposited promptly in the Revenue Fund. After the tenth (10th) day and on or before the last day of each month, the Trustee shall pay from amounts in the Revenue Fund to the Authority to be credited to the Operating Fund established under the Bond Resolution of an amount not more than sufficient, with the amounts then in the Operating Fund, to provide for the Operating Expenses for the remainder of the current month and the next two months. On or before the tenth (10th) day of each month, the Trustee shall make the deposits in the Funds and Accounts established under the Bond Resolution and held by the Trustee.

The security for the 2021 Bonds will be for the benefit of all Bonds issued under the Bond Resolution, which Bonds will rank on a parity and will be secured equally and ratably with each other. (See "Additional Indebtedness" below.) The Authority may establish a Series Reserve by Supplemental Resolution for the deposit of moneys other than Revenues to secure one or more Series, and may provide by Supplemental Resolution and a particular Series shall not be secured by the Debt Service Reserve Fund.

Bond Resolution Amendments

The Fifth Supplemental Resolution adopted May 27, 2021 includes certain amendments to the Bond Resolution summarized below. Such amendments take effect as to the Series 2012 Bonds on the earlier of maturity or defeasance of the Series 2012 Bonds, and take effect as to the 2021 Bonds as of their date of issuance. Such amendments include the following:

- The definition of Balloon Indebtedness is clarified;
- Kroll Rating Agency, Inc. is added as a rating agency for purposes of the Resolution;

- The definition of Revenues is made more flexible by including federal or other public sources so long as the Authority is not precluded by law, the grant or other operative contract or instrument from pledging or applying such amounts as Revenues;
- A Supplemental Resolution for a Series may provide for a stand-alone debt service reserve in an amount determined under such Supplemental Resolution in lieu of a deposit to the Debt Service Reserve Fund for such Series;
- A Series of refunding bonds may be issued under the Resolution if the Aggregate Debt Service savings are realized in each Fiscal Year (or the additional bonds test for new money project bonds is met);
- Provisions for redemption notices and selection of bonds to be redeemed are modernized; and
- Other clarifications and corrections are made.

Toll Rate Covenant

The Authority has covenanted in the Bond Resolution, to fix, charge and collect tolls and other charges to provide for: (i) the timely payment of debt service on the Bonds and the principal of and interest on any other indebtedness of the Authority payable from Net Revenues; (ii) the proper operation and maintenance of the Bridge System; and (iii) all other payments required for the Bridge System not otherwise provided for.

Without limiting the generality of the foregoing, the Authority has covenanted to at all times fix, charge and collect such tolls and other charges for use of the Bridge System as shall be required by the Act and in order that in each Fiscal Year Net Revenues, less investment earnings on amounts held in the General Fund and the Construction Fund included therein, will be at least an amount equal to the Net Revenue Requirement, which is the greater of (i) the sum of the Aggregate Debt Service and the Required Deposits for such Fiscal Year, or (ii) 1.75 times the Aggregate Debt Service for such Fiscal Year. A failure to generate Net Revenues as set forth in this paragraph will not constitute an "event of default" under the Bond Resolution if the Authority takes timely action to correct any such deficiency as described in the following paragraph.

The Authority has covenanted in the Bond Resolution to complete a review, on or before the sixtieth day preceding the first day of each Fiscal Year, of its financial condition for the purpose of estimating whether Net Revenues, less investment earnings on amounts held in the General Fund and the Construction Fund included therein, for such year and the next succeeding year will be sufficient to comply with the rate covenant. The Authority has covenanted to adopt and place in effect no later than the first day of the fourth month of the next Fiscal Year the schedule of tolls and other charges recommended by the Traffic Consultant to bring the Authority into compliance with the rate covenant. Failure to comply with the rate covenant will not be an Event of Default if the Authority establishes a schedule of tolls and other charges recommended by the Traffic Consultant where a schedule complying with the rate covenant, is impracticable or would result in a reduction of Net Revenues.

The Authority has retained the Traffic Consultant to perform a review of estimated Revenues. See "APPENDIX A—REPORT OF TRAFFIC CONSULTANT."

The Act provides that rates of tolls shall be determined by the Authority subject to the approval of the Commissioner of the New York State Department of Transportation (the "Commissioner") and to the provisions and limitations of any agreement with the bondholders and noteholders. The Act further provides that nothing in the Act shall give the Commissioner any power or authority to require any act or thing which will constitute a breach of any agreement with the bondholders or noteholders. Additionally, pursuant to the Act the State has pledged to and agreed with the holders of any bonds or notes of the

Authority that the State will not limit or alter the rights vested in the Authority by the Act to establish and collect such charges and tolls as may be convenient or necessary to produce sufficient revenue to meet the expense of maintenance and operation and to fulfill the terms of any agreement made with the holders of bonds or notes, or in any way impair the rights or remedies of bondholders or noteholders, until the bonds and notes, together with the interest thereon, with interest on any unpaid installments of interest, and all costs and expenses in connection with any actions or proceedings by or on behalf of the bondholders or noteholders, are fully met and discharged.

The Authority is subject to certain financial disclosure, reporting and public hearing requirements of the Public Authorities Law and to the requirements of State Environmental Quality Review Act and the State Administrative Procedures Act with respect to proposed increases in toll rates.

Federal law (33 U.S.C. Section 508) provides that tolls for passage over bridges constructed under the authority of the Bridge Act of 1906 or the General Bridge Act of 1946 shall be "just and reasonable". The 1906 Bridge Act applies to all bridges constructed over navigable waters of the United States after March 23, 1906, and the General Bridge Act of 1946 applies to bridges over navigable waters of the United States the construction of which is approved after August 2, 1946. The Authority believes that the tolls reflected in Table 3-a, Table 3-b and "APPENDIX A — REPORT OF TRAFFIC CONSULTANT" are just and reasonable.

The State Agreement

Pursuant to the Act, the State of New York pledges to and agrees with the holders of any bonds or notes of the Authority that it will not authorize the construction or maintenance of any additional highway crossings for vehicular traffic over, under or across the waters of the Hudson River in addition to the Bridge System now authorized which will be competitive with the Bridge System of the Authority. Any crossing will be considered as competitive only if it shall form a connection for vehicular traffic over, under or across the Hudson River south of a line drawn across the Hudson River fifteen miles north of the Rip Van Winkle Bridge, and north of a line drawn across the Hudson River at the Bear Mountain Bridge.

Debt Service Reserve Requirement

The Bond Resolution establishes a Debt Service Reserve Fund and requires that there shall be deposited into the Debt Service Reserve Fund an amount necessary to make the amount on deposit equal to the Debt Service Reserve Requirement, after giving effect to the issuance of such Bonds.

The Debt Service Reserve Requirement is an amount equal to the lesser of (A) the Maximum Annual Debt Service due to be paid on Bonds then Outstanding in the then current or any future Fiscal Year to which the calculation relates, excluding interest to be paid from deposits in the Debt Service Fund made from the proceeds of Debt (including amounts, if any, transferred thereto from the Construction Fund) or (B) 125% of the average annual Estimated Aggregate Debt Service with respect to all Outstanding Bonds in the then current and all future Fiscal Years; provided, however, that the amount required to be deposited in the Debt Service Reserve Fund as a condition to the issuance of any Series of Additional Bonds shall not exceed 10% of the stated principal amount of such Series of Bonds when issued, or, to the extent such Series consisted of Bonds that when issued, had more than a de minimis amount of original issue discount or premium, the issue price (net of pre-issuance accrued interest) of such bonds; and provided further that in any event the Debt Service Reserve Requirement with respect to all of the Outstanding Bonds shall not exceed the maximum amount that may be held in the Debt Service Reserve Fund, in the opinion of nationally recognized bond counsel, with respect to the Bonds intended to be Tax-Exempt without adversely affecting the Tax-Exempt status of such Bonds; and further provided that if at any time the Authority at its option shall have established one or more Reserve Deposits in

connection with the issuance of any Series of Bonds, the Debt Service Reserve Requirement as of any date of calculation shall be reduced by an amount equal to the sum of all Reserve Deposits not due and payable in such current or future Fiscal Year to which the calculation relates; and provided further that a different Debt Service Reserve Requirement for Bonds issued as Variable Rate Debt may be established in the Supplemental Resolution authorizing such Series; and provided further that on conversion of Variable Rate Debt to a fixed rate, the Debt Service Reserve Requirement for such Debt shall be increased to the level otherwise required by this Resolution. Amounts on deposit in the Debt Service Reserve Fund will be applied, to the extent Net Revenues are not available, to pay principal and interest on the Bonds. See "APPENDIX D — SUMMARY OF CERTAIN PROVISIONS OF THE RESOLUTIONS — Debt Service Reserve Fund."

A Supplemental Resolution may provide for the deposit of amounts other than Revenues in a Series Reserve pledged solely to a particular Series of Bonds, and may provide that the Debt Service Reserve Fund will not secure such Series. The Debt Service Reserve Requirement will be determined without regarding to any such Series.

In lieu of making cash deposits to the Debt Service Reserve Fund, the Authority may satisfy the Debt Service Reserve Requirement by depositing Financial Guarantees into the Debt Service Reserve Fund. In addition, the Authority may satisfy the Debt Service Reserve Requirement by covenanting to make Reserve Deposits over a period of not more than sixty (60) months. See "APPENDIX D - SUMMARY OF CERTAIN PROVISIONS OF THE RESOLUTIONS — Satisfaction of the Debt Service Reserve Requirement."

At the date of delivery of the Series 2021 New Money Bonds, the Authority will withdraw excess amounts from the Debt Service Reserve Fund, such that the amount on deposit in the Debt Service Reserve Fund taking into account the issuance of the Series 2021 New Money Bonds and the Outstanding Series 2012 Bonds prior to the 2021B Date of Delivery, will be equal to the Debt Service Reserve Requirement. At the 2021B Date of Delivery, the Authority will withdraw excess amounts from the Debt Service Reserve Fund, such that the amount on deposit in the Debt Service Reserve Fund, taking into account the issuance of the Series 2021 New Money Bonds, the Series 2021 Refunding Bonds and the unrefunded maturity of the Series 2012 Bonds, will be equal to the Debt Service Reserve Requirement.

Additional Indebtedness

Additional Bonds

Subject to the statutory cap (See "THE AUTHORITY"), the Authority may issue Additional Bonds under the Bond Resolution on a parity with all Bonds Outstanding for one of the following purposes: (i) financing the Costs of Additional Projects; (ii) financing the costs of completing any Additional Project; (iii) refunding any Outstanding Series of Bonds; or (iv) providing funds for deposit in the Funds and Accounts, including the Debt Service Reserve Fund, and paying the costs incident to the issuance of a Series of Bonds.

The Authority may issue Additional Bonds for the purpose of financing the costs of constructing an Additional Project only upon the satisfaction of certain requirements, including:

- (a) A certificate of an Authorized Officer of the Authority setting forth: (i) Net Revenues, less investment earnings on amounts held in the General Fund and the Construction Fund included therein, for any period of twelve (12) consecutive months out of the eighteen (18) calendar months preceding the authentication and delivery of the Additional Bonds, provided that, if any adjustment of toll rates had been put into effect during or after the end of such 12-

month period, such Net Revenues will be adjusted to reflect Revenues which the Traffic Consultant estimates would have resulted had the toll rate adjustment been in effect for the entire 12-month period, and the Additional Bond Requirement for such 12 months and demonstrating that such Net Revenues, less investment earnings on amounts held in the General Fund and the Construction Fund included therein, equal or exceed the Additional Bond Requirement, (ii) the Debt Service Reserve Requirement with respect to all Bonds Outstanding immediately after the authentication and delivery of such Additional Bonds, (iii) the Estimated Aggregate Debt Service for the then current Fiscal Year and each of the five Fiscal Years following the then current Fiscal Year and (iv) the other estimated Required Deposits for the current and the next five Fiscal Years; and

(b) A certificate of the Traffic Consultant stating whether, to the best of its knowledge, any Federal, State or other agency is then projecting or planning the construction, improvement, or acquisition of any bridge or other facility which, in the opinion of the Traffic Consultant, may be materially competitive with any part of the Bridge System and which may materially and adversely affect Revenues, and the estimated date of completion of such bridge or other facility; and

(c) A certificate of the Traffic Consultant setting forth, for the then current and the next five fiscal years, estimates of Revenues after taking account of (i) the construction of the Project or Additional Project not yet completed if the Cost to complete such Project or Additional Project has been provided, or will be provided from the issuance of such Additional Bonds, (ii) any adjustment of toll rates which had been placed in effect subsequent to the beginning of the 12-month period referred to in subparagraph (a) above, as if such toll rate adjustment had been in effect from the beginning of such period until the effective date of any subsequent adjustment presumed necessary and (iii) any adjustment of toll rates, which, in the opinion of the Traffic Consultant, would be necessary to comply with the provisions of the Bond Resolution as if such adjustment were to be in effect from its effective date to the effective date of any other such adjustment; and

(d) If applicable, a certificate of the Consulting Engineer setting forth (i) the estimated total Cost of the Project or such Additional Project and (ii) the estimated date of completion of the Project or the Additional Project; and

(e) A certificate of an Authorized Officer of the Authority setting forth (i) the estimated Revenues and estimated Operating Expenses (based on the certificates delivered pursuant to subparagraphs (c) and (d) above) for the current and the next five Fiscal Years, taking into account the construction of the Project or any Additional Project not yet completed if the Cost to complete the Project or such Additional Project has been provided, or will be provided from the issuance of such Additional Bonds, and (ii) the opinion that such estimated Net Revenues, less investment earnings on amounts held in the General Fund and the Construction Fund included therein, for the current and the next five Fiscal Years equal or exceed the Estimated Net Revenue Requirement (based on the certificate delivered pursuant to subparagraph (a) above) for each such year and that estimated Net Revenues less investment earnings on amounts held in the General Fund and the Construction Fund included therein in such fifth full Fiscal Year equal or exceed that sum of Estimated Aggregate Debt Service and the Subordinated Indebtedness Requirement for any particular year which results in the largest such sum for the then current or any future year immediately after the authentication and delivery of the Bonds being issued; and

(f) The amount, if any, to be deposited in the Debt Service Reserve Fund so that the balance in such Fund will equal the Debt Service Reserve Requirement immediately after delivery of such Additional Bonds.

The Additional Bond Requirement is an amount equal to the greater of (A) the sum of (i) the sum of the Estimated Aggregate Debt Service and the Subordinated Indebtedness Requirement for any particular Fiscal Year which results in the largest such sum for the current or any future Fiscal Year immediately after the authentication or delivery of such Additional Bonds and (ii) Required Deposits exclusive of the Subordinated Indebtedness Requirement, for the 12-month period immediately prior to such authentication and delivery; or (B) 1.75 times the Maximum Annual Debt Service with respect to all Bonds Outstanding immediately after such authentication and delivery of the Additional Bonds.

The Authority may issue Additional Bonds for the purpose of financing the costs of completing the Project or any Additional Project upon the satisfaction of certain requirements, including:

(a) A certificate of an Authorized Officer of the Authority stating that the moneys on deposit in the applicable Account of the Construction Fund are insufficient to pay such costs; and

(b) A certificate of the Consulting Engineer stating that the proceeds of such Additional Bonds are sufficient to complete the Project or such Additional Project.

Refunding Bonds

The Authority also may issue one or more Series of Refunding Bonds at any time: (a) to refund the principal and interest or principal only or interest only of Outstanding Bonds of one or more Series, or (b) to refund one or more maturities within a Series of any Bonds or one or more maturities within one or more Series, or (c) to refund any Outstanding Subordinated Indebtedness. Refunding Bonds shall be issued in a principal amount sufficient, together with other moneys available therefor, to accomplish such refunding and to make the deposits in the Funds and Accounts under the Bond Resolution required by the provisions of the Supplemental Resolution authorizing such Bonds.

Refunding Bonds may be issued for the purpose described in clause (c) above if the Authority meets the tests described above relating to Additional Bonds.

Refunding Bonds may be issued for any of the purposes described in clauses (a) or (b) above without meeting the tests above upon receipt by the Trustee of a certificate of an Authorized Officer setting forth the Aggregate Debt Service for the then and each future Fiscal Year to and including the Fiscal Year in which the latest maturity of any Bonds of any Series then Outstanding matures (x) with respect to the Bonds of all Series Outstanding immediately prior to the date of authentication and delivery of such Refunding Bonds, and (y) with respect to the Bonds of all Series to be Outstanding immediately thereafter, and demonstrating that the Aggregate Debt Service set forth for each Fiscal Year pursuant to (y) above is no greater than that set forth for such Fiscal Year pursuant to (x) above.

Subordinated Indebtedness

Additionally, the Authority may issue Subordinated Indebtedness payable out of and secured by a pledge of amounts in the Subordinated Indebtedness Fund or the General Fund as provided by the Authority in a resolution determining various priorities in the liens and pledges securing Subordinated Indebtedness. However, any pledge of amounts in the Subordinated Indebtedness Fund or the General Fund to secure any such Subordinated Indebtedness shall be subordinate in all respects to the security,

pledge and lien established by the Bond Resolution as security for Bonds. Nothing in the Bond Resolution should be construed to require that the payment of or pledges securing any particular issue of Subordinated Indebtedness be on a parity with any other issue of Subordinated Indebtedness. Subordinated Indebtedness may not be issued unless, in connection therewith, an Authorized Officer of the Authority shall file with the Trustee a certificate setting forth the estimated Net Revenues for each of the five full Fiscal Years following the incurring of the Subordinated Indebtedness and demonstrating that, after the payment of any required debt service on the Subordinated Indebtedness, such estimated Net Revenues will be sufficient to satisfy the Authority's toll rate covenant (see "Toll Rate Covenant" above). Such Net Revenues will be estimated by an Authorized Officer in accordance with the Additional Bonds requirement (see "Additional Bonds" above).

Issuance of Bond Anticipation Notes

Whenever the Authority shall have authorized the issuance of a Series of Bonds, the Authority may, by resolution, authorize the issuance of notes (and the renewals thereof) in anticipation of the issuance of such Bonds. The principal of and interest on such notes and renewals thereof shall be payable from the proceeds of such notes or from the proceeds of the sale of the Series of Bonds in anticipation of which the notes were issued. The proceeds of such Bonds may be pledged for the payment of the principal of and interest on such notes and any such pledge shall have a priority over any other pledge of such proceeds created by the Resolution. Any notes may be issued as Additional Bonds subject to the provisions of Section 2.05. Any notes may be issued as Balloon Indebtedness to the extent provided in the resolution authorizing such notes. Any notes may be issued as Subordinated Indebtedness in which event such interest shall be payable from the Subordinate Indebtedness Fund. Unless a supplemental resolution provides that the notes shall be Additional Bonds, such notes shall not be taken into account in the determination of Aggregate Debt Service.

Operation and Maintenance of Bridge Facilities

Under the Bond Resolution, the Authority has covenanted: (a) at all times to operate or cause to be operated the Bridge System properly and in a sound and economical manner; (b) at all times to maintain, preserve, reconstruct and keep the same or cause the same to be so maintained, preserved, reconstructed and kept, with the appurtenances and every part and parcel thereof, in good repair, working order and condition; and (c) from time to time to make or cause to be made all necessary and proper repairs, replacements and renewals so that at all times the operation of the Bridge System may be properly and advantageously conducted.

Under the Bond Resolution, the Authority has covenanted also to determine by resolution, at least annually, the amount necessary to comply with the covenant in the paragraph above and to certify to the Trustee annually the amount necessary to be accumulated in the Maintenance Reserve Fund to comply with such covenant. Such amount may not be less than that recommended by the Consulting Engineer to accompany the Authority's certificate.

Insurance

The Authority has covenanted, pursuant to the Bond Resolution, to maintain with responsible insurers all insurance in its judgment required and reasonably obtainable, to provide against (i) loss or damage and loss of revenues, (ii) war risk (if such insurance is obtainable from the United States Government or an agency thereof), and (iii) public liability to the extent necessary to protect the interest of the Authority and the Bondholders. Any such insurance shall be in the form of policies or contracts for insurance with insurers of good standing and shall be payable to the Authority; provided, however, that regarding insurance required above, the Authority, in a resolution, may determine to pay into a separate

account in the Insurance Fund, amounts sufficient (in the sole judgment of the Authority) with the investments therein to provide coverage in addition to or instead of such policies or contracts of insurance described above or as a reserve against potential liability to other parties.

The Authority does not carry replacement value insurance on the aggregate value of the Bridges. The Authority currently carries property insurance on its vehicular bridges as a group in an amount determined annually by the Authority, currently at \$380,000,000 subject to a deductible equal to the greater of \$100,000 or 3% of the insured value. The Consulting Engineer determined as of November 2020 that the bridge span with the largest cost of replacement is the South Span of the Newburgh-Beacon Bridge, at \$398,870,000. Earthquake and flood limits are currently \$100,000,000. Coverage includes lost revenues resulting from damage to a bridge structure. The Authority currently carries property coverage for the Walkway Over the Hudson Bridge at \$80,000,000. The Authority currently has policies of insurance covering liability, automobiles, watercraft, police professional, and public officials. The Authority also currently has terrorism coverage under the Terrorism Risk Insurance Act of 2002. Each of the insurance policies is subject to deductible and/or self-insurance retention.

The Authority's current policies may be modified subject to the foregoing covenants. Available insurance coverage and rates vary from time to time, and there is no assurance that the Authority will maintain any particular type or amount of coverage.

THE AUTHORITY

The Authority is a body corporate and politic and public benefit corporation created in 1932 and existing pursuant to the Act. The Act provides that the Authority shall continue its corporate existence and operate and maintain the Bridge System so long as it shall have bonds or other obligations outstanding and until its existence shall be terminated by law. Upon cessation of the Authority, all its rights and properties shall pass to the State of New York.

Statutory Cap

The Act authorizes the Authority to issue negotiable bonds in conformity with the applicable provisions of the Uniform Commercial Code for any corporate purpose in the aggregate principal amount of not exceeding \$153,255,000, the statutory cap in effect as of the date of this Official Statement. In addition, the Authority is authorized to issue, from time to time whenever it deems refunding expedient, bonds in such principal amount as it may determine for the purpose of refunding bonds then outstanding and to pay the costs incurred in connection with said refunding; provided that upon a refunding the aggregate principal amount of outstanding bonds may be greater than \$153,255,000 only if the present value of the aggregate debt service of the refunding bonds does not exceed the present value of the aggregate debt service of the refunded bonds.

Prior to the issuance of the 2021 Bonds, the principal amount of Bonds Outstanding subject to the statutory cap is \$58,090,000, leaving a remaining unused cap of \$95,165,000. After giving effect to the issuance of the Series 2021 New Money Bonds and as of the issue date thereof, the only Outstanding Bonds will be the Series 2021 New Money Bonds and the Series 2012 Bonds and the remaining unused cap will be \$21,865,000. After giving effect to the issuance of the Series 2021 New Money Bonds and the Series 2021 Refunding Bonds, the only Outstanding Bonds will be the Series 2021 New Money Bonds, the Series 2021 Refunding Bonds, and the Series 2012 Bonds maturing January 1, 2022, and the remaining unused cap will be \$30,310,000.

The Authority has never defaulted in payment of principal of or interest on its bonds.

Commissioners, Officers and Senior Staff of the Authority

The Authority consists of seven commissioners appointed by the Governor of the State of New York with the advice and consent of the New York State Senate. Current members appointed in 2020 serve for staggered terms indicated below and successors are appointed for terms of five years each. Vacancies in the Authority occurring otherwise than by expiration of term are filled for the unexpired term in the manner previously stated. Pursuant to the New York State Public Officers Law, commissioners of the Authority continue to serve until a successor is appointed and qualified. The commissioners of the Authority receive no compensation for their services, but may be reimbursed for their necessary expenses incurred in connection with their duties. The commissioners choose their own Chair and may appoint other officers.

The present commissioners of the Authority are as follows:

Joan McDonald, Chair, has served as a Commissioner of the New York State Bridge Authority since 2020 and was elected as Chair by its commissioners in 2020. She resides in Putnam County. Chair McDonald has a wealth of experience in transportation and government. Chair McDonald currently serves as the Director of Operations for Westchester County and served as the Commissioner of the New York State Department of Transportation from 2011-2015. She has served on the Transportation Research Board and the Women's Transportation Seminar. She currently serves on the National Infrastructure Advisory Council. She received her master's degree in public administration from Harvard University and her bachelor's degree from LeMoyne College. Her term expires in July 2027.

Maria Bruni, Vice Chair, has served as a Commissioner of the New York State Bridge Authority since 2020 and was elected Vice Chair in 2020. A resident of the City of Middletown, Vice Chair Bruni's career in economic development and municipal government began in 1994 with the City of Middletown and for which she currently holds the position of Economic & Community Development Director. Vice Chair Bruni is a lifelong resident of the Hudson Valley and resides in the City of Middletown. Commissioner Bruni's term expires in July 2027.

Alexander Berardi has served as a Commissioner of the New York State Bridge Authority since 2020. A resident of the Hudson Valley, he is the President of Trailways.com and Director at Trailways of New York. He formerly served on the Board of and as an Executive Committee Member of the Trailways Transportation System based in Fairfax, Virginia. Commissioner Berardi's term expires in July 2025.

Ilan Gilbert has served as a Commissioner of the New York State Bridge Authority since 2020. He resides in Westchester County. Commissioner Gilbert has decades of experience in all facets of government, where he has spent 35 years as a Court Attorney/Referee in State Supreme Court. Additionally, he has served as a Town Justice and Town Supervisor. Commissioner Gilbert is an alumnus of SUNY Binghamton and Hofstra University Law School. Commissioner Gilbert's term expires in July 2023.

Colin Jarvis has served as a Commissioner of the New York State Bridge Authority since 2020 and is a resident of Orange County. Commissioner Jarvis has had a long career in the nonprofit sector, first in his country of birth, Antigua and Barbuda, then later in his future home state of New York. Since 2012, Commissioner Jarvis has served as the Executive Director of the Newburgh Ministry, which provides basic needs to residents in the City of Newburgh. He received his bachelor's from St. John Fisher College and his master's degree from Metropolitan College of New York. Commissioner Jarvis's term expires in July 2025.

Michael O'Brien has served as a Commissioner of the New York State Bridge Authority since 2020. A resident of Dutchess County, Commissioner O'Brien has extensive project management experience in the IT industry, where he managed outsourcing relationships as well as mergers and acquisitions. Since retiring from IBM, he has split his time between local economic development and HVAC work. Commissioner O'Brien is a graduate of St. Lawrence University and has an MBA from the University at Albany. Commissioner O'Brien's term expires in July 2023.

Pursuant to the provisions of the Public Authorities Accountability Act of 2005 and the Public Authorities Reform Act of 2009, the Board formed three committees, the Finance Committee, the Audit Committee, and the Governance Committee. The Finance Committee is charged with overseeing the financial policies and financial matters of the Authority. The Audit Committee is charged with overseeing the qualifications and independence of the Authority's independent auditor, the quality and integrity of the Authority's financial statements and the Authority's internal controls and compliance system. The Governance Committee is charged with reviewing and recommending policies designed to enhance public confidence in the Authority and promote honest and ethical conduct by the Authority commissioners, executive staff and employees.

The officers and senior staff of the Authority are as follows:

Maureen Coleman is the Executive Director, effective July 16, 2021. Ms. Coleman most recently served as Senior Vice President and General Counsel to NYS Environmental Facilities Corporation ("NYS EFC"). Prior to joining NYS EFC, Ms. Coleman served as Assistant Counsel to the Governor, advising policy staff on legal matters related to the environment, energy, and agriculture. Prior to this role, she was employed for thirteen years with the Department of Environmental Conservation, where she served as legislative counsel in the Department's Office of Legislative Affairs and then as Bureau Chief of Water and Natural Resources for the Department's Office of General Counsel. Prior to joining state service, Ms. Coleman served as Vice President, Law & Regulation at J. & W. Seligman & Co. Incorporated, a privately owned investment manager in New York City. She has a B.A. from College of Saint Rose and a J.D. from Brooklyn Law School.

Tara Sullivan served as Acting Executive Director until her retirement effective July 15, 2021. She joined the Authority in 2011. Prior to her positions at the Authority, Ms. Sullivan's New York State service includes Executive Director of the New York State Quadricentennial; the Hudson Valley Regional Director for the Governor; and positions with multiple legislative commissions. Ms. Sullivan has a lifetime of public service including elective office on the Woodstock Town Board and Ulster County Legislature, the Dutchess County Ethics Board, Red Hook Central School District School Board Committees, and the Town of Red Hook Ethics Board as well as service on multiple community service boards and committees. Ms. Sullivan earned degrees from Ulster County Community College and SUNY, Delhi.

Brian Bushek is the Treasurer and Director of Finance of the Authority. Prior to joining the Authority, he served as a consultant at Resources Global Professionals, and an accounting manager at Philips Electronics. He has a Bachelor of Science in Accounting from SUNY New Paltz and an MBA from Marist College.

Jeffrey Wright is the Authority's Chief Engineer and the director of all engineering and maintenance operations.

General Counsel—New York State Thruway Authority’s General Counsel, Frank Hoare, serves as general counsel for the Authority.

Personnel

In compliance with Section 528(4) of the Public Authorities Law, all Authority employees are subject to the New York Civil Service Law.

The Authority employs, at any given time, approximately 105 full-time permanent employees and approximately 83 part-time employees. Of those serving the Authority on a full time basis, about 18 are wholly occupied by the collection of tolls and the processing of toll revenues for deposit.

Approximately 51 employees are engaged in the regular maintenance of the Bridge System, ancillary facilities and equipment. The remaining employees are engaged in the supervision of the maintenance and revenue collection operations at each bridge and the centralized management and administrative functions at the Authority’s headquarters in Highland, New York. All of the current part-time employees are assigned to toll collection operations. Except for 30 Management and Confidential members of the headquarters staff, all employees of the Authority are represented by Local 1000 of the Civil Service Employees Association (“CSEA”), an affiliate of the American Federation of State, County and Municipal Employees. The Authority’s collective bargaining agreement with the CSEA expires on March 31, 2022. All Authority full-time employees, qualified part-time employees, retirees and their eligible dependents are offered health insurance through the New York State Empire Plan or a similar plan of their choosing.

All full-time employees of the Authority are members of the New York State Retirement System. The Authority maintains itself fully current with regard to the transfer of employee contributions withheld from wages and with regard to the payment of the Retirement System’s billings of the Authority’s share of the required contribution.

Pursuant to Laws of New York ch. 56, the New York State Thruway Authority and the Authority may share certain resources including staff and equipment under a cooperative arrangement. The Authority and the New York State Thruway Authority have approved an updated agreement for E-ZPass and Tolls by Mail through the New York State Customer Service Center contracted to the New York State Thruway Authority, Triborough Bridge and Tunnel Authority, and the Port Authority of New York and New Jersey.

Certain Powers of the Authority

The Public Authorities Law

The Authority is obligated under the Act to continue to maintain and collect tolls on the Bridge System and, subject to the terms of any agreement with bondholders or the State Commissioner of the New York State Department of Transportation (the “Commissioner”), apply tolls and other revenues first for the payment of the cost of maintenance and operation of the Bridge System and then to pay, as the same shall become due, the principal of and interest on the 2021 Bonds and Additional Bonds and to fulfill the terms of any agreement made with the holders of the 2021 Bonds, the Outstanding Bonds and Additional Bonds until such Bonds and the interest thereon are fully met and discharged. Under the Act, none of the Bridges constructed prior to January 1, 1958 (the Rip Van Winkle Bridge, the Kingston-Rhinecliff Bridge, the Mid-Hudson Bridge and the Bear Mountain Bridge) shall be free from tolls until all such Bridges are free from tolls (subject to any agreement with bondholders), and the rates

of tolls charged on the Bear Mountain Bridge, the Mid-Hudson Bridge, the Kingston-Rhinecliff Bridge, the Rip Van Winkle Bridge and either span of the Newburgh-Beacon Bridge shall be uniform. Under the Bond Resolution, tolls shall remain in effect on the Bridge System until all of the Bonds have been retired. See "APPENDIX D - SUMMARY OF CERTAIN PROVISIONS OF THE RESOLUTIONS."

Under the Act, the powers of the Authority include, among others, the power to maintain, reconstruct and operate the Bridges so long as its corporate existence shall continue; and in addition, to construct and maintain facilities for the public, not inconsistent with the appropriate use of the Bridges, to contract for such construction, and to lease the right to construct and/or use such facilities on such terms and for such considerations as it determines, provided, however, that no lease shall be made for a period of more than ten years. Pursuant to the Act, the Authority has entered into certain leases for the installation of fiber optic communications equipment. The Authority has entered into a power purchase agreement providing for the purchase of power generated by certain solar panels located on the Authority's property next to the Kingston-Rhinecliff Bridge.

Subject to the approval of the Commissioner, the Authority also has the power to construct, reconstruct and improve highway connections to any of the Bridges. Upon completion of the construction, reconstruction or improvement of any such highway connections by the Authority, however, the Authority is obligated under the Act to transfer jurisdiction of such connections to the Commissioner for maintenance by the State thereafter.

Title to the real property under the jurisdiction of the Authority is vested in the State of New York, but the Authority has the right, so long as its corporate existence shall continue, to possess and use all real property and rights therein acquired by it or acquired on its behalf by the State. The Authority has the power to acquire, hold and dispose of personal property for its corporate purposes.

The Authority has no taxing power and its obligations are not a debt of the State of New York.

Neither the Authority commissioners nor any person executing the Bonds shall be liable personally on such Bonds or be subject to any personal liability or accountability by reason of the issuance thereof.

U.S. DOT Agreement

The Authority's right to operate and collect tolls for the use of the Newburgh-Beacon Bridge is governed in part by an agreement dated December 15, 1988 (hereinafter the "1988 Agreement") among the Authority, the State of New York, acting by and through the Commissioner, and the United States Department of Transportation, Federal Highway Administration, acting by and through the Administrator of the Federal Highway Administration, by Section 120(c)(2) of The Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17) (the "1987 Surface Transportation Act"), and by Section 402 of Title II of Public Law 101-45.

Section 120(c)(2) of the 1987 Surface Transportation Act permitted the voiding of a prior agreement providing for the eventual removal of tolls on the Newburgh-Beacon Bridge and authorized a new agreement that would allow tolls to remain on the bridge and the revenues to be used only on facilities subject to the jurisdiction of the Authority for construction and reconstruction costs and the costs necessary for the proper operation and debt service of such bridge, including resurfacing, reconstruction, rehabilitation and restoration. The 1988 Agreement voids this prior agreement, authorizes the Authority to continue the Newburgh-Beacon Bridge as a toll bridge, and permits the toll revenues to be used "to pay for construction and reconstruction costs of, debt service on, and the cost of proper operation and

maintenance of, bridges and facilities subject to the jurisdiction of the Authority (including resurfacing, reconstruction, rehabilitation and restoration).”

Subsequently, an amendment to the Surface Transportation Act was enacted as Section 402 of Public Law 101-45 on June 30, 1989 to clarify the authorization to use Newburgh-Beacon Bridge toll revenues for other Bridge System purposes. Such Section 402 reads as follows:

Notwithstanding any other provision of law, the New York State Bridge Authority shall have the authority to collect tolls on the Newburgh-Beacon Bridge and to utilize the revenue therefrom for the construction and reconstruction of and for the costs necessary for the proper maintenance and operation of any bridges and facilities under the jurisdiction of such Authority and for the payment of debt service on any of the Authority’s obligations issued in connection therewith.

THE BRIDGE SYSTEM

The Bridge System consists of five vehicular Bridges spanning the Hudson River, together with related facilities: the Rip Van Winkle Bridge, the Kingston-Rhinecliff Bridge, the Mid-Hudson Bridge, the Newburgh-Beacon Bridge and the Bear Mountain Bridge.

On December 21, 2010, the New York State Bridge Authority accepted ownership of the Walkway Over the Hudson Bridge (the “Walkway”), a 122 year-old railroad bridge converted into a linear state park. This is a pedestrian only structure which produces no toll revenues. See “THE BRIDGE SYSTEM—Other Facilities Including Walkway Over the Hudson.”

The counties in the Hudson River Valley immediately served by the Bridges are Greene, Ulster, and Orange on the west bank, and Columbia, Dutchess, and Putnam on the east bank. Such counties have a combined population in excess of one million according to the U.S. Census Bureau. A more complete discussion of the population served by the Authority is contained in “APPENDIX A - REPORT OF TRAFFIC CONSULTANT.”

The Hudson River Valley is a diverse and economically vigorous region. Traditionally a highly productive agricultural area for activities such as fruit and dairy farming, in recent decades the Hudson River Valley has turned to some extent to manufacturing, tourism and other commercial activities as the region’s major employment source. The completion of major highways has made the area more accessible and the northbound push of the New York City Metropolitan area’s suburbs has opened the region as far north as Poughkeepsie to commuter residential development.

The Authority has power to maintain, reconstruct, and operate highway crossings for vehicular traffic, over, under or across the waters of the Hudson River from a line 15 miles north of the Rip Van Winkle Bridge southward to the Bear Mountain Bridge. Title to the facilities of the Authority is vested in the State of New York. As of December 31, 2020, the Authority’s total investment in capital assets was \$104.7 million. Capital assets include bridges, roads, buildings, and equipment.

The following is a brief description of the Authority’s facilities.

Rip Van Winkle Bridge

The Rip Van Winkle Bridge was built by the Authority under the direction of the State Superintendent of Public Works. Construction of the Bridge began in March, 1933, and the Bridge was

opened to traffic on July 2, 1935. In 1992, a deck replacement project increased the roadway width to its present two-lane, 34 foot width, with a 6-foot sidewalk on the south side. The Bridge consists in part of continuous steel trusses and in part of a through steel cantilever. The overall length of the Bridge is 4,978 feet. Its cantilevered main channel span has an 800 foot length and a vertical clearance above the Hudson River of 142 feet. The original cost of the structure, built during the economic depression of the 1930's when construction costs were low, was \$2,409,484. The Bridge was carried on the Authority's books (for financial reporting purposes) as of December 31, 2020, at \$2,299,147. The replacement cost of the Bridge was estimated by the Consulting Engineer at \$226,650,000, as of January 1, 2021.

Kingston-Rhinecliff Bridge

The Kingston-Rhinecliff Bridge was authorized by the New York State Legislature in 1947. The Authority began construction of the structure in July, 1954, and the Bridge was opened to traffic on February 2, 1957. The Bridge has an overall length of 7,793 feet. The Bridge has a symmetrical structure and the superstructure is of steel construction, including ten continuous truss spans ranging from 300 to 800 feet each. Clearance over the Hudson River is at a minimum height of 135 feet. The original Bridge supported a two-lane roadway 36 feet wide along with two emergency sidewalks. A redecking project completed in November 2002 resulted in a 40 foot wide two-lane roadway. In 2019 the Authority installed a pedestrian walkway within the existing bridge deck width. The total cost of the structure was \$18,722,952. The Bridge was carried on the Authority's books as of December 31, 2020, at \$20,536,609. The replacement cost of this Bridge was estimated by the Consulting Engineer at \$311,850,000, as of January 1, 2021.

Mid-Hudson Bridge

The Mid-Hudson Bridge was built by the State Department of Public Works, completed in 1930, and acquired by the Authority in 1933. In 1987 and 1988, the Bridge's roadway deck was entirely demolished and replaced with a new concrete filled steel grid structure 31 feet wide. Under base traffic conditions, the Bridge is operated as a two-lane facility with a single lane in each direction. During weekday periods of morning and evening peak demand the Bridge operates as a three-lane facility with two lanes serving the direction of dominant flow.

The Bridge is of the suspension type and its total length between anchorages is 3,000 feet. The main span of 1,495 feet between the two towers has a clearance of 135 feet over the Hudson River. These towers rise 315 feet. The eastern approach is an elevated structure approximately 1,000 feet in length from the cable anchorage to the Bridge abutment. The original construction cost of the Bridge was \$5,892,781. The Bridge was carried on the Authority's books as of December 31, 2020, at \$12,957,846. The replacement cost of the Bridge was estimated by the Consulting Engineer at \$314,240,000 as of January 1, 2021, and other ancillary structures or the approach thereto were estimated at an additional \$30,420,000.

Newburgh-Beacon Bridge

The Newburgh-Beacon Bridge complex consists of two parallel spans.

The North Span was opened in 1963. It is 7,789 feet long overall with a 1,000-foot main channel cantilever truss span. Originally designed to accommodate two 15-foot traffic lanes, the North Span was the object of a major reconstruction beginning in 1980 and was reopened in 1984 with a 39-foot wide roadway accommodating three lanes of westbound traffic. The original cost to construct was \$24,648,017. The cost of reconstruction was \$49,154,620. The Authority commenced a capital project in

2021, a portion of which is being funded from the proceeds of the Series 2021 New Money Bonds, including re-decking of the North Span.

The South Span at Newburgh-Beacon, constructed for the Authority by the New York State Department of Transportation and opened in 1980, has an overall length of 7,801 feet, slightly longer than the North Span. The newer bridge has a 53-foot wide roadway accommodating three lanes of eastbound traffic and a 12-foot wide shoulder, serving as a breakdown lane. The South Span also carries a separate 8-foot wide pedestrian walkway and bicycle path.

The Bridge carries Interstate Route 84, which is a four lane limited access highway. I-84 runs between Interstate Route 81 at Scranton, Pennsylvania, and the Massachusetts Turnpike (Interstate Route 90) at a point approximately fifty miles west of Boston with interchanges connecting with major intersecting roads. In the Hudson Valley area, I-84 connects to State Routes 9D and 9, the Taconic Parkway and other local roads on the Dutchess County side of the Hudson and to State Routes 9W and 17 on the Orange County side. State Route 300 has been reconstructed to accommodate traffic connecting to the New York State Thruway (Interstate Route 87) approximately one mile from I-84, four miles west of the Bridge.

The Authority carried its investment in the Newburgh-Beacon Bridge complex on its books as of December 31, 2020 at \$44,223,796. The replacement cost of the Bridge was estimated by the Consulting Engineer at \$286,000,000 for the North Span and \$398,870,000 for the South Span, as of January 1, 2021. The estimated replacement of two ancillary approach structures was \$8,690,000 as of January 1, 2021.

Bear Mountain Bridge

The Bear Mountain Bridge was the first modern toll bridge built across the Hudson River. It was constructed and originally owned by the Bear Mountain Hudson River Bridge Company, a private stock company incorporated March 20, 1922. The Bridge was opened to traffic on November 27, 1924. The Authority purchased the Bridge in 1940 and began operation on December 26, 1940. The original roadway deck was replaced and the floor system modernized in 1976 and 1977. The main cable was rehabilitated in 2000 and 2001. The Bridge's approach highways on the east shore include a two-lane curving road extending approximately three miles to the southeast and leading to U.S. Route 9, the Albany Post Road. This approach highway was originally constructed and maintained by the Bear Mountain Hudson River Bridge Company. However, upon acquisition of the Bridge by the Authority, the approach highway was turned over to the State Department of Public Works, now the Department of Transportation, which maintains this highway and reconstructed it in 1990-1991. The Bridge supports a roadway 38 feet wide, operated as two lanes, and two narrow walkways. The roadway was resurfaced in 1996. The structure is of the suspension type, its length between abutments being 2,255 feet. The main span of 1,632 feet is supported by two 355-foot towers. The Bridge has a minimum clearance over the Hudson River of 155 feet. Acquired by the Authority for \$2,275,000, the Bridge was carried on the Authority's books as of December 31, 2020, at \$4,340,871. The replacement cost of this Bridge was estimated by the Consulting Engineer at \$174,780,000, as of January 1, 2021.

Walkway Over the Hudson

Pursuant to 2010 Laws of New York, ch. 219, the Authority acquired ownership of the Walkway on December 21, 2010. The Authority has entered into an agreement with the New York State Office of Parks, Recreation and Historic Preservation pursuant to which the New York State Office of Parks, Recreation, and Historic Preservation will be responsible for operation of the Walkway as an historic pedestrian park and the maintenance of the deck, and the Authority will be responsible for the maintenance of the Walkway structure. Tolls are not authorized for the Walkway Over the Hudson State

Park. The Authority is currently having the entire superstructure inspected by its consulting engineers. See “IMPLEMENTING THE CAPITAL PROGRAM.”

The Walkway Over the Hudson State Park – the former Poughkeepsie-Highland Railroad Bridge -- was built in the late 19th century to link New York and New England to an extensive, nationwide railway network. For decades, it was a major rail corridor for both freight and passengers. After a fire in 1974, the bridge was abandoned and sat for decades. Over a number of years a public-private partnership developed, culminating in the reconstruction and opening of the state park in October 2009. The bridge deck stands 212 feet above the river's surface and is 6,678 feet (1.28 miles) long, making it the longest elevated pedestrian bridge in the world. The Walkway was carried on the Authority's books as of December 31, 2020, at \$16,334,478, taking into account depreciation. The replacement cost of this structure was estimated by the Consulting Engineer at \$260,650,000, as of January 1, 2021.

Summary of Consulting Engineer's Report

The firm of Modjeski and Masters, Inc., the Authority's independent civil and structural engineer (the “Consulting Engineer”) has prepared its report on the physical condition of the five vehicular Bridges operated by the Authority. A copy of the report is included in this Official Statement as APPENDIX B. The Consulting Engineer has rendered its opinion that the Authority's vehicular Bridges are all geometrically and functionally serviceable, structurally safe, and maintained to high standards. The Consulting Engineer has recommended that the current Authority policies of regular inspections, and timely maintenance and rehabilitation work must be continued, so that the Bridges will remain serviceable. In the Consulting Engineer's opinion, all facilities of the Authority will be structurally capable of accommodating traffic volumes anticipated for them during the term of the 2021 Bonds.

TRAFFIC AREAS

Authority Crossings

The five Authority vehicular Bridges, from north to south, are the Rip Van Winkle Bridge, Kingston-Rhinecliff Bridge, Mid-Hudson Bridge, Newburgh-Beacon Bridge and Bear Mountain Bridge. They are an integral part of the highway system of the region. Their routes and service areas are as follows:

<u>Bridge</u>	<u>Routes</u>	<u>Service Area</u>
Rip Van Winkle	NY 23	Northern Catskill area
Kingston-Rhinecliff	NY 199, connecting to US 209	Kingston, northern Catskills
Mid-Hudson	US 44, NY 55	Poughkeepsie, Dutchess and Ulster Counties, southern Catskills
Newburgh-Beacon	I-84	Newburgh, Orange and Dutchess Counties, southern Catskills
		Interstate System between New England and points west and south
Bear Mountain	US 6, US 202	Westchester County, Orange and northern Rockland Counties, southern Catskills

The Rip Van Winkle and Kingston-Rhinecliff Bridges serve a combination of local usage in their respective areas and northern-Catskill recreational traffic.

The Mid-Hudson Bridge connects Poughkeepsie and central Dutchess County with the west bank community of Highland in Ulster County and, via US 9W and NY 299, to the New York State Thruway. The Mid-Hudson Bridge is primarily used by area residents for work-related and other locally generated trips.

The Newburgh-Beacon Bridge carries a combination of local traffic between the growing communities in Orange and Dutchess Counties, recreational traffic between the New York City metropolitan area and the Catskill region, and interstate traffic using I-84 between New England and points West and South via I-81, I-80 and other major routings.

The Bear Mountain Bridge connects Orange and Putnam Counties and carries primarily commuter and local recreational traffic.

Other Hudson River Crossings

There are eight additional vehicular toll crossings of the Hudson River and its estuaries south of Albany, including three bridges between Staten Island and New Jersey. One is north of the Rip Van Winkle Bridge, twenty miles away, and seven are south of the Bear Mountain Bridge, the closest being twenty miles away. These crossings and their service areas are:

<u>Authority</u>	<u>Crossing</u>	<u>Routes</u>	<u>Service Area</u>
New York State Thruway Authority	Castleton-on-Hudson Bridge	Connection between I-87 and I-90	Thruway (Albany-Buffalo) and Massachusetts Turnpike
	Governor Mario M. Cuomo Bridge	I-87, I-287	Westchester and Rockland Counties, Metropolitan Area, Catskills, Thruway I-87 interstate, Northern New Jersey
Port Authority of New York and New Jersey	George Washington Bridge	I-95, US 1	Metropolitan Area, Upstate via highway system I-95/I-80 interstate
	Lincoln Tunnel	I-495, NJ 3	Metropolitan Area, connection to New Jersey Turnpike
	Holland Tunnel	I-78	Metropolitan Area, connection to New Jersey Turnpike
	Bayonne Bridge	NY 440	Staten Island and Manhattan via Bayonne, New Jersey
	Goethals Bridge	I-278	Long Island, Staten Island, New Jersey
	Outerbridge Crossing	NY 440	Long Island, Staten Island, New Jersey

The Governor Mario M. Cuomo, Castleton-on-Hudson and George Washington Bridges are the only crossings which overlap service areas to some degree with the Authority Bridges. Tolls on all three are generally higher than the current Authority tolls. See “APPENDIX A—Report of Traffic Consultant.”

SUMMARY OF PAST OPERATIONS

Created in 1932, the Authority assumed its current operating configuration in the early 1980's with the construction of the second span of the Newburgh-Beacon Bridge (opened 1980) and the opening (in 1984) of the re-constructed original bridge.

Since November of 1984, the Authority has operated six full lanes for traffic across the Hudson River (three in each direction) at the Newburgh-Beacon facility and two lanes (one in each direction) at each of the other four bridges. A third lane (in the direction of the dominant traffic flow) is also operated at the Mid-Hudson Bridge three hours each weekday morning and evening.

COVID-19 Impacts on Operations.

The ongoing pandemic due to the novel coronavirus ("COVID-19") and its related variants continues to have a significant adverse and material impact on the financial condition and operating results of the Authority. The COVID-19 pandemic continues to alter the behavior of businesses and people in a manner that is having negative effects on global and local economies, including the Hudson Valley region where the Authority's Bridges are located.

The impact of the COVID-19 pandemic on the Authority's traffic and revenue has been significant. Since the emergency declaration in March 2020, the Authority has experienced reduced transactions and revenues at its toll facilities. The decrease in traffic in 2020 and early 2021 is believed to be primarily the result of COVID-19, although weather was also a factor in February 2021. Audited financial statements for 2020 indicate on a year-over-year basis: 2020 traffic declined by 19.5% from 2019 and 2020 revenue decreased by 7.4% from the levels in 2019. Preliminary and unaudited data for 2021 indicate that on a year over year basis traffic for the first 4 months of 2020 declined by 18.1% as compared to 2019 and as traffic for the first four months of 2021 increased by 4.4% as compared to 2020. For the same four month period revenue declined by 16.5% in 2020 as compared to 2019 and revenue increased by 19.8% in 2021 as compared to 2020. The Authority implemented a toll schedule revision on May 1, 2020 which has resulted in smaller impacts to revenue than would otherwise be the case as a result of the pandemic. The following table illustrates traffic volume and unaudited toll revenue for the period ending April 30 for the years 2019, 2020 and 2021:

	Traffic Volume (000s) ⁽¹⁾				Toll Revenue (\$000s) ⁽¹⁾⁽²⁾			
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>
2019	2,331	2,205	2,587	2,672	4,135	3,967	4,614	5,306
2020	2,427	2,333	1,974	1,288	4,255	4,157	3,807	2,830
2021	1,976	1,694	2,310	2,394	4,038	3,599	4,863	5,531

(1) Includes toll paying eastbound traffic. Westbound traffic is not tolled.

(2) 2021 Toll revenues reflect the May 1, 2020 toll schedule revision.

In response to the revenue impacts of COVID-19, the Authority's modified its adopted Capital Improvement Program for fiscal years 2020-2025 to limit expenditures. The Authority has funded expenditures including a portion of the \$90 million Newburgh-Beacon Bridge re-decking project from a combination of funds on hand in the Authority's Maintenance Reserve Fund and annual deposits to the Maintenance Reserve Fund ("pay-go funding"); however, proceeds of the Series 2021 New Money Bonds are required to complete the re-decking project. The Authority is continuing to monitor traffic volumes as to whether modification or deferral of additional portions of its capital program are necessary and feasible in light of the impact of decreased revenues on pay-go funding and future debt service.

Continuing impacts to the Authority from the pandemic remain and include, but are not limited to, costs and challenges to the Authority's operations, any remaining limitations on Authority operations to ensure compliance with State emergency mandates pertaining to COVID-19, and health risks to Authority employees. The impacts of the COVID-19 pandemic on the Authority's financial condition are significant and, as noted, may deteriorate further. It is unclear whether intermediate or longer-term traffic will return to pre-crisis levels. See also "APPENDIX A - REPORT OF TRAFFIC CONSULTANT" and "RISK FACTORS".

History of Traffic, Toll Revenues and Expenses, 2010-2020

Traffic

Table 1 displays traffic data on the Authority's bridges from 2010 through 2020.

TABLE 1

TOLL PAYING TRAFFIC ON AUTHORITY BRIDGES⁽¹⁾
2010-2020
(000's)

<u>Year</u>	<u>Rip Van Winkle Bridge</u>	<u>Kingston-Rhinecliff Bridge</u>	<u>Mid-Hudson Bridge</u>	<u>Newburgh-Beacon Bridge</u>	<u>Bear Mountain Bridge</u>	<u>Total</u>
2010	2,640	3,931	6,986	12,556	3,289	29,402
2011	2,604	3,878	6,872	12,364	3,303	29,021
2012	2,654	3,856	6,893	12,341	3,438	29,181
2013	2,671	3,841	6,883	12,380	3,425	29,199
2014	2,737	3,866	6,908	12,354	3,494	29,359
2015	2,829	3,951	7,121	12,519	3,718	30,138
2016	2,924	4,053	7,253	13,234	3,953	31,417
2017	2,971	4,099	7,247	13,360	3,924	31,601
2018	2,984	4,111	7,293	13,461	3,914	31,763
2019	2,979	4,142	7,382	13,466	3,939	31,908
2020	2,555	3,381	5,907	10,654	3,202	25,700

⁽¹⁾ Includes toll paying eastbound traffic. Westbound traffic is not tolled.

Source: The Authority

[Remainder of Page Intentionally Left Blank]

Table 2-a displays historical population for the Hudson River Valley from 2010-2019 and the population forecast used by the Traffic Consultant in its report. (See APPENDIX A - REPORT OF TRAFFIC CONSULTANT.)

TABLE 2-a

MID-HUDSON REGION POPULATION
SIX COUNTIES DIRECTLY SERVED BY AUTHORITY BRIDGES
(000's)

	<u>Greene</u>	<u>Ulster</u>	<u>Orange</u>	<u>Columbia</u>	<u>Dutchess</u>	<u>Putnam</u>	<u>Grand Total</u>	Compound Annual Growth Rate (CAGR)
2010	49.1	182.4	373.5	63.0	297.8	99.8	1,066	
2017	47.8	179.8	381.6	61.3	295.8	100.0	1,066	0.0%
2020 Est	48.7	182.0	389.6	62.4	300.4	103.6	1,087	0.6%
2025 Est	50.4	185.5	403.2	64.1	308.0	109.9	1,121	0.6%
2030 Est	51.9	188.9	416.6	65.9	315.4	116.4	1,155	0.6%
CAGR	-0.1%	0.0%	0.4%	-0.1%	0.1%	0.4%	0.2%	
'10-'20								
CAGR	0.6%	0.4%	0.7%	0.5%	0.5%	1.2%	0.6%	
'20-'30								

Source: U.S. Bureau of the Census 2010 to 2019. Traffic Consultant's Report 2020, 2025 and 2030 forecast.

Table 2-b displays the employment history for the Hudson River Valley from 2010 to 2017 and forecast for 2020, 2025 and 2030.

TABLE 2-b

HUDSON VALLEY EMPLOYMENT
SIX COUNTIES DIRECTLY SERVED BY AUTHORITY BRIDGES
(000's)

	<u>Greene</u>	<u>Ulster</u>	<u>Orange</u>	<u>Columbia</u>	<u>Dutchess</u>	<u>Putnam</u>	<u>Grand Total</u>	Compound Annual Growth Rate (CAGR)
2010	20.9	86.7	175.6	29.5	148.7	39.2	501	
2017	21.8	92.9	196.9	33.2	156.5	43.0	544	1.2%
2020 Est	22.6	96.3	205.6	34.7	163.0	44.8	567	0.8%
2025 Est	23.7	101.6	218.7	36.8	172.6	47.5	601	1.2%
2030 Est	24.8	106.6	231.7	39.0	181.8	50.1	634	1.1%
CAGR								
'10-'20	0.8%	1.1%	1.6%	1.6%	0.9%	1.3%	1.3%	
CAGR								
'20-'30	0.9%	1.0%	1.2%	1.2%	1.1%	1.1%	1.1%	

Source: Traffic Consultant's Report.

According to the Traffic Consultant, population was basically flat between 2010 and 2017 and the number of jobs in the six counties increased between 2010 and 2017 at a compound annual rate of 1.2%. Their forecast assumes very low to no population growth in the region and assumes growth in employment at a compound rate of 1.1%.

Existing Toll Rates

The Authority implemented a revised toll schedule with the first of four annual increases effective May 1, 2020 and the second effective May 1, 2021 to support its capital program. The same schedule of toll rates is in effect at each vehicular bridge under the Authority's jurisdiction, as required by Sections 528(8) and 538 of the Public Authorities Law.

Between 1933 and 1945, the tolls collected on the bridges under the jurisdiction of the Authority were rolled back three times. Tolls for passenger cars fell during that period from 80 cents (plus 10 cents per passenger) for each one way crossing to 25 cents each way.

On August 10, 1970, the Bridge Authority began one-way toll collection in coordination with the Port Authority of New York and New Jersey and the New York State Thruway Authority-- the operators of the only other Hudson River vehicle crossings south of Catskill. At that time, the tolls collected for eastbound crossings were doubled to reflect the cost of both trips.

The Authority increased its tolls in 1989, 2000 and 2012. In 2020 the Authority approved an increase to go into effect over a four year period, the first of which became effective May 1, 2020 and the second May 1, 2021. The current tolls effective May 1, 2021 are shown in Table 3-a below. Approved increases are shown in Table 3-b below. The Report of the Traffic Consultant attached as APPENDIX A includes a comparison of the approved toll rates and the rates previously in effect.

[Remainder of Page Intentionally Left Blank]

The vehicle classifications on the Authority's five vehicular bridges and the respective current tolls for eastbound passage are listed below:

TABLE 3-a
CURRENT TOLL RATES
Effective May 1, 2021 ⁽¹⁾

	<u>Vehicle Class</u>	<u>Standard Toll</u>	<u>EZPass Discounted Toll</u>
1L	Vehicles with two or fewer axles, nothing in tow, height of less than 7'6" (non-commercial class)	\$1.75	\$1.45
2H	Vehicles with two or fewer Axles, nothing in tow, and a height of 7'6" or more	6.00	5.30
3H	Vehicles or vehicles combinations with three Axles and a height 7'6" or more	9.00	7.95
4H	Vehicles or vehicle combinations with four or more axles and a height 7'6" or more	12.00	10.60
5H	Vehicles or vehicle combinations with five axles and a height of 7'6" or more	15.00	13.25
6H	Vehicles or vehicle combinations with six Axles and a height of 7'6" or more	18.00	15.90
7L	Each additional axle attached to vehicles in Class 1L	1.25	1.10
8H	Each additional axle on or attached to vehicles in classes 2H, 3H, 4H, 5H or 6H	3.00	2.65
9	Commuter discount (EZPass)	Not eligible	1.20 ⁽²⁾
11	Vehicles owned and operated by Authority employees or contractors, and emergency service vehicle or vehicles	No charge	

⁽¹⁾ The toll schedule shown is the second of four successive annual increases approved in 2020 with the first increase being effective May 1, 2020 and the final increase being effective May 1, 2023. See "APPENDIX A-- Report of Traffic Consultant" for a full schedule of the approved increases.

⁽²⁾ E-ZPass Commuter discount. The Authority's E-ZPass Commuter Discount Program charges for a minimum of 17 trips per month. The commuter discount program is available only for use by privately registered class 1L vehicles held in the name of or leased to an individual or two individuals not constituting a business entity.

Source: The Authority

[Remainder of Page Intentionally Left Blank]

TABLE 3-b**APPROVED FUTURE TOLL RATE INCREASES**Effective as noted ⁽¹⁾

<u>Vehicle Class</u>	<u>May 1, 2022 Standard Toll</u>	<u>May 1, 2023 Standard Toll</u>	<u>May 1, 2022 E-ZPass Discounted Toll</u>	<u>May 1, 2023 E-ZPass Discounted Toll</u>
1L Vehicles with two or fewer axles, nothing in tow, height of less than 7'6" (non-commercial class)	\$2.00	\$2.15	\$1.55	\$1.65
2H Vehicles with two or fewer Axles, nothing in tow, and a height of 7'6" or more	7.00	8.00	5.70	6.10
3H Vehicles or vehicles combinations with three Axles and a height 7'6" or more	10.50	12.00	8.55	9.15
4H Vehicles or vehicle combinations with four or more axles and a height 7'6" or more	14.00	16.00	11.40	12.20
5H Vehicles or vehicle combinations with five axles and a height of 7'6" or more	17.50	20.00	14.25	15.25
6H Vehicles or vehicle combinations with six Axles and a height of 7'6" or more	21.00	24.00	17.10	18.30
7L Each additional axle attached to vehicles in Class 1L	1.50	1.70	1.20	1.30
8H Each additional axle on or attached to vehicles in classes 2H, 3H, 4H, 5H or 6H	3.50	4.00	2.85	3.05
9 Commuter discount (EZPass)	Not eligible	Not eligible	1.30	1.40 ⁽²⁾
11 Vehicles owned and operated by Authority employees or contractors, and emergency service vehicle or vehicles	No charge	No charge	No charge	No charge

⁽¹⁾ The toll schedules shown are the third and fourth of four successive annual increases approved in 2020 with the first increase being effective May 1, 2020 and the final increase being effective May 1, 2023. See "APPENDIX A--Report of Traffic Consultant" for a full schedule of the approved increases.

⁽²⁾ E-ZPass Commuter discount. The Authority's E-ZPass Commuter Discount Program charges for a minimum of 17 trips per month. The commuter discount program is available only for use by privately registered class 1L vehicles held in the name of or leased to an individual or two individuals not constituting a business entity.

Source: The Authority

E-ZPass

In 1998 and 1999, the Authority installed an electronic toll collection system (“E-ZPass”) at all of its vehicular bridges. E-ZPass customers who open a commuter account receive an additional discount from the E-ZPass toll as explained above. In 2019, 78% of the Authority’s total passenger and truck traffic utilized the E-ZPass system and commuter transactions accounted for 10% of the Authority’s traffic. In 2020, E-ZPass use was 79% and commuter transactions 9%. See “APPENDIX A—Report of Traffic Consultant” for a discussion of the E-ZPass percentages.

All Electronic Tolling/Tolls by Mail

In 2021, the Authority will convert the Newburgh-Beacon Bridge to all electronic tolling (“AET”) with all of the Authority’s vehicular bridges scheduled to be completed by Spring of 2022. E-ZPass tolls will be collected from E-ZPass customers and vehicles without E-ZPass are billed through the New York Customer Service Center pursuant to an arrangement between the Authority and the New York State Thruway Authority for the operation by the New York Customer Service Center of the Tolls by Mail program.

Vehicles will no longer stop at toll plazas and all gates will be removed from Authority bridges. Toll plazas may be removed over time. Overhead gantries are installed with equipment used to detect E-ZPass if present or use cameras to read license plates. Non-E-ZPass customers are billed by mail. The Authority’s Traffic Consultant has estimated that the conversion to AET will result in: (i) small traffic changes and payment type shifts; and (ii) some uncollectable revenues associated with video tolling. This is in addition to the lag time and losses associated with the collection of tolls by mail. A regulation enacted by the State authorized the New York State Department of Motor Vehicles (“DMV”) to suspend the registrations of New York State drivers with three or more toll violation within a three year period, or fail to pay \$200 or more in tolls within a five-year period for commercial vehicles.

See “APPENDIX A—Report of Traffic Consultant” for a discussion of the impact of conversion to AET.

Revenues

Toll revenues generally reflect traffic volume except when toll rate schedules change or when volume changes affect one class of vehicle more than another. Since trucks pay a higher toll per vehicle than passenger cars or commuters, a gain or loss in truck traffic volume will affect toll revenues more substantially than a gain or loss of a similar number of vehicles in either of the other classes. The commencement of collection of tolls through AET is expected to have an impact on the percentage and timing of collection of revenues. See “APPENDIX A—Report of Traffic Consultant”

Table 4 displays the toll revenue from Authority bridges from 2010 through 2020.

[Remainder of Page Intentionally Left Blank]

TABLE 4

TOLL REVENUES FROM AUTHORITY BRIDGES
2010-2020
(\$000's)

<u>Year</u>	<u>Rip Van Winkle Bridge</u>	<u>Kingston-Rhinecliff Bridge</u>	<u>Mid-Hudson Bridge</u>	<u>Newburgh-Beacon Bridge</u>	<u>Bear Mountain Bridge</u>	<u>Total</u>
2010	2,970	4,058	6,945	20,302	3,394	37,669
2011	2,957	4,050	6,881	19,899	3,454	37,242
2012	4,330	5,712	10,061	28,783	4,936	53,822
2013	4,424	5,819	10,301	29,341	5,004	54,889
2014	4,560	5,889	10,384	29,338	5,066	55,237
2015	4,748	6,035	10,737	29,752	5,393	56,665
2016	4,862	6,176	10,982	31,161	5,809	58,990
2017	4,926	6,250	10,984	30,966	5,698	58,824
2018	4,933	6,279	11,115	31,017	5,676	59,020
2019	4,921	6,311	11,220	30,824	5,693	58,969
2020	4,685	5,698	9,961	29,147	5,100	54,591

Source: The Authority

The 2020 toll revenue includes the effect of the May 1, 2020 toll schedule revision for the period following its effective date.

Operating Expenses

Prior to 2020, the overall increases in operating expenses generally reflected (1) annual salary increases; (2) a continuance of increases in health insurance costs for current and retired employees; and (3) increases in contributions to the New York State retirement system. The 3.2% decrease in 2011 was the result of staffing level reductions associated with a 2010 State retirement incentive. The 8.7% increase in 2010 was largely attributed to a one-time charge associated with employees utilizing the 2010 retirement incentive.

The current contract with the union representing substantially all employees calls for a 2% percent annual base salary increase through March 31, 2022, when the current contract expires.

With the conversion of the Authority's bridges to AET, the Authority expects operating expenses to increase taking into account the costs of billing and collection through the New York Customer Service Center, offset to some extent by staffing changes at the larger bridges. The Authority expects to continue staffing at all bridges for security and traffic management purposes.

Operating expenses are assumed to increase by 14.6% in 2021 to account for the possibility of heavy winter expenses, recent variations in health care and insurance costs, and higher short-term professional fees for the period. For the remainder of the period between 2021 and 2026, projected annual increase of 4% over such period is assumed.

Table 5 displays the traffic history at the five Authority Bridges, as well as Authority toll revenues, average toll per vehicle, operating expenses and average operating expenses per tolled vehicle from 2010 through 2020.

TABLE 5

HISTORY OF TRAFFIC, TOLL REVENUES AND OPERATING EXPENSES (2010-2020)

	<u>Toll Paying Vehicle (\$000's)</u>	<u>Toll Revenue (\$000's)</u>	<u>Average Toll Per Vehicle (\$)</u>	<u>Operating Expenses (\$000's) ⁽¹⁾⁽²⁾</u>	<u>Average Operating Expenses Per Tolled Vehicle (\$)</u>
<u>Authority Operating Statistics (Totals For All Bridges)</u>					
2010	29,402	37,669	1.28	23,177	0.79
2011	29,022	37,242	1.28	22,426	0.77
2012	29,181	53,822	1.84	23,207	0.80
2013	29,199	54,889	1.88	24,739	0.85
2014	29,359	55,237	1.88	25,089	0.85
2015	30,138	56,665	1.88	24,557	0.81
2016	31,417	58,990	1.88	24,948	0.79
2017	31,601	58,824	1.86	25,900	0.82
2018	31,763	59,020	1.86	27,007	0.85
2019	31,908	58,969	1.85	27,551	0.86
2020	25,700	54,591	2.12	27,890	1.09

Percent Growth Versus Previous Year

2010	1.34%	1.58%	0.23%	8.67%	7.23%
2011	-1.29%	-1.13%	0.16%	-3.24%	-1.98%
2012	0.55%	44.52%	43.76%	3.48%	2.92%
2013	0.06%	1.98%	1.92%	6.60%	6.54%
2014	0.55%	0.63%	0.09%	1.41%	0.86%
2015	2.65%	2.59%	-0.07%	-2.12%	-4.65%
2016	4.24%	4.10%	-0.14%	1.59%	-2.54%
2017	0.59%	-0.28%	-0.86%	3.82%	3.21%
2018	0.51%	0.33%	-0.18%	4.27%	3.74%
2019	0.45%	-0.09%	-0.54%	2.01%	1.55%
2020	-19.46%	-7.42%	14.94%	1.23%	25.68%

⁽¹⁾ Excluding depreciation on equipment, and excluding net loss on sale of equipment and excluding other post-employment benefits. Maintenance Reserve expenditures are reflected in the Authority's capital budget. See "IMPLEMENTING THE CAPITAL PLAN—Table 8" herein.

⁽²⁾ In 2015 the Authority implemented GASB 68; similar to GASB 45, the Authority includes only physical disbursements to the NYS Local Retirement System for each year to compute operating expenditures under the Bond Resolution. Gains or losses on the value of the fund assets are excluded. In 2018 the Authority implemented GASB 75, an update of GASB 45, and excluded those non-cash related expenses as well.

Source: The Authority

Historical Net Revenues and Debt Service

Table 6 summarizes Net Revenues for the period 2010 to 2020. Net operating revenues, as reflected in Tables 6, 7, 9, and 10, are Toll Revenues less Operating Expenses.

TABLE 6
HISTORICAL NET REVENUES
2010-2020
(\$000's)

<u>Year</u>	<u>Toll Revenues⁽¹⁾</u>	<u>Operating Expenses⁽²⁾</u>	<u>Net Operating Revenues</u>	<u>Other Revenues⁽³⁾</u>	<u>Net Revenues</u>
2010	37,669	23,177	14,492	925 ⁽⁴⁾	15,417
2011	37,242	22,426	14,816	3,259 ⁽⁴⁾	18,075
2012	53,822	23,207	30,615	2,119	32,734
2013	54,889	24,739	30,150	1,104	31,254
2014	55,237	25,089	30,148	1,423	31,571
2015	56,665	24,557	32,108	1,148	33,256
2016	58,990	24,948	34,042	1,292	35,334
2017	58,824	25,900	32,924	1,696	34,620
2018	59,020	27,007	32,013	2,618	34,631
2019	58,969	27,551	31,418	4,142	35,560
2020	54,591	27,890	26,701	1,938	28,639

(1) All Toll Revenue data are actual for the periods through 2020.

(2) Excluding depreciation on equipment and excluding net loss on sale of equipment.

(3) Investment and other income, excluding Construction Fund and General Fund interest and net gain on sale of equipment. For 2011, Other Revenues included federal grants of \$2.5 million. For 2018, Other Revenues included state grants of \$460,000 associated with installation of pedestrian facilities on the Rip Van Winkle Bridge in connection with the Skywalk Project. For 2019, Other Revenues included state grants of \$1.5 million for pedestrian facilities at the Kingston-Rhinecliff Bridge associated with the Empire State Trail.

(4) Restated as this line incorrectly excluded interest income in the Series 2012 Official Statement.

Source: The Authority

[Remainder of Page Intentionally Left Blank]

Table 7 summarizes net operating revenues, Net Revenues, Debt Service on Outstanding Bonds, Net Revenues after Debt Service and Debt Service Coverage for the period 2010 to 2020.

TABLE 7
HISTORICAL DEBT SERVICE COVERAGE
2010-2020

<u>Year</u>	<u>Net Operating Revenues (\$000's)</u>	<u>Net Revenues (\$000's)</u>	<u>Debt Service on Outstanding Bonds (\$000's)</u>	<u>Net Revenues After Debt Service (\$000's)</u>	<u>Net Operating Revenue Coverage of Debt Service</u>	<u>Net Revenue Coverage of Debt Service</u>
2010	14,492	15,417	8,191	7,226	1.77	1.88
2011	14,816	18,075	8,191	9,884	1.81	2.21
2012	30,615	32,734	9,911	22,823	3.09	3.30
2013	30,150	31,254	11,278	19,977	2.67	2.77
2014	30,148	31,571	11,277	20,294	2.67	2.80
2015	32,108	33,256	11,281	21,976	2.85	2.95
2016	34,042	35,334	11,278	24,056	3.02	3.13
2017	32,924	34,620	11,240	23,380	2.93	3.08
2018	32,013	34,631	11,237	23,394	2.85	3.08
2019	31,418	35,560	11,237	24,323	2.80	3.16
2020	26,701	28,639	11,240	17,399	2.38	2.55

Source: The Authority. 2010-2020 data are derived from audited financial statements.

OPERATING BUDGET PROCESS

The Authority carefully monitors its performance against two separate budgets each year. The Operating Budget allocates the resources available from the Operating Fund. The Annual Element or Work Plan of the Five Year Capital Improvement Program governs the use of funds in the Construction Fund and the Maintenance Reserve Fund.

The Operating Budget includes all expenses for the regular operations of the Authority's Executive Office and three departmental cost centers: Administration, Operations and Engineering and Maintenance. Development of the Operating Budget is coordinated by the Treasurer under the supervision of the Executive Director. The budget for the next fiscal year is proposed to the Authority commissioners early in the fall of each year and is approved by the commissioners at a formal meeting prior to November 1st.

Through the year the Authority produces monthly financial statements, usually within 30 days after the end of each month. The statement of revenue and expenses is presented by cost center at each facility in order to allow the department heads and the Executive Director to monitor performance against budget projections.

CAPITAL BUDGET PROCESS

The development of the Authority's Capital Improvement Program is directly responsive to the annual program of detailed bridge inspections conducted by independent consulting civil and structural engineers discussed in "APPENDIX B — REPORT OF CONSULTING ENGINEER."

Each October the Authority revises the Capital Improvement Program for the next five years by re-prioritizing all of the projects that have been proposed for implementation and identifying the specific projects that will be undertaken during the following year. The program decisions are proposed to the commissioners of the Authority by the Executive Director and Chief Engineer. The Authority makes its formal decision on the program at a public meeting after receipt of a report on the annual inspections by a representative of the Consulting Engineer.

The data upon which the program decisions are made include, among other factors:

- the annual inspection reports of independent engineering firms;
- the Consulting Engineer's separate specific program recommendations report;
- the estimate of the Authority's Chief Engineer and the Chief Engineer's staff as to the capability and availability of in-house personnel to undertake the projects recommended;
- the potential for traffic disruption and revenue loss in the event that lanes of adjoining bridges were to be affected by construction simultaneously; and
- the availability of funds.

Subsequent to approval by the Authority, the projects to be moved forward are organized into contracts and a letting schedule is developed. The Authority then exercises its power of approval or rejection over the letting of each contract and, once awarded, each contract in progress is the subject of a monthly written report to the Executive Director and the commissioners of the Authority until completion.

IMPLEMENTING THE CAPITAL PROGRAM

Prior Program Expenditures

The Authority remains committed to an aggressive program of rehabilitation and improvement projects at each of the five vehicular crossings it operates over the Hudson River. Table 8 shows the Authority's actual expenditures for projects in its Capital Improvement Program for the years 2010 through 2020. All funding for these projects came from the Maintenance Reserve Fund (financed by operating surpluses).

[Remainder of Page Intentionally Left Blank]

TABLE 8**CAPITAL PROGRAM EXPENDITURES
(2010-2020)**

2010	\$13,143,000
2011	15,657,000
2012	20,854,000
2013	34,579,000
2014	56,309,000
2015	36,767,000
2016	7,897,000
2017	20,494,000
2018	24,329,000
2019	18,670,000
2020	23,599,000

Source: The Authority

Major projects completed during this period included:

- Sidewalk and Railing Rehabilitation at the Rip Van Winkle Bridge
- Pedestrian Walkway Installation at the Kingston-Rhinecliff Bridge
- Curb and Railing Repairs at the Mid-Hudson Bridge
- South Span Deck Replacement at the Newburgh-Beacon Bridge
- Main Cable Investigation at the Bear Mountain Bridge
- Steel Repairs at the Walkway Over the Hudson Bridge

Current and Future Capital Program

On September 17, 2020, the Authority approved an updated Capital Improvement Program for the years 2021 through 2025. The program anticipates expenditures over the five-year period 2021 through 2025 of \$212,007,000 allocated to the Bridges as follows:

Rip Van Winkle Bridge	\$12,000,000
Kingston-Rhinecliff Bridge	10,000,000
Mid-Hudson Bridge	24,850,000
Newburgh-Beacon Bridge	93,050,000
Bear Mountain Bridge	13,800,000
Walkway Over the Hudson	13,400,000
Miscellaneous System-wide	44,907,000

[Remainder of Page Intentionally Left Blank]

Major projects for this period are scheduled to include:

- Deck replacement for the North Span of the Newburgh-Beacon Bridge
- Maintenance painting at Bear Mountain Bridge
- Replacement of Main Cable Suspenders and Steel Repairs at Mid-Hudson Bridge
- Maintenance Painting at Kingston-Rhinecliff Bridge
- Maintenance Painting at Rip Van Winkle Bridge
- Steel Repairs and Painting at Walkway over the Hudson
- All Electronic Tolling Conversion system-wide

The Report of the Traffic Consultant included as APPENDIX A includes estimates of net revenues available for the Authority's capital program for the years 2021 through 2026, assuming total capital expenditures of \$258,922,000 for the period. The Authority's five year capital program for 2021 through 2025 calls for total expenditures of \$212,007,000. In addition, the Authority staff has estimated that capital needs for 2026 would be \$38,315,000 based on a longer term assessment of capital needs, including a portion of the cost of deck replacement at the Bear Mountain Bridge estimated to be completed in 2026-27. All of the amounts in the Capital Program and the amounts estimated for 2026 are necessarily preliminary and subject to change.

The proposed 2021-2025 Capital Improvement Program assumes and relies upon the issuance of Additional Bonds in 2021 in an amount sufficient to produce at least \$90,000,000 in available proceeds with the remaining amounts to be funded from estimated deposits to the Maintenance Reserve Fund. None of the projects underway or scheduled to get underway as part of the approved 2021-2025 Five Year Capital Program are expected to increase or decrease traffic capacity on any of the bridges, including the re-decking of the Newburgh-Beacon Bridge.

SUMMARY OF PROJECTED OPERATIONS

Summary of Traffic Consultant's Report

The Authority retained its Traffic Consultant, Stantec Consulting Services Inc., to review and to estimate traffic and toll revenue for the Authority in connection with the issuance of the 2021 Bonds. In turn, Stantec Consulting Services Inc. obtained data on area population and employment from Woods & Poole Economics, Inc. The Traffic Consultant's report, entitled "New York State Bridge Authority Toll Traffic and Revenue Forecast, July 6, 2021," is attached to this Official Statement as APPENDIX A. It identifies the following major highway projects in planning or design in the Hudson Valley, summarized as follows:

-I-90: Castleton-on-Hudson Bridge Rehabilitation: New York State Thruway Authority will undertake a \$30 million rehabilitation of the Castleton-on-Hudson Bridge. The Castleton-on-Hudson Bridge is near the Authority's Rip Van Winkle Bridge. It is not anticipated that this project will have a negative impact on the Authority's toll traffic and may in fact be positive during the construction period. The Traffic Consultant indicated that to be conservative, they did not consider any positive impact in their forecast.

-Rail Improvements: The New York State Department of Transportation (NYSDOT) and the Federal Railroad Administration are evaluating potential improvements to intercity passenger rail service on the Empire Corridor from New York City to Buffalo via Albany, for a distance of 463 miles. As these

potential improvements are currently undefined and unfunded, the Traffic Consultant indicated that they have not included them in their forecasts.

-Governor Mario M. Cuomo Bridge: The three-mile long Governor Mario M. Cuomo Bridge, located 13 miles north of New York City, carries the Thruway (I-87 and I-287) over the Hudson River between Nyack in Rockland County and Tarrytown in Westchester County. This bridge, the nearest southern competitor to the five vehicular bridges operated by the Authority, is the recently completed replacement of the Tappan Zee Bridge operated by the New York State Thruway Authority. The project was built by a design-build consortium under the Governor's expedited plan of construction and opened in several phases. Construction on the bridge project began in 2013. The north span of the Governor Mario M. Cuomo Bridge was opened to northbound (westbound) traffic on August 26, 2017 and to southbound (eastbound) traffic on October 6, 2017. Southbound traffic was shifted to the south span when it was completed in September 2018. Although the capacity of the new Governor Mario M. Cuomo bridge is greater than the old Tappan Zee Bridge that it replaced, the new bridge is not expected to divert any future traffic from the Authority's Bridges due to the higher toll rates

The Traffic Consultant reports that none of these projects is likely to generate significant volumes of new traffic for the Authority during the forecast period.

The traffic and revenue forecasts for the Bridges are based on certain assumptions set forth at APPENDIX A -"REPORT OF TRAFFIC CONSULTANT - Summary of Assumptions."

The Stantec Consulting Services Inc. report assumes based on their moderate forecast model that traffic over the course of the next five years for the Authority's five Hudson River vehicular crossings will stabilize at a slightly lower level than pre-pandemic and revenues will increase through 2024 and then stabilize.

The report forecasts that annual Authority toll revenues based on the toll structure approved in 2020 will be \$59,900,000 in 2021 and \$64,100,000 in 2022, \$69,600,000 in 2023, \$71,700,000 in 2024, and \$72,000,000 in 2025 and 2026. When combined with Authority estimates of Operating Expenses through the period, see Table 9 and Table 10, Net Revenues are expected to increase until 2024 based on the approved toll increase structure and then decline over time. The report considers the effects on traffic and revenue of the approved annual toll increases in 2022 and 2023 and an estimated bond issue of \$76,475,000 in 2021. Net Revenue coverage of Debt Service remains above 1.75 times through the forecast period. Actual results may differ materially from the forecast shown in APPENDIX A—"REPORT OF TRAFFIC CONSULTANT."

[Remainder of Page Intentionally Left Blank]

Projected Revenues and Operating Expenses

Table 9 sets forth the projected Revenues, Operating Expenses, net operating revenues and Net Revenues for the period 2021-2026.

TABLE 9
PROJECTED REVENUES AND OPERATING EXPENSES
(ASSUMING EXISTING TOLLS AND APPROVED TOLL SCHEDULE INCREASES)
2021-2026
(\$000's)

<u>Year</u>	<u>Toll Revenues⁽¹⁾</u>	<u>Violation Fee Revenues</u>	<u>Operating Expenses⁽²⁾</u>	<u>Net Operating Revenues</u>	<u>Other Revenues⁽³⁾</u>	<u>Net Revenues</u>
2021	59,900	200	34,876	25,224	1,450	26,674
2022	64,100	2,000	35,041	31,059	1,050	32,109
2023	69,600	1,900	36,049	35,451	1,050	36,501
2024	71,700	1,900	37,097	36,503	1,050	37,553
2025	72,000	1,800	38,325	35,475	1,050	36,525
2026	72,000	1,800	39,607	34,193	1,050	35,243

- (1) As projected by the Traffic Consultant, based on the approved toll schedule including increases scheduled to become effective May 1, 2022 and May 1, 2023. See "APPENDIX A — REPORT OF TRAFFIC CONSULTANT"
- (2) Does not include "Other Post-Employment Benefits", depreciation on equipment, and net loss on sale of equipment. See "IMPLEMENTING THE CAPITAL PROGRAM—Future Capital Program" herein.
- (3) Primarily interest income; estimated by the Authority based on current interest rates and existing reserve balances.

Adjusted Historical Revenues and Operating Expenses for Additional Bonds Test

The Traffic Consultant has prepared an adjusted historical revenue assumption for the purposes of the Additional Bonds historical test period for 12 of the 18 months preceding the issuance of the 2021 Bonds. For the period commencing May 1, 2020 and ending April 30, 2021, the actual Net Revenues (unaudited) reported by the Authority were \$29,813,000. For purposes of the historical test period described in Section 2.05(a) of the Bond Resolution, the Traffic Consultant has determined that, taking into account the adjustment in toll rates put into effect during or after such period, including the adjustment effective May 1, 2020 and the adjustment effective May 1, 2021, as if such adjustments were in effect for the entire 12 month period, would have resulted in Revenues for such 12 month period of \$62,648,000. Based on such adjustments, the Authority has determined that adjusted Net Revenue for such 12 month period would be \$33,402,000.

PROJECTED DEBT SERVICE COVERAGE

Table 10-a sets forth the Authority's projected net operating revenues, Net Revenues, Debt Service on Outstanding Bonds including the Series 2021 New Money Bonds only ("Combined Debt Service"), Net Revenues after Combined Debt Service and net operating revenue coverage and Net Revenue coverage of Combined Debt Service for the period 2021-2026. Table 10-b sets forth the Authority's projected net operating revenues, Net Revenues, Debt Service on Outstanding Bonds including both the Series 2021 New Money Bonds and the Series 2021 Refunding Bonds ("Combined

Debt Service”), New Revenues after Combined Debt Service and net operating revenue coverage and Net Revenue coverage of Combined Debt Service for the period 2021-2026.

TABLE 10-a

PROJECTED DEBT SERVICE COVERAGE
(ASSUMING EXISTING AND APPROVED TOLL INCREASES AND ASSUMING ISSUANCE OF
THE 2021A NEW MONEY BONDS AND PRIOR TO CLOSING 2021B REFUNDING)
2021-2026

<u>Year</u>	<u>Net Operating Revenues (\$000's)⁽¹⁾</u>	<u>Net Revenue (\$000's)⁽¹⁾</u>	<u>Debt Service on 2021 Bonds and 2012 Bonds (\$000's)⁽²⁾</u>	<u>Net Revenues After Combined Debt Service (\$000's)</u>	<u>Net Operating Revenue Coverage of Combined <u>Debt</u> <u>Service</u></u>	<u>Net Revenue Coverage of Combined <u>Debt Service</u></u>
2021	25,224	26,674	12,564	14,110	2.01	2.12
2022	31,059	32,109	14,386	17,723	2.16	2.23
2023	35,451	36,501	14,388	22,113	2.46	2.54
2024	36,503	37,553	14,386	23,167	2.54	2.61
2025	35,475	36,525	14,386	22,139	2.47	2.54
2026	34,193	35,243	14,387	20,856	2.38	2.45

(1) As projected by the Traffic Consultant, based on the approved toll schedule including increases scheduled to become effective May 1, 2022 and May 1, 2023. See “APPENDIX A — REPORT OF TRAFFIC CONSULTANT”

(2) Includes debt service on the Series 2021 New Money Bonds and debt service on the Outstanding Series 2012 Bonds prior to closing on the Series 2021 Refunding Bonds.

Source: The Authority

[Remainder of Page Intentionally Left Blank]

TABLE 10-b

PROJECTED DEBT SERVICE COVERAGE
(ASSUMING EXISTING AND APPROVED TOLL INCREASES AND ASSUMING ISSUANCE OF
THE 2021A NEW MONEY BONDS AND CLOSING OF THE 2021B REFUNDING BONDS)
2021-2026

<u>Year</u>	<u>Net Operating Revenues (\$000's)⁽¹⁾</u>	<u>Net Revenue (\$000's)⁽¹⁾</u>	<u>Combined Debt Service on 2021 Bonds (\$000's)⁽²⁾</u>	<u>Net Revenues After Combined Debt Service (\$000's)</u>	<u>Net Operating Revenue Coverage of Combined Debt Service</u>	<u>Net Revenue Coverage of Combined Debt Service</u>
2021	25,224	26,674	12,469	14,205	2.02	2.14
2022	31,059	32,109	7,151	24,958	4.34	4.49
2023	35,451	36,501	7,151	29,350	4.96	5.10
2024	36,503	37,553	7,151	30,402	5.10	5.25
2025	35,475	36,525	7,150	29,375	4.96	5.11
2026	34,193	35,243	7,154	28,089	4.78	4.93

(1) As projected by the Traffic Consultant, based on the approved toll schedule including increases scheduled to become effective May 1, 2022 and May 1, 2023. See "APPENDIX A — REPORT OF TRAFFIC CONSULTANT"

(2) Includes debt service on the Series 2021 New Money Bonds, the Series 2021 Refunding Bonds and the unrefunded maturity of the Series 2012 Bonds.

Source: The Authority

CERTAIN RISK FACTORS

Purchase of the 2021 Bonds involves a degree of risk. Potential investors should be thoroughly familiar with this entire Official Statement (including the appendices) in order to make a judgment as to whether the 2021 Bonds are an appropriate investment, to identify risk factors and to make an informed investment decision. The following discussion of risks that could affect payment to be made by the Authority with respect to the 2021 Bonds is not intended to be comprehensive or definitive, but rather to summarize certain matters which could affect the ability of the Authority to make such payments. See also "DESCRIPTION OF THE 2021 BONDS; **Additional Risks Related to the Forward Delivery Period**" herein.

COVID-19 Pandemic

The Authority cannot predict the extent and duration of changes in traffic volume on the Bridge System as a result of the COVID-19 pandemic and its associated economic impacts or changes in toll collections as a result of the pandemic, its economic impacts and the conversion to all electronic toll collections. It is possible that driving behavior and traffic patterns in the Hudson Valley area may be permanently altered, including once the COVID-19 pandemic and orders requiring or recommending that people stay home or refrain from certain activities have ended. The COVID-19 outbreak is ongoing, and

the ultimate geographic spread of the virus, the duration and severity of the outbreak, and the economic and other of actions that may be taken by governmental authorities to contain the outbreak or to treat its impact are uncertain. The Authority cannot predict the severity of future or continued declines in transactions and revenues that may be attributable to the spread of COVID-19 or to the governmental declarations in response thereto.

Toll Revenues Including AET Conversion

The Net Revenues securing the 2021 Bonds issued under the Bond Resolution are comprised primarily of the Authority's toll revenues, and the ability to achieve Net Revenues is primarily dependent on the number of vehicles that utilize the Authority's five vehicular Bridges. The information regarding forecasts of future traffic and revenues of the Bridge System contained in "Appendix A—Report of the Traffic Consultant" is based on assumptions made by the Traffic Consultant concerning future events. The Traffic Consultant performed studies and collected data and based its estimates and opinions on such investigations. If the traffic levels are below projections, the Authority may need to raise toll rates. The Authority's increase of toll rates is subject to approval of the State Commissioner of Transportation and any increase in toll rates may or may not have the effect of raising Net Revenues. If the traffic counts are substantially below the projections of the Traffic Consultant, the Authority may not have sufficient funds to pay all debt service on the Bonds.

The Authority uses the E-ZPass system for the collection of toll revenues. Changes in the E-ZPass system could have an impact on the amount of revenues collected by the Authority. While there are benefits to the AET system, the conversion to AET presents revenue risk to the Authority. Electronic toll collection records patron trips through the use of overhead gantries at AET locations equipped with readers to detect E-ZPass transponders, and cameras to photograph license plates of non-E-ZPass customers. Trips charged to patrons using E-ZPass transponders are recorded and paid to the Authority electronically through their related pre-paid E-ZPass accounts; non-E-ZPass customers are billed by mail. AET for both E-ZPass customers and non-E-ZPass customers is dependent upon uninterrupted gantry operation, including physical and technological components. The Authority mitigates the technology and recording risk by careful design of each AET location and physically protecting the AET equipment, hardware and software, providing for appropriate backup equipment and periodic testing. Additionally, the Authority has secured an insurance policy with respect to its AET equipment that includes coverage for certain lost toll revenues. Collection for non-E-ZPass customer trips recorded via AET can be affected by the inability to invoice due to poor license plate photos. The timely collection of tolls can also be affected by delays in invoicing patrons, delays in payment, or non-payment. The Authority mitigates collection risk through marketing of E-ZPass to patrons, the use of late fees as part of the invoicing process, imposing additional violation fees for repeat offenders and non-payors, seeking enforcement of motor vehicle regulation mandating suspension of vehicle registration for non-payors, entering into reciprocity agreements with other states for toll enforcement, and improving and updating technology where possible. See APPENDIX A—Report of Traffic Consultant for a discussion of additional considerations relating to the Authority's implementation of AET on the Authority Bridge System.

Other Factors Affecting Financial Conditions

Adverse changes to the Authority's financial condition could result in a failure to make payments, or a delay in payments, to the Trustee with respect to the Bonds. In addition to a potential decline in toll revenues, the Authority's financial condition could be adversely affected by a number of factors including: increased or unanticipated costs of operation of the Bridge System; work stoppage, slowdown or action by unionized employees; complete or partial destruction or temporary closure of any of the Bridges or other facilities due to events beyond the control of the Authority; increased pension costs; increased unfunded healthcare and other non-pension post-employment benefits; and increased fuel costs.

The Authority's capital plan is dependent in part on the issuance of bonds and in part on the receipt of revenues for "pay go" improvements. The issuance of Bonds by the Authority is subject to its statutory cap and to then-current economic conditions and other considerations.

Force Majeure Events

The Bridge System is subject to severe weather conditions, such as storms, winds, floods, earthquake, fires, explosions, spills of hazardous substances, strikes and lockouts, sabotage, wars, blockades and riots. The Authority cannot predict the potential impact of such events on the financial condition of the Authority. In such event, one or more Bridges may be closed for a period of time for reconstruction and repairs, adversely affecting toll collections and placing increased stress on the Authority's capital plan expenditures. Such conditions could also have an adverse impact on the local economy and consequently traffic using the Bridges.

Threats and Acts of Terrorism

The Authority and law enforcement have undertaken security measures in an effort to reduce the probability that the Bridge System could be attacked by terrorists; such measures are not guaranteed to prevent an attack. The Authority cannot predict the likelihood of a terrorist attack on any of the Bridges in the Bridge System or the extent of damage or vehicle traffic disruption that might result from an attack.

Cybersecurity Risks

In the course of its daily business, the Authority or its agents or consultants may collect and store sensitive data, including fare and toll collection data, financial information, security information, proprietary business information, information regarding customers, suppliers and business partners, and personally identifiable information of customers and employees. The secure processing, maintenance and transmission of this information is critical to many of the Authority's operations. Despite security and other technical measures currently in place and those which may be adopted in the future, information technology and infrastructure may be vulnerable to attacks by hackers, nation states or other breaches, including as a result of error, malfeasance or other disruptions or failures. Any such breach, disruption or other failure could compromise services, networks, facility operations and the information stored there could be accessed, disrupted, publicly disclosed, lost or stolen. Any such access, disruption, disclosure, theft or other loss of information could result in disruptions to operations and financial or other activities, or legal claims or proceedings, including pursuant to laws that protect the privacy of personal information, or regulatory penalties. No assurances can be given by the Authority that its security measures will ensure against potential cybersecurity threats and attacks and accompanying disruptions and costs.

Future Economic Conditions

Increased unemployment, rising gas and oil prices or other adverse economic or demographic changes in the State or surrounding areas could impact the amount of traffic over the Bridges and cause a corresponding decrease in Net Revenues.

Investment Securities and other Third Party Considerations

Adverse changes in the financial condition of certain third-party financial institutions may adversely affect the Authority's financial position. Certain investment and contractual arrangements may create exposure for the Authority to such institutions including risk to the investment portfolio due to defaults or changes in market valuation of the debt securities of such institutions.

Defaults and Remedies

The rights of the Owners of the Bonds and the enforceability of the Bonds may be subject to bankruptcy, insolvency, reorganization, moratorium, and other similar laws affecting creditors' rights generally, and by equitable principles, whether considered at law or in equity.

Event of Taxability

If the Authority does not comply with certain covenants set forth in the Bond Resolution or certain representations made by the Authority in the Bond Resolution or certain certificates of the Authority are false or misleading, the interest payable on the Series 2021 New Money Bonds may become subject to federal income taxation retroactive to the date of issuance of the Series 2021 New Money Bonds, regardless of the date on which noncompliance or misrepresentation is ascertained.

Redemption

The 2021 Bonds may be redeemed prior to their final maturity as provided herein. (See "DESCRIPTION OF THE 2021 BONDS—Redemption Provisions"). Bondholders bear the risk that monies received upon any such redemption cannot be reinvested in comparable securities or at comparable yields.

Legislative Actions

From time to time legislation is introduced in the State Legislature which may affect the Authority and therefore may affect certain assumptions made in this Official Statement. The Governor introduced legislation providing for consolidation of the Bridge Authority into the New York State Thruway Authority in 2020. Such legislation was not adopted; however, such legislation could be proposed again in the future.

The Authority cannot predict if legislation will be introduced or enacted into law affecting the existence or powers of the Authority, or how any such legislation may affect the Authority's ability to timely pay the 2021 Bonds.

Amendments

The Bond Resolution provides that certain actions may be taken based on receipt by the Trustee of confirmation from each of the Rating Agencies then rating the 2021 Bonds that the then current ratings assigned by such Rating Agencies will not be impaired by such actions. To the extent those actions are taken after issuance of the 2021 Bonds, the evaluation by the Rating Agencies of those actions and the impact of those actions on credit quality will affect investors in the 2021 Bonds.

TAX MATTERS

Opinion of Bond Counsel—Series 2021 New Money Bonds

In the opinion of Rodenhausen Chale & Polidoro LLP, Rhinebeck, NY, Bond Counsel to the Authority, under existing law, and assuming continuing compliance with certain tax covenants described herein, interest on the Series 2021 New Money Bonds is not included in gross income for Federal income tax purposes pursuant to Section 103 of the Internal Revenue Code of 1986, as amended (the "Code"). In addition, interest on the Series 2021 New Money Bonds is not treated as an "item of tax preference" for purposes of the federal alternative minimum taxable income applicable to individuals under the Code. In

rendering its opinion, Bond Counsel has relied on certain representations, certifications of fact, and statements of reasonable expectations made by the Authority in connection with the Series 2021 New Money Bonds, and Bond Counsel has assumed compliance by the Authority with certain ongoing covenants to comply with applicable requirements of the Code to assure the exclusion of interest on the Series 2021 New Money Bonds from gross income under Section 103 of the Code.

It is also the opinion of Bond Counsel to the Authority that interest on the Series 2021 New Money Bonds is exempt from personal income taxes imposed by the State and its political subdivisions (including The City of New York).

Bond Counsel expresses no opinion with respect to any other federal, state or local tax consequences arising with respect to the Series 2021 New Money Bonds or the ownership or disposition thereof.

The Series 2021 New Money Bonds will NOT be designated as “qualified tax exempt obligations” under Section 265(b)(3) of the Code.

Bond Counsel’s opinion is rendered as of its date, and no opinion is expressed as to matters referred to herein on any subsequent date. Certain requirements and procedures contained or referred to in the Resolutions and the Authority’s tax certificate may be changed, and certain actions may be taken, under the circumstances and subject to the terms and conditions set forth in such documents, upon the advice or with the approving opinion of bond counsel. Bond Counsel expresses no opinion as to the Series 2021 New Money Bonds or the interest thereon if any change occurs or action is taken upon the advice or approval of bond counsel other than Rodenhausen Chale & Polidoro LLP.

Opinion of Bond Counsel--Series 2021 Refunding Bonds; Delayed Delivery

The Series 2021 Refunding Bonds were sold pursuant to the terms of the Forward Delivery Agreement pursuant to which the Authority executed and delivered to the Underwriters, and the Underwriters agreed to accept and purchase from the Authority, the Series 2021 Refunding Bonds on the 2021B Date of Delivery, subject to the satisfaction of certain conditions provided in the Forward Delivery Agreement. Assuming satisfaction by the Authority and the Underwriters of their respective obligations to be satisfied in the Forward Purchase Agreement, and the issuance of the Series 2021 Refunding Bonds by the Authority, and assuming and no change in any applicable law, regulations or rulings, or in interpretations thereof, or in any other facts or circumstances (tax or otherwise) which, in Bond Counsel’s view, affect or are material to their opinion (including, without limitation, the existence of any litigation), Bond Counsel presently expects to be able to deliver on the 2021B Date of Delivery its opinion with respect to the exclusion of interest on the Series 2021 Bonds from gross income for federal income tax purposes and from personal income taxes imposed by the State of New York or any political subdivision thereof, and based upon certain representations, certifications and covenants of the Authority, substantially in the form and to the effect set forth in APPENDIX F2 as to the Series 2021 Refunding Bonds. The issuance and delivery of the Series 2021 Refunding Bonds on the 2021B Date of Delivery will be subject to, among other things, receipt of such opinion of Bond Counsel. No assurance can be given that there will be no material adverse changes in fact or in federal or State law prior to the 2021B Date of Delivery or that Bond Counsel will be able to deliver such opinion. See “DESCRIPTION OF THE 2021 BONDS; Additional Risks Related to Forward Purchase; Opinion of Bond Counsel: Tax Law Risk”.

The form of such opinion at APPENDIX F2 provides that, in the opinion of Rodenhausen Chale & Polidoro LLP, Rhinebeck, NY, Bond Counsel to the Authority, under existing law, and assuming continuing compliance with certain tax covenants described herein, interest on the Series 2021 Refunding

Bonds is not included in gross income for Federal income tax purposes pursuant to Section 103 of the Internal Revenue Code of 1986, as amended (the "Code"). In addition, interest on the Series 2021 Refunding Bonds is not treated as an "item of tax preference" for purposes of the federal alternative minimum taxable income applicable to individuals under the Code. In rendering its opinion, Bond Counsel has relied on certain representations, certifications of fact, and statements of reasonable expectations made by the Authority in connection with the Series 2021 Refunding Bonds, and Bond Counsel has assumed compliance by the Authority with certain ongoing covenants to comply with applicable requirements of the Code to assure the exclusion of interest on the Series 2021 Refunding Bonds from gross income under Section 103 of the Code.

The form of opinion at APPENDIX F-2 provides further that it is the opinion of Bond Counsel to the Authority that interest on the Series 2021 Refunding Bonds is exempt from personal income taxes imposed by the State and its political subdivisions (including The City of New York).

Bond Counsel expresses no opinion with respect to any other federal, state or local tax consequences arising with respect to the Series 2021 Refunding Bonds or the ownership or disposition thereof.

The Series 2021 Refunding Bonds will NOT be designated as "qualified tax exempt obligations" under Section 265(b)(3) of the Code.

Bond Counsel's opinion is rendered as of its date, and no opinion is expressed as to matters referred to herein on any subsequent date. Certain requirements and procedures contained or referred to in the Resolutions and the Authority's tax certificate may be changed, and certain actions may be taken, under the circumstances and subject to the terms and conditions set forth in such documents, upon the advice or with the approving opinion of bond counsel. Bond Counsel expresses no opinion as to the Series 2021 New Money Bonds or the interest thereon if any change occurs or action is taken upon the advice or approval of bond counsel other than Rodenhausen Chale & Polidoro LLP.

Certain Requirements of the Code

The Code establishes certain ongoing requirements that must be met subsequent to the issuance and delivery of the 2021 Bonds in order that interest on the 2021 Bonds be and remain not included in gross income for Federal income tax purposes pursuant to Section 103 of the Code. These requirements include but are not limited to restrictions on the investment and use of proceeds of the 2021 Bonds and the rebate of certain earnings in respect of such investments to the United States. Noncompliance may cause interest on the 2021 Bonds to become subject to Federal income taxes retroactive to the date of issue of the 2021 Bonds, irrespective of the date on which such noncompliance occurs or is ascertained. The Authority will execute and deliver a tax certificate in which the Authority will make representations, warranties and covenants relating to such requirements for non-inclusion in gross income. The Resolutions and the tax certificate will include the Authority's certificate to the effect that it will comply with the provisions and procedures set forth therein and that it will do and perform all acts and things necessary or desirable to assure that interest on the 2021 Bonds is not included in gross income pursuant to Section 103(a) of the Code.

In rendering its respective opinions, Bond Counsel has relied upon the representations, certifications of fact and statements of reasonable expectations made by the Authority in connection with the 2021 Bonds, and Bond Counsel has assumed compliance with such covenants and warranties and the accuracy, in all material respects, of such representations and certifications.

Certain Additional Federal Tax Consequences

The following is a brief discussion of certain federal income tax matters with respect to the 2021 Bonds under existing law. It does not purport to deal with all aspects of federal taxation that may be relevant to a particular owner of a 2021 Bond. Prospective investors are advised to consult their own tax advisors regarding the federal tax consequences of owning and disposing of the 2021 Bonds. Bond Counsel expresses no opinion regarding any such consequences.

Prospective purchasers of 2021 Bonds should be aware that the ownership of such obligations may result in collateral Federal income tax consequences to various categories of persons, such as corporations (including S Corporations and foreign corporations), financial institutions, property and casualty and life insurance companies, and individual recipients of Social Security or Railroad Retirement benefits, individuals otherwise eligible for the earned income credit, and taxpayers deemed to have incurred or continued indebtedness to purchase or carry obligations the interest on which is not included in gross income for Federal income tax purposes. Interest on the 2021 Bonds may also be taken into account in determining the tax liability of foreign corporations subject to the branch profits tax imposed by Section 884 of the Code.

Legislation affecting municipal bonds, such as the 2021 Bonds, is considered from time to time by the United States Congress. There can be no assurance that legislation enacted or proposed after the date of issuance of the s 2021 Bonds will not have an adverse effect on the tax-exempt status or market price of the 2021 Bonds.

Owners of 2021 Bonds subject to any such taxes or who might fall into any such category should consult their own tax advisors as to the computation of any such tax and the applicability of these consequences.

Bond Premium

In general, if an owner acquires a Bond for a purchase price (excluding accrued interest) or otherwise at a tax basis that reflects a premium over the sum of all amounts payable on the 2021 Bonds after the acquisition date (excluding certain “qualified stated interest” that is unconditionally payable at least annually at prescribed rates), that premium constitutes a “bond premium” on that Bond (a “Premium Bond”). In general, under Section 171, of the Code, an owner of a Premium Bond must amortize the premium over the remaining term of the Premium Bond, based on the owner’s yield over the remaining term of the Premium Bond, determined based on constant yield principles (in certain cases involving a Premium Bond callable prior to its stated maturity date, the amortization period and yield may be required to be determine on the basis of an earlier call date that results in the lowest yield on such Bond). An owner of a Premium Bond must amortize the bond premium by offsetting the qualified stated interest allocable to each interest accrual period under the owner’s regular method of accounting against the bond premium allocable to that period. In the case of a tax-exempt Premium Bond, if the bond premium allocable to an accrual period exceeds the qualified stated interest allocable to that accrual period, the excess is a nondeductible loss. Under certain circumstances, the owner of a Premium Bond may realize a taxable gain upon disposition of the Premium Bond even though it is sold or redeemed for an amount less than or equal to the owner’s original acquisition cost. Owners of any Premium Bond should consult their own tax advisors regarding the treatment of bond premium for Federal income tax purposes, including various special rules relating thereto, and state and local tax consequences, in connection with the acquisition, ownership, amortization of bond premium on, sale, exchange, or other disposition of Premium Bonds.

Information Reporting and Backup Withholding

Information reporting requirements apply to interest on tax-exempt obligations, including the 2021 Bonds. In general, such requirements are satisfied if the interest recipient completes, and provides the payor with, a Form W-9, "Request for Taxpayer Identification Number and Certification," or unless the recipient is one of a limited class of exempt recipients. A recipient not otherwise exempt from information reporting who fails to satisfy the information reporting requirements will be subject to "backup withholding," which means that the payor is required to deduct and withhold a tax from the interest payment, calculated in the manner set forth in the Code. For the foregoing purpose, a "payor" generally refers to the person or entity from whom a recipient receives its payments of interest or who collects such payments on behalf of the recipient.

Proposed Legislation and Other Matters

Tax legislation, administrative action taken by tax authorities, and court decisions, whether at the federal or state level, and whether currently proposed, proposed in the future, or enacted) may adversely affect the tax-exempt status of interest on the 2021 Bonds under Federal or state law and could affect the market price or marketability of the 2021 Bonds or otherwise prevent beneficial owners of the 2021 Bonds from realizing the full current benefit of the tax status of such interest. It is not possible to predict whether any legislative or administrative actions or court decisions having an adverse impact on the Federal or state income tax treatment of the Owners of the 2021 Bonds may occur.

The IRS has an ongoing program of auditing the tax-exempt status of the interest on tax-exempt obligations. If an audit of the s 2021 Bonds is commenced, under current procedures the IRS is likely to treat the Authority as the "taxpayer," and the owners of the 2021 Bonds would have no right to participate in the audit process. In responding to or defending an audit of the tax-exempt status of the interest on the 2021 Bonds, the Authority may have different or conflicting interests from the owners of the 2021 Bonds. Public awareness of any future audit of the 2021 Bonds could adversely affect the value and liquidity of the 2021 Bonds during the pendency of the audit, regardless of its ultimate outcome.

PROSPECTIVE PURCHASERS OF THE 2021 BONDS SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE FOREGOING MATTERS.

LITIGATION

There is no litigation pending or, to the knowledge of the Authority, threatened before any court, agency or other administrative proceeding (either State or Federal) restraining or enjoining the issuance, sale, execution or delivery of the 2021 Bonds, or in any way contesting or affecting the validity of the 2021 Bonds or any proceedings of the Authority taken with respect to the issuance or sale thereof, or questioning the creation, organization or existence of the Authority, the title to office of the commissioners or officers of the Authority.

The Authority is a party to various legal proceedings including negligence suits, many of which arise in the normal course of the Authority's operations and which, in the opinion of the Authority, will be disposed of within amounts that the Authority has reserved or, as applicable, with in the amounts of insurance coverage provided therefor, and without any material adverse effect on the Revenues pledged under the Bond Resolution.

RATINGS

Moody's Investors Service, Inc. ("Moody's") and S&P Global Ratings ("S&P") have assigned to the 2021 Bonds the ratings of Aa3 (stable outlook) and A+ (stable outlook), respectively. Such ratings reflect only the views of such organizations, and an explanation of the significance of such ratings may be obtained from the rating agency furnishing the same, at the following addresses: Moody's Investor's Service, Inc., 7 World Trade Center at 250 Greenwich Street, New York, NY, 10007; and S&P Global Ratings, 55 Water Street, New York, NY 10041. There is no assurance that either of the ratings will continue for any given period of time or that either rating will not be lowered or withdrawn entirely by Moody's or S&P if, in their respective judgment, circumstances so warrant. A downward change in or withdrawal of a rating may have an adverse effect on the market price of the 2021 Bonds.

LEGALITY OF 2021 BONDS FOR INVESTMENT

Under the Act, the 2021 Bonds are securities in which all insurance companies, banks and trust companies, savings banks and associations, administrators, guardians, executors, trustees and other fiduciaries may properly and legally invest funds, including capital, in their control or belonging to them, to the extent that the legality of their investments is governed by the laws of the State; and are securities which may be deposited with and shall be received by all public officers and bodies of the State and all municipalities and municipal subdivisions for any purposes for which the deposit of the State's obligations is or may be authorized.

CERTAIN LEGAL MATTERS

The issuance of the 2021 Bonds is subject to the approval of legality by Rodenhausen Chale & Polidoro LLP, Rhinebeck, New York, Bond Counsel. The forms of opinion of Bond Counsel are attached hereto at APPENDIX F. Certain legal matters will be passed upon for the Authority by the office of the New York State Thruway Authority's General Counsel, Frank Hoare, as general counsel for the Authority. Certain legal matters will be passed upon for the Underwriters by their Counsel, Katten Muchin Rosenman LLP.

VERIFICATION AGENT

Robert Thomas, CPA of Minneapolis, Minnesota, as verification agent, upon delivery of the Series 2021 Refunding Bonds, will deliver to the Authority its verification report indicating that it has verified the mathematical accuracy of (i) the computations of the adequacy of the anticipated receipts from the Defeasance Securities and cash deposits to be held in escrow for the payment of the Defeased Bonds to pay when due the redemption price of the Defeased Bonds on their redemption date.

The report of the verification agent will include the statement that the scope of their engagement was limited to verifying the mathematical accuracy of the computations contained in such schedules provided to them and that they have no obligation to update their report because of events occurring, or data or information coming to their attention, subsequent to the date of their report.

CONSULTANTS' AND ACCOUNTANT'S REPORTS

The Authority engaged Stantec Consulting Services Inc., New York, New York, to make studies of its existing facilities, traffic, revenues and projections for the Bridge System. The results of these

studies are stated in their report, dated July 6, 2021 included herein as APPENDIX A of this Official Statement in reliance upon the authority of such firm as experts.

The Authority engaged Modjeski & Masters, Inc. to conduct studies of the physical condition of the Bridge System and regarding the Authority's capital plan. The results of these studies are stated in their report, dated June 1, 2021, included herein as APPENDIX B of this Official Statement in reliance upon the authority of such firm as experts.

Both Stantec Consulting Services Inc. and Modjeski & Masters, Inc. have advised the Authority that they have reviewed the summaries contained in this Official Statement of the information and estimates contained in their respective reports and that, in their opinions, the statements made herein are correct and fairly present in summary form the information contained in each such report, and that all material assumptions or qualifications with respect to such statements are reflected therein.

The financial statements of the Authority for the fiscal years ended December 31, 2019 and 2020 appearing at APPENDIX C to the Official Statement, have been audited by EFPR Group, CPAs, PLLC, independent accountants, as set forth in their report thereon appearing at APPENDIX C to the Official Statement. No bringdown procedures have been undertaken by EFPR Group, CPAs, PLLC., since the date of their report.

FINANCIAL ADVISOR

Acacia Financial Group, Inc. is a Municipal Advisor registered with the Securities and Exchange Commission and the Municipal Securities Rulemaking Board. The Municipal Advisor serves as an independent financial advisor to the Authority in connection with the issuance of the 2021 Bonds.

UNDERWRITING

RBC Capital Markets, LLC, representing the underwriters listed on the cover page hereof (collectively the "Underwriters") have entered into a Bond Purchase Agreement with the Authority. Pursuant to the Bond Purchase Agreement the Underwriters have agreed, subject to certain conditions, to purchase the Series 2021 New Money Bonds at an aggregate purchase price of \$90,878,916.57 (which reflects an original issue premium of \$17,957,701.40 and Underwriter's discount of \$378,784.83), plus accrued interest if any, and to reoffer such Series 2021 New Money Bonds at the public offering prices or yields set forth on the cover page hereof. The obligation of the Underwriter to pay for the Series 2021 New Money Bonds is subject to certain terms and conditions set forth in the Bond Purchase Agreement, including delivery of specified opinions of counsel. The Bond Purchase Agreement provides that the Underwriter will purchase all the Series 2021 New Money Bonds if any are purchased and will make a public offering of the Series 2021 New Money Bonds at an initial public offering price which will result in the yield shown on the cover page of this Official Statement.

RBC Capital Markets, LLC, representing the underwriters listed on the cover page hereof (collectively the "Underwriters") have entered into a Forward Delivery Agreement with the Authority. Pursuant to the Forward Delivery Agreement the Underwriters have agreed, subject to certain conditions, to purchase the Series 2021 Refunding Bonds at an aggregate purchase price of \$50,103,062.42 (which reflects an original issue premium of \$9,361,721.35 and Underwriter's discount of \$193,658.93), plus accrued interest if any, and to reoffer such Series 2021 Refunding Bonds at the public offering prices or yields set forth on the cover page hereof. The obligation of the Underwriter to pay for the Series 2021 Refunding Bonds is subject to certain additional terms and conditions set forth in the Forward Delivery

Agreement, including delivery of specified opinions of counsel. See “Delayed Delivery of the Series 2021 Refunding Bonds” and “Additional Risks Related to the Delayed Delivery Period.” The Forward Delivery Agreement provides that the Underwriter will purchase all the Series 2021 Refunding Bonds if any are purchased and will make a public offering of the Series 2021 Refunding Bonds at an initial public offering price which will result in the yield shown on the cover page of this Official Statement.

The following paragraph has been provided by the underwriters named therein. The Authority takes no responsibility as to the accuracy or completeness thereof.

The Underwriters and their affiliates are full-service financial institutions engaged in various activities that may include securities trading, commercial and investment banking, municipal advisory, brokerage, and asset management. In the ordinary course of business, the Underwriters and their affiliates may actively trade debt and, if applicable, equity securities (or related derivative securities) and provide financial instruments (which may include bank loans, credit support or interest rate swaps). The Underwriters and their affiliates may engage in transactions for their own accounts involving the securities and instruments made the subject of this securities offering or other offering of the Authority. The Underwriters and their affiliates may make a market in credit default swaps with respect to municipal securities in the future. The Underwriters and their affiliates may also communicate independent investment recommendations, market color or trading ideas and publish independent research views in respect of this securities offering or other offerings of the Authority.

CONTINUING DISCLOSURE UNDER SEC RULE 15c2-12

In order to assist the purchasers of the 2021 Bonds in complying with Rule 15c2-12 promulgated by the Securities and Exchange Commission, the Authority and the Trustee will enter into a written agreement (the “Agreement”) for the benefit of the owners of the 2021 Bonds to provide continuing disclosure. The Authority will undertake to provide, or cause to be provided, to the Electronic Municipal Market Access (“EMMA”) System implemented by the Municipal Securities Rulemaking Board established pursuant to Section 15B(b)(1) of the Securities Exchange Act of 1934, or any successor thereto or to the functions of such Board contemplated by the Undertaking:

(1) Annual Financial Information:

(i) certain annual financial information, in a form generally consistent with the information contained or cross-referenced in this Official Statement under the headings “Table 1, Toll Paying Traffic on Authority Bridges”, “Table 3a, Current Toll Rates”, “Table 4, Toll Revenues from Authority Bridges 2010-2020”, “Table 5, History of Traffic, Toll Revenues and Operating Expenses 2010-2020”, “Table 6, Historical Net Revenues 2010-2020”, “Table 7, Historical Debt Service Coverage 2010-2020” all under the caption “SUMMARY OF PAST OPERATIONS”, “Table 8, Capital Program Expenditures (2010-2020)” and “Current and Future Capital Program” under the caption “IMPLEMENTING THE CAPITAL PROGRAM”, and “Litigation”, together with a summary of the most recent annual inspection by the Authority, its Consulting Engineer, or other professional engineer or engineers retained for the purpose of such annual inspection. Such annual financial information is to be provided on or prior to the 180th day following the end of each fiscal year, commencing with the fiscal year ending December 31, 2021.

(ii) the audited financial statement, if any, of the Authority for each fiscal year commencing with the fiscal year ending December 31, 2021 unless such audited financial statement, if any, shall not then be available in which case the unaudited financial statement shall be provided and an audited financial statement shall be provided within 30 days after it becomes available and in no event later than 360 days after the end of each fiscal year;

(2) Events: timely notice, not in excess of ten (10) business days after the occurrence of such event, of the occurrence of any of the following events:

- (i) principal and interest payment delinquencies;
- (ii) non-payment related defaults, if material;
- (iii) unscheduled draws on debt service reserves reflecting financial difficulties;
- (iv) unscheduled draws on credit enhancements reflecting financial difficulties;
- (v) substitution of credit or liquidity providers, or their failure to perform;
- (vi) adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices of determinations with respect to the tax status of the Bonds, or other material events affecting the tax status of the Bonds;
- (vii) modifications to rights of Bondholders, if material;
- (viii) Bond calls, if material, and tender offers;
- (ix) defeasances;
- (x) release, substitution, or sale of property securing repayment of the Bonds, if material;
- (xi) rating changes;
- (xii) bankruptcy, insolvency, receivership or similar event of the Issuer; [note to clause (xii): For the purposes of the event identified in clause (xii) above, the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for the Issuer in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or government authority has assumed jurisdiction over substantially all of the assets or business of the Issuer, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the Issuer];
- (xiii) the consummation of a merger, consolidation, or acquisition involving the Issuer or the sale of all or substantially all of the assets of the Issuer, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material; and
- (xiv) appointment of a successor or additional trustee or the change of name of a trustee, if material.
- (xv) incurrence of a "financial obligation" (as defined in the Rule) of the Authority, if material, or agreement to covenants, events of default, remedies, priority rights or other similar terms of a financial obligation of the Authority, any of which affect bondholders, if material; and
- (xvi) default, event of acceleration, termination event, modification of terms or other similar events under a financial obligation of the Authority, if any such event reflects financial difficulties.

“Financial obligation” means a (a) debt obligation; (b) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation; or (c) guarantee of a debt obligation or any such derivative instrument; provided that “financial obligation” shall not include municipal securities as to which a final official statement (as defined in the Rule) has been provided to the MSRB consistent with the Rule.

Event (iii) is included pursuant to a letter for the SEC staff to the National Association of Bond Lawyers dated September 19, 1995. However, event (iii) is not applicable, since no “debt service reserves” will be established for the Bonds.

With respect to event (iv) the Authority does not undertake to provide any notice with respect to credit enhancement added after the primary offering of the Bonds.

With respect to event (xii) above, the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for the Authority in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or government authority has assumed jurisdiction over substantially all of the assets or business of the Authority, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the Authority.

The Authority may provide notice of the occurrence of certain other events, in addition to those listed above, if it determines that any such other event is material with respect to the 2021 Bonds; but the Authority does not undertake to commit to provide any such notice of the occurrence of any event except those events listed above.

(3) Failure to Provide Information: in a timely manner, not in excess of ten (10) business days after the occurrence of such event, notice of a failure to provide the annual financial information by the date specified.

The Authority’s Undertaking shall remain in full force and effect until such time as the principal of, redemption premiums, if any, and interest on the Bonds shall have been paid in full or in the event that those portions of the Rule which require the Undertaking, or such provision, as the case may be, do not or no longer apply to the 2021 Bonds. The sole and exclusive remedy for breach or default under the Undertaking is an action to compel specific performance of the undertakings of the Authority, and no person or entity, including an Owner of the 2021 Bonds, shall be entitled to recover monetary damages thereunder under any circumstances. Any failure by the Authority to comply with the Undertaking will not constitute a default with respect to the 2021 Bonds.

The foregoing is intended to set forth a general description of the type of financial information and operating data that will be provided; the descriptions are not intended to state more than general categories of financial information and operating data; and where an undertaking calls for information that no longer can be generated or is no longer relevant because the operations to which it relates have been materially changed or discontinued, a statement to that effect will be provided.

The Authority reserves the right to amend or modify the Undertaking under certain circumstances set forth therein; provided that any such amendment or modification will be done in a manner consistent with Rule 15c2-12, as amended.

The Authority is in compliance with its obligations under prior undertakings made pursuant to the Rule within the last five years.

[Remainder of Page Intentionally Left Blank]

MISCELLANEOUS

To the extent that any statements made in this Official Statement, involve matters of opinion, forecasts or estimates, whether or not expressly stated to be such, they are made as such and not as representations of fact or certainty. Information herein has been derived by the Authority from official and other sources and is believed by the Authority to be reliable, but information other than that obtained from official records of the Authority has not been independently confirmed or verified by the Authority and its accuracy is not guaranteed.

The agreements of the Authority with owners of the 2021 Bonds are fully set forth in the Resolutions. Neither this Official Statement nor any advertisement or other statement which, may have been made orally or in writing is to be construed as or as part of a contract with the original purchasers or holders of the 2021 Bonds.

Any statements in this Official Statement involving matters of opinion, forecasts or estimates, whether or not expressly stated, are intended merely as opinion, forecasts or estimates and not as statements of fact.

The execution and delivery of this Official Statement by the undersigned officers of the Authority have been duly authorized by the Authority.

NEW YORK STATE BRIDGE AUTHORITY

By: /s/ Joan McDonald
Chair

By: /s/ Brian Bushek
Treasurer

[THIS PAGE INTENTIONALLY LEFT BLANK]

Appendix A - Report of Traffic Consultant

[THIS PAGE INTENTIONALLY LEFT BLANK]

New York State Bridge Authority Toll Traffic & Revenue Forecasts



Prepared for:
New York State Bridge Authority

Prepared by:
Stantec Consulting Services, Inc.

July 6, 2021

[THIS PAGE INTENTIONALLY LEFT BLANK]

NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Table of Contents

Executive Summary	i
Abbreviations	vii
1.0 Background and Physical Description	1.1
1.1 Hudson Valley Transportation Infrastructure	1.1
1.1.1 New York State Bridge Authority Facilities	1.3
1.2 Other Transportation and Related Developments	1.10
2.0 Historical Bridge Traffic and Revenue.....	2.12
2.1 Toll Rates	2.12
2.1.1 Past Changes in Toll Collection.....	2.14
2.2 Historical Traffic and Revenue 2010-2020	2.15
2.3 2019 and 2020 Traffic and Revenue by Bridge and Vehicle Group.....	2.24
2.4 Transponder Usage Frequency Data	2.29
2.5 Hourly Traffic Data (Pre-Pandemic).....	2.31
2.6 License Plate Data (Pre-Pandemic)	2.33
3.0 Economic Backdrop and Outlook for the Future.....	3.34
3.1 Prior to the onset of the COVID-19 Pandemic.....	3.34
3.1.1 National Trends Affecting Traffic Growth.....	3.34
3.1.2 Mid-Hudson Valley Growth.....	3.37
3.2 Context of the On-going COVID-19 Pandemic	3.39
3.2.1 Phased Reopening.....	3.40
3.2.2 COVID Impact on Travel	3.40
3.2.3 Rating Agency Review of COVID	3.43
3.2.4 Return to Workplace Survey Results.....	3.44
3.2.5 COVID Impact on Home Relocation	3.45
3.2.6 COVID Impact on Trucking.....	3.45
4.0 Traffic and Revenue Estimates	4.47
4.1 Toll Changes and Estimated Effects on Traffic and Revenue	4.47
4.2 Modeling Methodology	4.48
4.2.1 Pro-Forma Forecast	4.48
4.2.2 Traffic and Revenue Pandemic Recovery Assumptions.....	4.53
4.3 Traffic and Revenue Estimates.....	4.59
5.0 Operating and Capital Costs	5.64
5.1 Operating Expenses	5.64
5.1.1 Operating Cost Assumptions for All-Electronic Tolling	5.67
5.2 Capital Needs Program and Cost.....	5.72
6.0 Net Revenue for Bond Sale.....	6.74

NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

6.1	Bond Resolution Requirements	6.78
6.2	Summary of Assumptions.....	6.82
7.0	Limitations and Disclaimers	7.1

NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

List of Tables

Table 1: Toll Facilities in the Region that have converted to All-Electronic Tolling	1.11
Table 2: New York State Bridge Authority Adopted Toll Schedules	2.13
Table 3: May 2021 Tolls on Hudson River Bridges (One-Way / Round Trip)	2.14
Table 4: Toll Increase Frequencies, 1982 - Present	2.15
Table 5: Monthly Share of Toll Paying Traffic	2.22
Table 6: Toll Paying Traffic by Vehicle Type (in Thousands), 2019 - 2020	2.23
Table 7: 2019 and 2020 Traffic by Bridge and Vehicle Group	2.24
Table 8: Traffic and Revenue by Bridge	2.25
Table 9: Sample Trips to People	2.30
Table 10: FHWA Long-Term Growth Forecasts of National Vehicle Miles Traveled (VMT)	3.36
Table 11: National Economic Outlook 2021-2032	3.37
Table 12: Hudson Valley Population	3.38
Table 13: Hudson Valley Employment	3.39
Table 14: Phased Reopening Schedule	3.40
Table 15: Average Length of Haul Before and During Pandemic	3.45
Table 16: AET Implementation Dates	4.48
Table 17: Toll Elasticity Assumptions	4.52
Table 18: Long-Term Impact to Traffic and Revenue Compared to Pro-Forma	4.55
Table 19: Traffic and Revenue Forecast, Slower Recovery Scenario	4.61
Table 20: Traffic and Revenue Forecast, Moderate Recovery Scenario	4.62
Table 21: Traffic and Revenue Forecast, Robust Recovery Scenario	4.63
Table 22: Historical Operating Expenses (In Thousands)	5.65
Table 23: Projected Operating Expenses (In Thousands)	5.66
Table 24: Projected Other Revenues (In Thousands)	5.67
Table 25: Key Assumptions for E-ZPass Operating Costs	5.68
Table 26: Key Assumptions for Tolls by Mail Operating Costs	5.69
Table 27: Comparison of Expenses with AET Conversion (In Thousands)	5.70
Table 28: Projected Operating Expenses with AET Conversion (In Thousands)	5.71
Table 29: NYSBA Bridge Opening Dates	5.72
Table 30: NYSBA Capital Improvement Program (In Thousands)	5.73
Table 31: Estimated Revenue, Moderate Recovery Forecast	6.75
Table 32: Estimated Revenues and Expenses, Moderate Recovery Forecast	6.76
Table 33: Estimated Revenues Available for Capital Program, Moderate Recovery Forecast	6.77
Table 34: Comparison of Revenue Available and Funds Required for Capital Program, Moderate Recovery Forecast	6.78
Table 35: Estimated Pro Forma Revenues, 2019 – 2035	6.80
Table 36: Debt Service Coverage Ratios, Moderate Recovery Forecast	6.81

NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

List of Figures

Figure 1: Southern New York State.....	1.2
Figure 2: Bear Mountain Bridge	1.5
Figure 3: Newburgh-Beacon Bridge	1.6
Figure 4: Mid-Hudson Bridge	1.7
Figure 5: Kingston-Rhinecliff Bridge	1.8
Figure 6: Rip Van Winkle Bridge	1.9
Figure 7: Historical Traffic and Revenue on Authority Bridges.....	2.16
Figure 8: Total Toll Paying Traffic (in Thousands) on NYSBA Bridges, 2017-2020	2.18
Figure 9: Total Revenue (in Thousands) from NYSBA Bridges, 2017-2020	2.18
Figure 10: Historical Passenger Car Traffic on NYSBA Bridges	2.19
Figure 11: Historical Truck Traffic on NYSBA Bridges.....	2.19
Figure 12: Annual Passenger Car Traffic Change by Bridge, 2010-2020	2.20
Figure 13: Annual Truck Traffic Change by Bridge, 2010-2020	2.21
Figure 14 : Historical E-ZPass Share on Authority Bridges, 2013-2020.....	2.26
Figure 15: E-ZPass Market Share of Total Bridge Traffic – 2019	2.27
Figure 16: E-ZPass Market Share of Passenger Car Traffic – 2019	2.28
Figure 17: E-ZPass Market Share of Truck Traffic – 2019.....	2.28
Figure 18: Frequency of NY Customer Service Center E-ZPass on NYSBA Facilities.....	2.30
Figure 19: Hourly Distribution of Passenger Cars on Average Weekday, Sep 2018 Data	2.32
Figure 20: Hourly Distribution of Trucks on Average Weekday, Sep 2018 Data	2.32
Figure 21: Estimated License Plate Distribution for Cars and Trucks	2.33
Figure 22: National Historic Vehicle Miles Traveled (VMT), 12-month Moving Average	3.35
Figure 23: NY State Recent Vehicle Miles Traveled (VMT), 12-month Moving Average.....	3.36
Figure 24: “Usual” Means of Commuting.....	3.42
Figure 25: Traffic Growth	4.50
Figure 26: E-ZPass Market Share Assumptions - Cars	4.51
Figure 27: E-ZPass Market Share Assumptions - Trucks	4.51
Figure 28: Near-Term Recovery Path for Transactions under Each Scenario	4.54
Figure 29: Near-Term Recovery Path for Revenue under Each Scenario	4.55
Figure 30: Recovery of Car Traffic Compared to Proforma Forecast.....	4.57
Figure 31: Recovery of Truck Traffic Compared to Proforma Forecast.....	4.57
Figure 32: Recovery of Car Revenue Compared to Proforma Forecast	4.58
Figure 33: Recovery of Truck Revenue Compared to Proforma Forecast	4.58
Figure 34: Transaction Forecast by Scenario.....	4.59
Figure 35: Revenue Forecast by Scenario	4.60

NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Executive Summary

The purpose of this report is to present annual forecasts of the New York State Bridge Authority (the "Authority") traffic and toll revenues through 2035, along with the Authority's estimated operating costs, adjustments related to the conversion to All Electronic Tolling (AET) and resulting Net Revenues to support the Authority's intended sale of 2021 Revenue Bonds. This report builds on a 2019 Toll Traffic & Revenue Forecast Report (referred to hereafter as "2019 Traffic Study") which led to the adoption of a toll schedule with annual toll increases on May 1st of four consecutive years starting in 2020 and through 2023. Both the 2019 Traffic Study and this report have been prepared in accordance with Stantec Consulting Services Inc.'s (Stantec) agreement with the Authority and supported by three sub-consultants: Spock Solutions, Fagan Consulting, and Alta Vista Solutions.

Both reports review Hudson Valley transportation infrastructure, including the Authority's five bridges; national trends affecting traffic growth; population and employment growth in the Mid-Hudson Valley; historical and projected traffic, revenue and expenses for the bridges; and the Authority's Capital Improvement Program. This set of projections considers background growth in traffic as well as impacts of toll increases and AET conversion on bridge traffic under pre-pandemic, "normal" conditions. It also presents a discussion the recent COVID-19 Pandemic and its impacts on travel and potential pandemic recovery scenarios for traffic and revenue. Finally, it projects annual net revenue and debt service coverage ratios through 2035 for several recovery scenarios.

The five Authority bridges are among thirteen vehicular crossings of the Hudson River and its estuaries between Albany and the Atlantic Ocean, including three bridges between Staten Island and New Jersey. Two of these crossings are operated by the New York State Thruway Authority (the "Thruway Authority"), and six are operated by the Port Authority of New York and New Jersey (the "Port Authority"). Between the Thruway bridge at Castleton-on-Hudson and the Outerbridge Crossing of the Arthur Kill between Staten Island and New Jersey, the thirteen crossings all charge tolls. There is no toll-free vehicular crossing of the Hudson River south of Albany.

The law creating the Authority is found in the Bridge Authority Act, currently Sections 525 to 542 of the New York Public Authorities Law and defines the Authority's mission as ***"to maintain and operate the safe vehicle crossings over the Hudson River entrusted to its jurisdiction for the economic and social benefit of the people of the State of New York."*** To fulfill this mission, the Authority's Capital Improvement Program has and will continue to maintain the five bridges it operates in good structural and functional condition. From north to south, the five bridges are:



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

- **Rip Van Winkle Bridge** connects Columbia and Greene counties and the communities of Hudson and Catskill;
- **Kingston-Rhinecliff Bridge** connects Dutchess and Ulster counties and the communities of Kingston and Rhinebeck/Red Hook;
- **Mid-Hudson Bridge** connects Poughkeepsie in Dutchess County and Highland in Ulster County. It carries the second highest volume of traffic and the greatest number of commuters;
- **Newburgh-Beacon Bridge** is designated as Route I-84 and has two spans connecting Newburgh in Orange County and Beacon in Dutchess County. The bridge carries the highest volume of traffic of the five vehicular bridges and it serves both long-distance and local trips;
- **Bear Mountain Bridge** connects Orange and Putnam counties (and touches the far northern corners of Westchester and Rockland counties) connecting the communities of Highland Falls/Fort Montgomery and Cold Spring/Garrison.

In 2010, the Governor and state legislature charged the Authority with the responsibility of maintaining the structure of the Walkway Over the Hudson Bridge which carries a 1.3-mile pedestrian walkway via a former railroad bridge between the City of Poughkeepsie in Dutchess County and Highland in Ulster County. The Authority acquired ownership of the bridge for maintenance purposes on December 21, 2010 and entered into a 99-year lease with the NYS Office of Parks Recreation and Historical Preservation to operate and maintain the deck.

In 2020, the Authority implemented a toll increase spread over four years, with increases on May 1st of each year. More recently, the Authority has developed a plan to replace the collection of cash tolls with Tolls-by-Mail, beginning in June 2021 at the Newburgh-Beacon bridge, and phasing in at the other bridges by March 2022. The toll rates will not change with this conversion to AET; however, fines may apply for late payment. The adopted toll schedule through 2023 is presented in Table ES-1.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Table ES-1: New York State Bridge Authority Adopted Toll Schedules

Vehicle Class		Payment Method	Toll Rate				
			Pre-Increase	May 2020	May 2021	May 2022	May 2023
Passenger Cars - Commuter							
Class 11	Commuter	E-Z Pass	\$ 1.00	\$ 1.10	\$ 1.20	\$ 1.30	\$ 1.40
Passenger Cars - Non-Commuter							
Class 1	Passenger	Video	\$ 1.50	\$ 1.75	\$ 1.75	\$ 2.00	\$ 2.15
Class 1	Passenger	E-Z Pass	\$ 1.25	\$ 1.35	\$ 1.45	\$ 1.55	\$ 1.65
Class 7	Psgr Extra Axle	Video	\$ 1.00	\$ 1.25	\$ 1.25	\$ 1.50	\$ 1.70
Class 7	Psgr Extra Axle	E-Z Pass	\$ 0.90	\$ 1.00	\$ 1.10	\$ 1.20	\$ 1.30
Commercial Vehicles							
Class 2	Truck 2 Axle	Video	\$ 5.00	\$ 6.00	\$ 6.00	\$ 7.00	\$ 8.00
Class 2	Truck 2 Axle	E-Z Pass	\$ 4.50	\$ 4.90	\$ 5.30	\$ 5.70	\$ 6.10
Classes 3 - 6	Trucks per Axle	Video	\$ 2.50	\$ 3.00	\$ 3.00	\$ 3.50	\$ 4.00
Classes 3 - 6	Trucks per Axle	E-Z Pass	\$ 2.25	\$ 2.45	\$ 2.65	\$ 2.85	\$ 3.05
Class 8	Trucks Extra Axle	Video	\$ 2.50	\$ 3.00	\$ 3.00	\$ 3.50	\$ 4.00
Class 8	Trucks Extra Axle	E-Z Pass	\$ 2.25	\$ 2.45	\$ 2.65	\$ 2.85	\$ 3.05

Note: NYSBA Commuter Discount Plan: Customer must be a NY Customer Service Center E-ZPass account holder in good standing and be enrolled in the NYS Bridge Authority Discount Plan to receive discounts. A minimum of \$20.40 (17 trips) will be charged each month at \$1.20 for each Class 1 tag assigned the NYSBA Discount Plan. Each additional trip will be charged at the \$1.20 discount rate.

As part of the 2019 Traffic Study, Stantec developed a traffic and revenue model that considered annual growth by vehicle class and forecasted trends in payment type, as well as customer reaction due to changes in toll rate and the conversion from the collection of cash tolls to AET. Stantec updated this forecasting model to consider monthly detail through 2022 to reflect two important factors:

- the impacts of the ongoing COVID-19 pandemic (as discussed in Section 3.2)
- a modified timeline for AET conversion by bridge since the 2019 Traffic Study assumed a timeframe for all bridges of January 2021

Stantec developed an updated Pro-Forma 2019 Forecast to show what traffic might have looked like had the pandemic not occurred and used this as the basis for estimating three potential scenarios for “recovery” of traffic and revenue as well as where these potential recovery tracks might stabilize in the long term:

- **Robust Recovery:** Under the robust recovery scenario, cars on all bridges are expected to stabilize at volumes 0.5 percent higher than the Pro-Forma estimates by 2024. Trucks are assumed to continue with higher volumes and stabilize at 3 percent higher than the Pro-Forma forecasts by 2024.

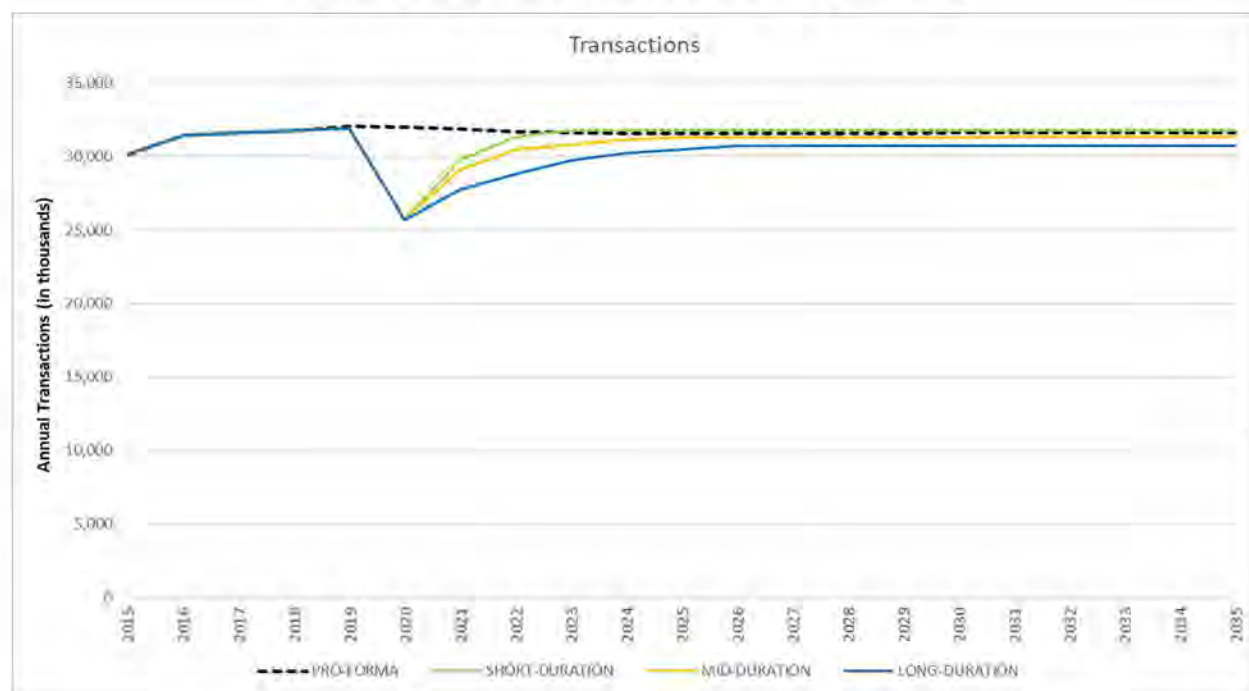


NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

- **Moderate Recovery:** The moderate recovery scenario assumes that, car volumes will stabilize in 2025 at 1 percent lower than the Pro-Forma estimates while trucks will stabilize at 1 percent higher than Pro-Forma levels, also by 2025.
- **Slower Recovery:** The slower recovery scenario assumes that traffic will take until 2025 to reach a “new normal”, with cars stabilizing at 3 percent lower than the Pro-Forma forecasts and trucks returning to the same levels as the Pro-Forma estimates.

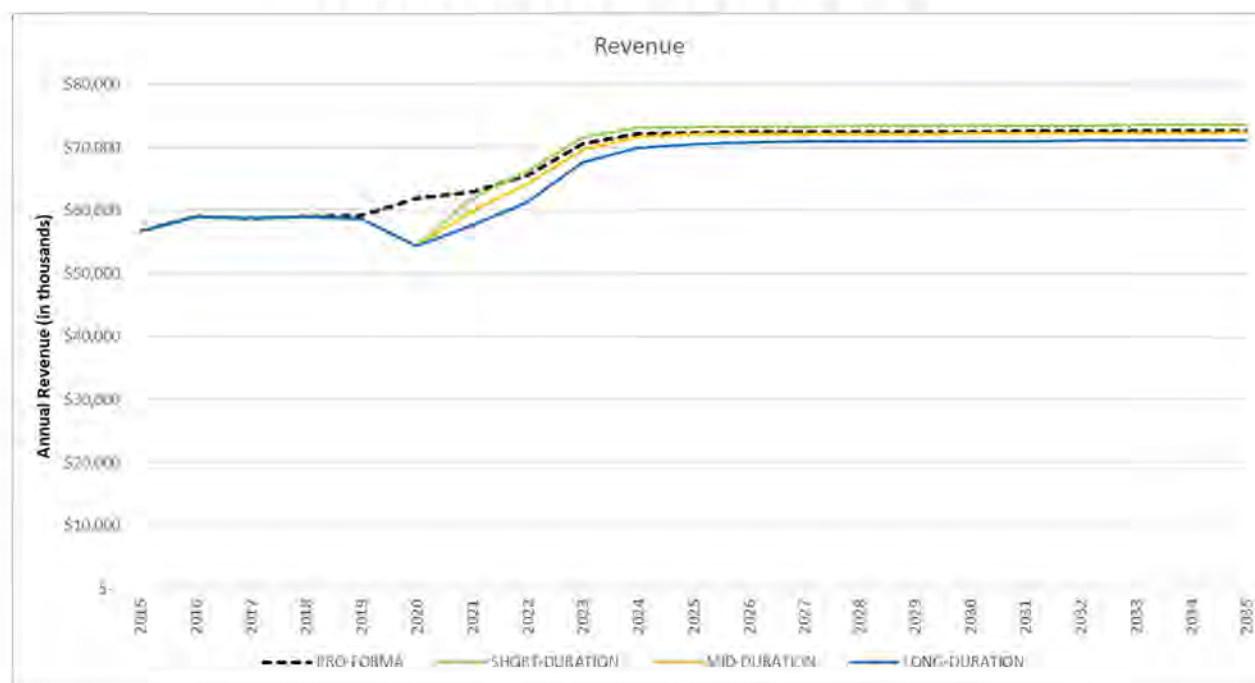
Figures ES-1 and ES-2 present the annual, systemwide traffic forecast for each recovery. The values shown for 2015 to 2020 are actual, observed values. The Pro-Forma line represents the trend of estimates under pre-pandemic conditions, but including toll increases and AET implementation. For the majority of the forecast period, traffic under each scenario is estimated to remain flat once recovery period and toll increases are complete. The robust recovery transactions are estimated to be nearly equal to the Pro-Forma forecasts while the moderate and slower recovery forecasts are estimated to stabilize at a slightly lower level.

Figure ES-1: Transaction Forecast by Scenario



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Figure ES-2: Revenue Forecast by Scenario



From Stantec's experience on other tolled facilities across the country the actual recovery along the facilities has been trending most closely with our moderate recovery assumptions. Therefore, the detailed revenue streams to support the bond sale were prepared based on the moderate recovery forecast.

As toll collection shifts from cash collection in the lane to video toll collection and issuing invoices, it is expected that there will be some delay in payment associated with video tolls. It was assumed that there would be a lag of three months from the time of travel to the time that video toll payment would be received, to allow for invoicing and payment. Additionally, it is more difficult to collect tolls from video customers. Based on our experience on other toll facilities, it was assumed that 45 percent of video toll revenues would be uncollectable.

It is typical that video invoices sent out through the New York Customer Service Center (NYCSC) charge violation fees beginning with the issuance of a second invoice (\$5 per invoice) and escalate to \$50 per invoice on the third invoice. Based on our experience on other AET facilities, it was estimated that approximately 20 percent of the video customers who pay their invoices would pay the \$5 invoice fee, and that only around 4.5 percent of settled video invoices would pay the \$50 fee.

Applying operating expenses (including updated estimates for AET operating costs), Stantec calculated net revenues using the moderate recovery forecast. Projected net revenues and resulting debt service coverage ratios through 2035 are shown in Table ES-2.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

TABLE ES-2: Debt Service Coverage Ratios, Moderate Recovery Forecast

Year	Revenue (000s) (1)	Operating Expenses (000s) (2)	Net Revenue (000s)	Debt Service (000s) (3)	Debt Service Coverage Ratio
2019 (4)	\$ 63,111	\$ 27,551	\$ 35,560	\$ 11,237	3.16
2020 (4)	\$ 56,529	\$ 27,890	\$ 28,639	\$ 11,240	2.55
2021	\$ 61,550	\$ 34,876	\$ 26,674	\$ 11,837	2.25
2022	\$ 67,150	\$ 35,041	\$ 32,109	\$ 7,466	4.30
2023	\$ 72,550	\$ 36,049	\$ 36,501	\$ 7,464	4.89
2024	\$ 74,650	\$ 37,097	\$ 37,553	\$ 7,468	5.03
2025	\$ 74,850	\$ 38,325	\$ 36,525	\$ 7,466	4.89
2026	\$ 74,850	\$ 39,607	\$ 35,243	\$ 7,465	4.72
2027	\$ 74,850	\$ 40,944	\$ 33,906	\$ 9,183	3.69
2028	\$ 74,850	\$ 42,339	\$ 32,511	\$ 9,185	3.54
2029	\$ 74,750	\$ 43,795	\$ 30,955	\$ 9,186	3.37
2030	\$ 74,850	\$ 45,313	\$ 29,537	\$ 9,182	3.22
2031	\$ 74,750	\$ 46,897	\$ 27,853	\$ 9,187	3.03
2032	\$ 74,650	\$ 48,549	\$ 26,101	\$ 9,185	2.84
2033	\$ 74,650	\$ 50,271	\$ 24,379	\$ 9,185	2.65
2034	\$ 74,650	\$ 52,067	\$ 22,583	\$ 9,188	2.46
2035	\$ 74,650	\$ 53,939	\$ 20,711	\$ 9,186	2.25

Notes: (1) From Table 35 (within body of report)
(2) From Table 28 (within body of report)
(3) Provided by Authority
(4) Actual



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Abbreviations

AET	All-electronic tolling
ATPM	Automatic toll payment machines
BAN	Bond Anticipation Note
BEA	Bureau of Economic Analysis
BMB	Bear Mountain Bridge
DMV	Department of Motor Vehicles
FHWA	Federal Highway Administration
GDP	Gross Domestic Product
IBTTA	International Bridge, Tunnel & Turnpike Association
IPI	Industrial Production Index
KRB	Kingston-Rhinecliff Bridge
MHB	Mid-Hudson Bridge
MPO	Metropolitan Planning Organization
NBB	Newburgh-Beacon Bridge
NYCSC	New York Customer Service Center
NYSBA	New York State Bridge Authority
NYSTA	New York State Thruway Authority
PANYNJ	The Port Authority of New York and New Jersey
RVW	Rip Van Winkle Bridge
VMT	Vehicle Miles Travelled

[THIS PAGE INTENTIONALLY LEFT BLANK]

NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

1.0 Background and Physical Description

The purpose of this report is to present annual forecasts of the New York State Bridge Authority (the "Authority") traffic and toll revenues through 2035, along with the Authority's estimated operating costs, adjustments related to the conversion to All-Electronic Tolling (AET) and resulting Net Revenues to support the Authority's intended sale of 2021 Revenue Bonds. Stantec was supported by three sub-consultants in the development of this report content: Spock Solutions, Fagan Consulting, and Alta Vista Solutions.

This same Stantec Team previously prepared a detailed traffic and revenue study in the fall of 2019 (referred to as "2019 Traffic Study" hereafter in this report). This study primarily assessed the revenue potential of the Authority bridges under the existing tolls at the time, as well as several alternative toll schedules and the potential conversion to All-Electronic Tolling (AET). It was determined that the revenue generated from the five bridges under the toll plan would not be sufficient to meet the long-term capital program needs of the Authority. In consultation with the Authority, a toll-rate setting process was undertaken and a resultant traffic and revenue (T&R) forecast was prepared with the goal of achieving revenue-sufficiency. Supported by these detailed forecasts, an annual toll increase plan was adopted to take effect on May 1st of four consecutive years starting in 2020 and through 2023. This set of projections considers background growth in traffic as well as impacts of toll increases and AET conversion on bridge traffic under pre-pandemic, "normal" conditions.

This current report presents a discussion of Hudson Valley transportation infrastructure, including the Authority's five bridges; national trends affecting traffic growth; population and employment growth in the Mid-Hudson Valley; a discussion of the recent COVID-19 Pandemic and its impacts on travel; historical and projected traffic, revenue and expenses for the bridges; the current toll schedule and its impacts on bridge traffic and revenues; the Authority's Capital Improvement Program; and potential pandemic recovery scenarios for traffic and revenue.

1.1 Hudson Valley Transportation Infrastructure

Figure 1 presents the southern part of the state of New York where the Hudson Valley is located.

The five bridges of the Authority are among thirteen vehicular crossings of the Hudson River and its estuaries between Albany and the Atlantic Ocean, including three bridges between Staten Island and New Jersey. Two of these crossings are operated by the New York State Thruway Authority (the "Thruway Authority"), and six are operated by the Port Authority of New York and New Jersey (the "Port Authority"). Between the Thruway bridge at Castleton-on-Hudson and the Outerbridge Crossing of the Arthur Kill between Staten Island and New Jersey, the thirteen crossings all charge tolls. There is no toll-free vehicular crossing of the Hudson River south of Albany.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

Figure 1: Southern New York State



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

1.1.1 New York State Bridge Authority Facilities

The law creating the Authority is found in the Bridge Authority Act, currently Sections 525 to 542 of the New York Public Authorities Law and defines the Authority's mission as ***"to maintain and operate the safe vehicle crossings over the Hudson River entrusted to its jurisdiction for the economic and social benefit of the people of the State of New York."*** To fulfill this mission, the Authority's Capital Improvement Program has and will continue to maintain the five bridges in good structural and functional condition.

Figure 1 (shown on page 1.2) presents the five vehicular bridges across the Hudson River operated by the Authority and serving local, recreational, and long-distance trips. From north to south, the five bridges, indicated with a star (★) in the map, are:

- **Rip Van Winkle Bridge** connects Columbia and Greene counties and the communities of Hudson and Catskill;
- **Kingston-Rhinecliff Bridge** connects Dutchess and Ulster counties and the communities of Kingston and Rhinebeck/Red Hook;
- **Mid-Hudson Bridge** connects Poughkeepsie in Dutchess County and Highland in Ulster County. It carries the second highest volume of traffic and the greatest number of commuters;
- **Newburgh-Beacon Bridge** is designated as Route I-84 and has two spans connecting Newburgh in Orange County and Beacon in Dutchess County. The bridge carries the highest volume of traffic of the five vehicular bridges, and it serves both long-distance and local trips;
- **Bear Mountain Bridge** connects Orange and Putnam counties (and touches the far northern corners of Westchester and Rockland counties) connecting the communities of Highland Falls/Fort Montgomery and Cold Spring/Garrison.

In 2010, the Governor and state legislature charged the Authority with the responsibility of maintaining the structure of the Walkway Over the Hudson Bridge. The Authority acquired ownership of the bridge for maintenance purposes on December 21, 2010 and entered into a 99-year lease with the NYS Office of Parks Recreation and Historical Preservation to operate and maintain the deck. The bridge carries a 1.3-mile pedestrian walkway via a former railroad bridge between the City of Poughkeepsie in Dutchess County and Highland in Ulster County. It has been designated as the Walkway Over the Hudson State Historic Park. The Authority has undertaken several maintenance projects with \$2.9 million in budgeted capital expenditures from 2021 through 2024.

The following sections provide descriptions, observed conditions in Summer 2019 and a brief summary of planned projects at or near each of the bridges. As a general caveat, the information on planned projects was primarily obtained from source documents dating back to before the COVID-19 pandemic so there may be shifts in timeframes that could not be captured in this report.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

1.1.1.1 Bear Mountain Bridge (BMB)

Bridge Description

Built in 1924 and rehabilitated in 1977, the Bear Mountain Bridge (BMB) is a suspension bridge located in New York State and owned by the New York State Bridge Authority (NYSBA). The bridge crosses the Hudson River and the CSX Transportation River Line Railroad, and is 2,255 feet (ft.) in length with a main span of 1,631 ft. The BMB's vertical and horizontal clearances over the river are 155 ft. and 584 ft. respectively. The upper level of the bridge deck supports Route 6 and Route 202 between Rockland and Westchester counties. The bridge also supports two pedestrian walkways, one on each side of the bridge. The BMB has one lane in each direction, eastbound (EB) and westbound (WB), with no median barrier. Tolls are collected at the toll plaza on the west end of the bridge for EB traffic. WB traffic is not tolled. Tolls can be paid manually or automatically through the E-ZPass electronic tolling system. The BMB was listed on the National Register of Historic Places in 1982. It was also formally declared a Metropolitan Area Historic Civil Engineering Landmark by the American Society of Civil Engineers and the New York State Bridge Authority in 1986 (see photo in Figure 2).

Planned Future Projects

The Authority plans to implement All Electronic Tolling at the BMB on October 1, 2021.

According to the New York Metropolitan Transportation Council (NYMTC) 2018-2045 Vision Plan and Transportation Improvement Plan (TIP 2020-2024), multiple improvement projects are under execution and study around the BMB area:

- The New York State Department of Transportation (NYSDOT) and the Federal Railroad Administration are evaluating potential improvements to intercity passenger rail service on the Empire Corridor from New York City to Buffalo via Albany, for a distance of 463 miles. The 2045 project includes Penn Station Access-Empire Corridor via the Hudson Line and Empire Corridor planning tier II environmental impact statement (EIS). A portion of the rail improvement project will be executed near the EB side of the BMB.
- NYSDOT is studying the development of the second railway line of the CSX River Subdivision which will pass by the west end of the bridge.
- NYSDOT is evaluating a possible Route 9A/Truck Route Upgrade for safety and geometry. Route 9A passes by the east end of the bridge.
- The BMB's main cable will be evaluated and investigated in a 10-year cycle to maintain a state of good condition.
- Deck repairs, paving and new pavement markings will be undertaken on the approach to the Bear Mountain Bridge with \$3 million in approach repaving in 2021 and \$10 million in paint work in 2024.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

Figure 2: Bear Mountain Bridge



1.1.1.2 “Hamilton Fish” Newburgh-Beacon Bridge (NBB)

Bridge Description

The Newburgh-Beacon Bridge (NBB) comprises two spans. The north span was built in 1963 and rehabilitated in 1984. The south span was built in 1980. The NBB is a truss-type bridge situated in New York State and owned by the New York State Bridge Authority (NYSBA). The bridge’s north span is 7,855 feet (ft.) in length, while the south span is 7,789 ft. The bridge’s maximum span between piers is 1,000 ft., with vertical and horizontal clearances over the Hudson River of 148 ft. and 760 ft., respectively. The NBB supports Interstate 84 (I-84) and New York State Route 52 (NY-52) over the river between Newburgh and Beacon. Tolls are collected at the toll plaza on the east end of the bridge for eastbound (EB) traffic. Traffic in the westbound (WB) direction is not tolled. Tolls can be paid manually or automatically through the E-ZPass electronic tolling system. The bridge is not listed on the National Register of Historic Places. It is classified as part of the urban principal arterial interstate (see photos in Figure 3).

The Authority is in the process of re-decking the westbound span of the NBB and plans to complete this project in 2023. The Authority completed re-decking the eastbound span in 2014.

Planned Future Projects

The Authority plans to implement All Electronic Tolling at the NBB on July 1, 2021.

According to the New York Metropolitan Transportation Council (NYMTC) 2018-2045 Vision Plan and Transportation Improvement Plan (TIP 2020-2024), multiple improvement projects are under execution and study around the NBB area:

- The New York State Department of Transportation (NYSDOT) and the Federal Railroad Administration are evaluating potential improvements to intercity passenger rail service on the Empire Corridor from New York City to Buffalo via Albany, for a distance of 463 miles. The study includes Penn Station Access-Empire Corridor via the Hudson Line and Empire Corridor planning tier II EIS. A portion of the rail improvement project will be executed near the EB side of the NBB.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

- NYSDOT is developing trailways between Kingston and Manhattan that will pass by the WB side of the bridge as part of the Empire State Trail.
- NYSDOT is working on developing and expanding guide signs over I-84 from the Pennsylvania state line to the Connecticut state line in Dutchess, Orange and Putnam counties. This project will bring signs on I-84 into compliance with the National Manual of Uniform Traffic Control Devices.

Figure 3: Newburgh-Beacon Bridge



(a) Overview of the bridge



(b) Overview of the bridge's south span

1.1.1.3 "Franklin D. Roosevelt" Mid-Hudson Bridge (MHB)

Bridge Description

Built in 1930 and rehabilitated in 1989, the Mid-Hudson Bridge (MHB) is a suspension bridge in New York State owned by the New York State Bridge Authority (NYSBA). The bridge is 3000 feet in length and crosses the Hudson River. The MHB vertical and horizontal clearances over the river are 137 ft. and 485 ft., respectively. The upper level of the bridge deck supports a pedestrian walkway and Route 44 over AMTRAK, Gerald Drive, and Rhode Island (RI) between Poughkeepsie and Highland. The MHB includes three lanes. One lane is eastbound (EB) and one westbound (WB) with no median barrier. The third (middle) lane is generally closed at all times except during rush hour traffic (6:00 am to 9:00 am in the EB direction, and 3:00 pm to 6:00 pm in the WB direction). The third lane is also occasionally opened when work is being done on either side of the bridge. Tolls are collected at the toll plaza on the west end of the bridge for EB traffic. WB traffic is not tolled. Tolls can be paid manually or automatically through the E-ZPass electronic tolling system. The MHB is not listed on the National Register of Historic Places, and the route is classified as an urban principal arterial freeway (see photos in Figure 4).

Planned Future Projects

The Authority plans to implement All Electronic Tolling at the MHB on March 1, 2022.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

According to the New York Metropolitan Transportation Council (NYMTC) 2018-2045 Vision Plan and Transportation Improvement Plan (TIP 2020-2024), several improvement projects are under execution and study around the MHB area:

- The New York State Department of Transportation (NYSDOT) and the Federal Railroad Administration are evaluating potential improvements to intercity passenger rail service on the Empire Corridor from New York City to Buffalo via Albany, for a distance of 463 miles. The 2045 project includes Penn Station Access-Empire Corridor via the Hudson Line and Empire Corridor planning tier II EIS. A portion of the rail improvement project will be executed adjacent to the EB side of the MHB. Additionally, Route 9W near the MHB's WB end will be resurfaced and replaced.
- NYSDOT is developing trailways between Kingston and Manhattan that will pass by the WB end of the bridge as part of the Empire State Trail.

Figure 4: Mid-Hudson Bridge



(a) View of the bridge



(b) Bridge entrance in the EB direction

1.1.1.4 “George Clinton” Kingston-Rhinecliff Bridge (KRB)

Bridge Description

Built in 1957 and rehabilitated in 2002, the Kingston-Rhinecliff Bridge (KRB) is a continuous truss deck bridge in New York State owned by the New York State Bridge Authority (NYSBA). The KRB measures 7,793 feet (ft.) in length across the Hudson River. Its longest span between piers measures 800 ft., with vertical and horizontal clearances of 152 ft. and 776 ft. over the river, respectively. The KRB carries Route 199 across the river north of the City of Kingston and the hamlet of Rhinecliff. The KRB has one lane in each direction, eastbound (EB) and westbound (WB), with no median barrier. Tolls are collected at the toll plaza on the west end of the bridge for EB traffic. WB traffic is not tolled. Tolls can be paid manually or automatically through the E-ZPass electronic tolling system. The bridge is not listed on the National Register of Historic Places and is classified as a rural principal arterial (see Figure 5).



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

Planned Future Projects

The Authority plans to implement All Electronic Tolling at the KRB on December 1, 2021.

According to the New York Metropolitan Transportation Council (NYMTC), 2018-2045 Vision Plan and Transportation Improvement Plan (TIP 2020-2024), there are currently no potential improvement projects under execution or study around the bridge area.

Figure 5: Kingston-Rhinecliff Bridge



(a) Overview of the bridge's east end from the south

1.1.1.5 Rip Van Winkle Bridge (RVWB)

Bridge Description

Built in 1935 and rehabilitated in 1993, the Rip Van Winkle Bridge (RVWB) is a continuous truss-thru deck bridge in New York State owned by the New York State Bridge Authority (NYSBA). The bridge's total structure length is 5,036 feet (ft.) across the Hudson River. It has a maximum span of 800 ft. with vertical and horizontal clearances of 142 ft. and 760 ft. over the river, respectively. The RVWB supports a pedestrian walkway and Route 23 between Hudson and Catskill in the state of New York. The RVWB has one lane in each direction, eastbound (EB) and westbound (WB), with no median barrier. Tolls are collected at the toll plaza on the west end of the bridge for EB traffic. WB traffic is not tolled. Tolls can be paid manually or automatically through the E-ZPass electronic tolling system. The bridge is not listed on the National Register of Historic Places, and the route is classified as a rural principal arterial. (see photos in Figure 6).

Planned Future Projects

The Authority plans to implement All Electronic Tolling at the RVWB on November 1, 2021.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

According to the New York Metropolitan Transportation Council (NYMTC) 2018-2045 Vision Plan and Transportation Improvement Plan (TIP 2020-2024), no potential improvement projects are currently under execution or study around the bridge area.

Figure 6: Rip Van Winkle Bridge



(a) Overview of the bridge's west end



(b) Overview of the mid-span of the bridge



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

1.2 Other Transportation and Related Developments

In order to accurately forecast future demand on the Authority's bridges, it is necessary to review improvements and/or changes on competing and feeder routes. This information is considered in the forecast development, including both during construction (constraints on the system) and operation (assumed traffic relief on the corridors).

Projects in development or slated for future development having an impact on the Authority bridges include:

- **I-90: Castleton-on-Hudson Bridge Rehabilitation:** New York State Thruway Authority will undertake a \$50 million rehabilitation of the Castleton-on-Hudson Bridge, with contract letting planned for 2021. The Castleton-on-Hudson Bridge is near the Authority's Rip Van Winkle Bridge. It is not anticipated that this project will have a negative impact on the Authority's toll traffic and may in fact be positive during the construction period. To be conservative, we did not consider any positive impact in our forecast.
- **Rail Improvements:**
 - The New York State Department of Transportation (NYSDOT) and the Federal Railroad Administration are evaluating potential improvements to intercity passenger rail service on the Empire Corridor from New York City to Buffalo via Albany, for a distance of 463 miles. FRA and NYSDOT completed the Tier I draft environmental impact statement (DEIS) in January 2014. Six public hearings statewide presented the Tier 1 DEIS and solicited public comments. FRA anticipates publishing the Tier I Final EIS in 2022.
 - As this potential improvement is currently undefined and unfunded, we have not included them in our forecasts.

The three-mile-long Governor Mario M. Cuomo Bridge, located 13 miles north of New York City, carries the Thruway (I-87 and I-287) over the Hudson River between Nyack in Rockland County and Tarrytown in Westchester County. This bridge, the nearest southern competitor to the five vehicular bridges operated by the Authority, is the recently completed replacement of the Tappan Zee Bridge operated by the Thruway Authority. The project was built by a design-build consortium under the Governor's expedited plan of construction and opened in several phases. Construction on the bridge project began in 2013. The north span of the Governor Mario M. Cuomo Bridge was opened to northbound (westbound) traffic on August 26, 2017 and to southbound (eastbound) traffic on October 6, 2017. Southbound traffic was shifted to the south span when it was completed in September 2018. Although the capacity of the new Governor Mario M. Cuomo bridge is greater than the old Tappan Zee Bridge that it replaced, the new bridge is not expected to divert any future traffic from the NYSBA bridges due to the higher toll rates. It should be noted, however, that there was an initial decrease in NYSBA traffic around the time that the Governor Mario M. Cuomo Bridge opened, though a monthly analysis showed that traffic volumes began to decrease prior to the opening of the new bridge.

For toll facilities in general, the method of toll collection has evolved over time, generationally starting from patrons paying with cash, tokens and tickets. Beginning in the 1990's this was followed with systems with patrons still paying with cash, but tokens and tickets became



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Background and Physical Description

July 6, 2021

customers using E-ZPass with gated lanes. The current generation has many facilities now only offering customers high speed fully electronic toll collection lanes with video enforcement.

The Authority began offering E-ZPass toll collection in 1998 with gated enforcement, and in 2013 and 2014 NYSBA began utilizing automatic toll payment machines (ATPM) in some lanes at Bear Mountain, Kingston-Rhinecliff and Rip Van Winkle bridges to cater to non-E-ZPass customers as well as to recognize some of the safety and staffing advantages of the technology.

Paralleling national trends in the tolling industry, a major recent development in the downstate transportation network has been introduction of all-electronic tolling (AET), including at all tolling facilities operated by NYSTA, all bridges and tunnels operated by MTA B&T, on the three Staten Island crossings, the Holland Tunnel and two of the three toll plazas at the George Washington Bridge operated by the PANYNJ. The Port Authority recently announced plans to convert its remaining Hudson River Crossings (the Lincoln Tunnel and the upper level of the George Washington Bridge) to AET by mid- 2022 when the construction and installation of new tolling technology is expected to be completed. The popularity of AET in the United States is evidenced by the fact that over 200 toll facilities now operate with AET, based on the 338 US Tolling facilities participating in IBTTA's Toll Miner database.¹ This is a significant increase in AET operations, accelerated in part by agencies adopting AET in response to COVID-19, and some converting permanently to AET.

A review of these facilities suggests a wide range of implementation approaches, rate modifications, enforcement policies and other factors unique to each facility and to meet each agency's specific goals. Table 1 presents a timeline of the numerous conversions to all-electronic tolling in the region in recent years.

Table 1: Toll Facilities in the Region that have converted to All-Electronic Tolling

Toll Agency	Facilities Converted to AET	Year of Conversion
MTA B&T	Henry Hudson Bridge	2012
NYSTA	Tappan Zee/Governor Mario M. Cuomo Bridge	2016
Mass DOT	Massachusetts Turnpike	2016
MTA B&T	All remaining MTA B&T toll facilities (2 Tunnels & 6 Bridges)	2017
PANYNJ	Bayonne Bridge	2017
NYSTA	All remaining NYSTA barrier toll operations	2018
PANYNJ	Outerbridge Crossing & Goethals Bridge	2019
NYSTA	Ticketed mainline of the New York State Thruway	2020
PANYNJ	Holland Tunnel & George Washington Bridge Palisades Interstate Parkway & Lower-Level Toll Plazas	2020
Pennsylvania Turnpike	Pennsylvania Turnpike (systemwide)	2020

¹ Source: <https://www.ibtta.org/content/ibtta-tollminer-tool/collection-methods> as accessed April 23, 2021



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue
July 6, 2021

2.0 Historical Bridge Traffic and Revenue

A variety of historical traffic and revenue data was analyzed to prepare the traffic and revenue forecast for the five NYSBA-operated bridges. The data was obtained from the Authority and includes a review of toll rates, the observed traffic and revenue for each bridge between 2010 and 2020, hourly traffic data by vehicle and payment type on each bridge, transponder usage frequency data, and hourly license plate counts collected on the Newburgh-Beacon Bridge. This section summarizes the observed trends from these data.

2.1 Toll Rates

Tolls are collected on the five vehicular bridges in the eastbound direction only, as they are on all non-Authority bridges to the south of the Authority's jurisdiction. In 2020, the Authority implemented a toll increase spread over four years, with increases on May 1st of each year.

The first phase of toll increase was implemented on May 1, 2020, during the early months of COVID-19 pandemic, followed by the second phase that was implemented on May 1, 2021. As part of the latest toll increase, the E-ZPass rate for all vehicle classes has been increased minimally, while toll rate for cash payment remains unchanged. Beginning in June 2021 at the Newburgh-Beacon bridge, and phasing in at the other bridges by March 2022, the collection of cash tolls will cease and be replaced by Tolls by Mail. The toll rates will not change with this conversion to AET; however, fines may apply for late payment.

The adopted toll schedule through 2023 is presented in Table 2.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

Table 2: New York State Bridge Authority Adopted Toll Schedules

Vehicle Class		Payment Method	Toll Rate				
			Pre-Increase	May 2020	May 2021	May 2022	May 2023
Passenger Cars - Commuter							
Class 11	Commuter	E-Z Pass	\$ 1.00	\$ 1.10	\$ 1.20	\$ 1.30	\$ 1.40
Passenger Cars - Non-Commuter							
Class 1	Passenger	Video	\$ 1.50	\$ 1.75	\$ 1.75	\$ 2.00	\$ 2.15
Class 1	Passenger	E-Z Pass	\$ 1.25	\$ 1.35	\$ 1.45	\$ 1.55	\$ 1.65
Class 7	Psgr Extra Axle	Video	\$ 1.00	\$ 1.25	\$ 1.25	\$ 1.50	\$ 1.70
Class 7	Psgr Extra Axle	E-Z Pass	\$ 0.90	\$ 1.00	\$ 1.10	\$ 1.20	\$ 1.30
Commercial Vehicles							
Class 2	Truck 2 Axle	Video	\$ 5.00	\$ 6.00	\$ 6.00	\$ 7.00	\$ 8.00
Class 2	Truck 2 Axle	E-Z Pass	\$ 4.50	\$ 4.90	\$ 5.30	\$ 5.70	\$ 6.10
Classes 3 - 6	Trucks per Axle	Video	\$ 2.50	\$ 3.00	\$ 3.00	\$ 3.50	\$ 4.00
Classes 3 - 6	Trucks per Axle	E-Z Pass	\$ 2.25	\$ 2.45	\$ 2.65	\$ 2.85	\$ 3.05
Class 8	Trucks Extra Axle	Video	\$ 2.50	\$ 3.00	\$ 3.00	\$ 3.50	\$ 4.00
Class 8	Trucks Extra Axle	E-Z Pass	\$ 2.25	\$ 2.45	\$ 2.65	\$ 2.85	\$ 3.05

Note: NYSBA Commuter Discount Plan: Customer must be a NY Customer Service Center E-ZPass account holder in good standing and be enrolled in the NYS Bridge Authority Discount Plan to receive discounts. A minimum of \$20.40 (17 trips) will be charged each month at \$1.20 for each Class 1 tag assigned the NYSBA Discount Plan. Each additional trip will be charged at the \$1.20 discount rate.

Tolls on the Authority's bridges are the lowest of all Hudson River crossings. Current (May 2021) toll rates for passenger cars (full fare and commuter rates) and for 5-axle trucks for the Authority bridges, the George Washington Bridge, the Mario M. Cuomo Bridge and the Castleton-on-Hudson Bridge are shown in Table 3.

Tolls on the Authority bridges, the George Washington Bridge and the Mario M. Cuomo Bridge are collected one-way in the eastbound direction only, whereas the tolls on the Castleton-on-Hudson Bridge are collected, within the New York State Thruway's ticket system, in both directions. The respective tolls for the Authority bridges, the George Washington Bridge, the Mario M. Cuomo Bridge and the Castleton-on-Hudson Bridge are shown in both one-way and round-trip terms to place them on an equivalent basis. The Authority's tolls are generally considerably lower than the other Hudson River bridge tolls.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

Table 3: May 2021 Tolls on Hudson River Bridges (One-Way / Round Trip)

Authority / Facility	One-Way/ Round-Trip Tolls				
	Passenger Car			5-Axle Trucks E-Zpass	
	Cash/Tolls by Mail	E-ZPass	Commuter ^(A)	Cash/AET	E-ZPass
NYSBA	\$1.75 / \$1.75	\$1.45 / \$1.45	\$1.20 / \$1.20	\$15.00 / \$15.00	\$13.25 / \$13.25
PANYNJ / George Washington Bridge	\$16.00 / \$16.00	Peak Rate \$13.75 / \$13.75 ^(B)	Commuter plan not offered	\$110.00/\$110.00	Peak Rate \$95.00 / \$95.00 ^(B)
NYSTA / Gov. Mario M. Cuomo Bridge	\$6.83/\$6.83	Resident E-ZPass \$4.75 / \$4.75	\$3.15 / \$3.15	\$55.77 / \$55.77	\$49.34 / \$49.34 ^(C)
		Standard NY E-ZPass \$5.25 / \$5.25			
		Out of State E-ZPass \$6.04 / \$6.04			
NYSTA / Castleton-on-Hudson	\$1.27 / \$2.54 ^(D)	NY E-ZPass \$0.97/\$1.94	\$0.62 / 1.24 ^(E)	\$5.68/\$11.36	NY E-ZPass \$4.37/\$8.74
		Non-NY E-ZPass \$1.12/\$2.24	n/a		Non-NY E-ZPass \$5.03/\$10.06

Notes: (A) Commuter requires E-ZPass

(B) Reduced E-ZPass Off Peak rates available

(C) Showing maximum toll - may be reduced during certain hours

(D) Ticket system - US 9 exit (B1) to/from Selkirk exit (22)

(E) Requires purchase of \$88 annual permit, plus surcharge of \$0.62 per trip crossing Castleton-on-Hudson Bridge

2.1.1 Past Changes in Toll Collection

Table 4 lists the history of systemwide toll modifications for the Authority, along with seven other toll authorities throughout the state (going back to 1982).

Until the 2012 toll increase, the Authority was the only authority that had not increased tolls since 2000. All Hudson River crossings increased tolls in the recent timeframe of 2019 to 2021. In conjunction with the Thruway Authority and the Port Authority, tolls on all the Hudson River crossings from the Rip Van Winkle Bridge southward were converted to one-way toll collection in the 1970s by doubling the eastbound toll; thus, no change occurred in the toll charged for a round-trip.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

Table 4: Toll Increase Frequencies, 1982 - Present

Agency	Frequency
New York State Bridge Authority	1989, 2000, 2012, 2020 ¹ , 2021 ¹
Port Authority of New York / New Jersey ²	1987, 1991, 2001, 2008, 2011, 2012, 2013, 2014, 2015, 2020
New York State Thruway Authority	1988, 2005, 2008, 2009, 2010, 2021 ³
MTA Bridges and Tunnels	1989, 1993, 1996, 2003, 2005, 2008, 2009, 2011, 2013, 2015, 2017, 2019, 2021 ⁴
Niagara Falls Bridge Commission	1982, 1991, 1995, 1998, 2007, 2016-2020 (trucks)
Buffalo-Fort Erie Bridge Authority	1984, 1993, 1996, 1997, 2000, 2002, 2007, 2018, 2020
Thousand Islands Bridge Authority	1984, 2007, 2013, 2019
Ogdensburg Bridge and Port Authority	1985, 2006, 2019

¹ Toll increases for 2020, 2021, 2022 and 2023 approved by NYSBA in 2020.

² Source: Toll table 2012-2015 as accessed March 21, 2019 at <http://www.panynj.gov/bridges-tunnels/pdf/toll-table-2001-2015.pdf> and "Tolls" as accessed April 23, 2021 at <https://www.panynj.gov/bridges-tunnels/en/tolls.html>

³ Toll increases for 2021 and 2022 were approved by NYSTA in 2020.

⁴ 2021 Toll Increase at MTA B&T crossings effective March 31, 2019 and April 11, 2021

2.2 Historical Traffic and Revenue 2010-2020

Stantec analyzed toll transactions and revenues on the Authority's bridges for the years 2010 through 2020 with the intent of identifying trends in transaction growth and revenue growth by bridge and payment category. The historical growth in toll transactions and revenue for the full system is shown in Figure 7. As was the case nationally and throughout New York State, traffic declined significantly after the state's declaration to stay at home in response to the COVID-19 pandemic in March 2020.

The volume of system transactions had remained relatively constant from 2010 through 2019, with a moderate average annual growth rate of 0.9 percent over nine years. Transactions declined 19.5 percent in 2020 due to the COVID-19 pandemic.

Annual transactions decreased by approximately 1.3 percent between 2010 and 2011 due to inclement weather conditions in the early part of the year followed by weak economic conditions and high gasoline prices over the later months of 2011. In 2012, the tolls on all Authority bridges were increased for all vehicle types effective January 30, but background growth outweighed driver reactions to the toll increase and traffic continued to show a positive, yet minimal increase of 0.5 percent over 2011. This positive traffic growth in spite of the toll increase could be the result of recovery from the decreased traffic levels in 2011 which may have offset any loss in traffic due to the toll increase. Toll revenue increased approximately 45 percent from 2011 to 2012. Both annual transactions and toll revenue on Authority bridges increased gradually following the toll increase. Notably, the annual transactions increased significantly during 2015 and 2016, as it did elsewhere in the region. In 2017, overall transaction volumes resumed slow growth, while toll revenue dropped slightly in 2017 due to a decrease in truck traffic. In 2018



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

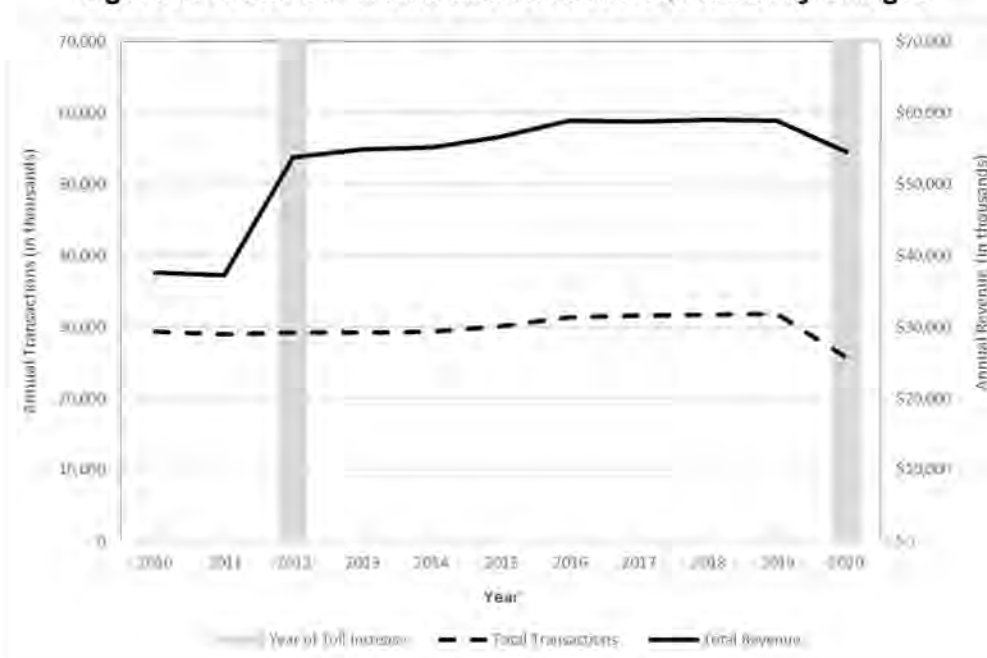
Historical Bridge Traffic and Revenue

July 6, 2021

and 2019, both transaction volumes and toll revenue grew slightly, reaching their highest levels since the 2012 toll increase.

Starting in March 2020, traffic on NYSBA bridges decreased significantly due to the COVID-19 pandemic as it did regionally and nationwide. Overall, 2020 transactions declined 19.5 percent in 2020 and toll revenue decreased by 7.4 percent.

Figure 7: Historical Traffic and Revenue on Authority Bridges



Toll paying traffic was 31.6 million in 2017 and grew by 0.5 percent to 31.8 million in 2018. Toll revenue was \$58,824,000 in 2017 and grew by 0.3 percent to \$59,020,000 in 2018. Month-by-month data shown in Figure 8 indicates that though traffic increased in the first half of 2018, the later months showed a decrease in bridge transactions. The loss of traffic roughly coincides with the opening of the new Governor Mario M. Cuomo Bridge in September 2018.

In 2019, toll paying traffic was 31.9 million compared to 31.8 million in 2018, a 0.5 percent increase. Toll revenue was \$58,969,000 compared to \$59,020,000 in 2018, a 0.1 percent decrease. Month-by-month data shown in Figure 8 indicates that traffic increased in the first five months of the year with a spike of 5.5 percent in March. June, July, and December saw modest decreases from the previous year, and the remaining months saw a modest increase.

There was a 4.9 percent increase in traffic during the first two months of 2020. In March, as businesses and jobs began to shut down due to the COVID-19 pandemic, traffic dropped significantly (23.7 percent) on Authority bridges. The biggest monthly decrease was experienced in April at 51.8 percent. Traffic has been steadily increasing from April's low but as of April 2021, traffic on the Authority bridges has still not returned to pre-pandemic levels.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

Figure 9 shows the month-by-month revenue for the year 2017 through 2020. The year-over-year change in revenue in 2018 and 2019 was largely consistent with the change in traffic for each month, showing minor losses around the time of the Governor Mario M. Cuomo Bridge completion. Similar to traffic, revenue in 2020 decreased significantly in March through July due to the pandemic, however, due to the May 1st toll increase, some months, including August, September, November and December had higher revenue than the previous year. October revenue was lower in 2020 than in 2019.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue
July 6, 2021

Figure 8: Total Toll Paying Traffic (in Thousands) on NYSBA Bridges, 2017-2020

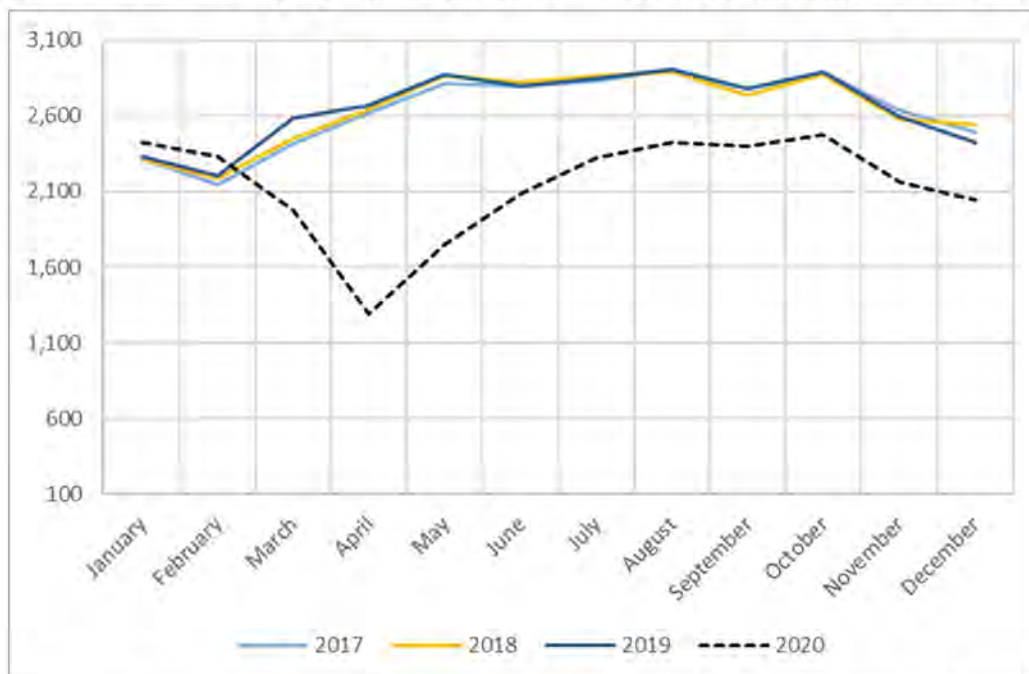


Figure 9: Total Revenue (in Thousands) from NYSBA Bridges, 2017-2020

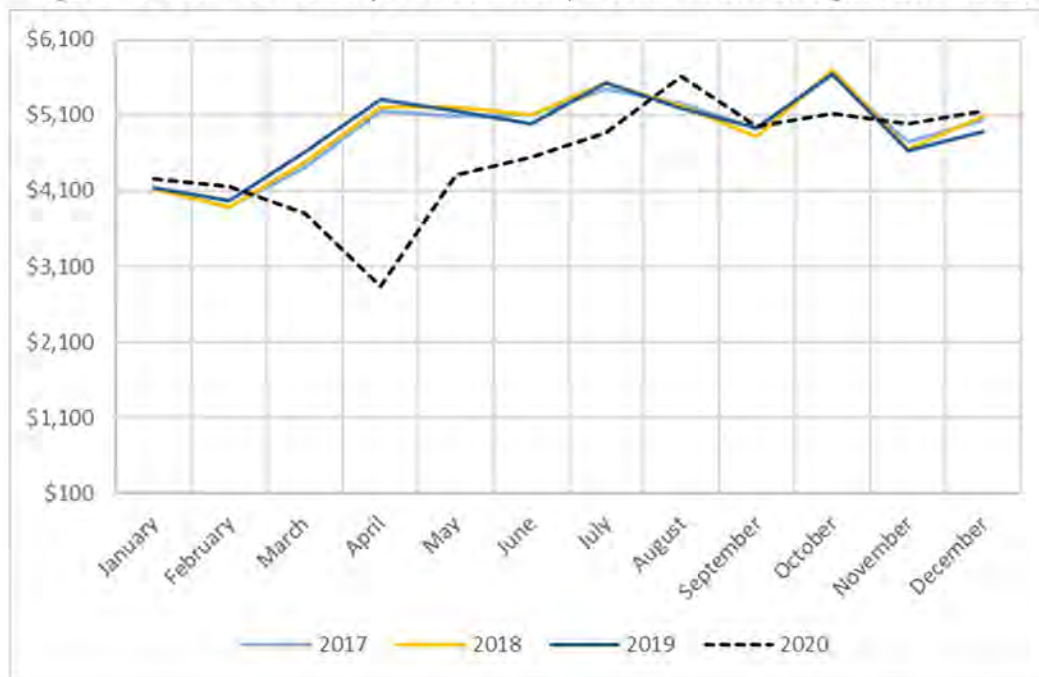


Figure 10 and Figure 11 present comparisons of the annual toll traffic on each of the Authority's bridges for both passenger cars and trucks 2010 to 2020. The Newburgh-Beacon Bridge carries



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

significantly higher volumes of passenger cars and trucks than the other four bridges. Although passenger car traffic on the Newburgh-Beacon Bridge has continued to grow slowly since the period of high growth in 2016, truck volumes have dropped off from 2017 through 2020.

Figure 10: Historical Passenger Car Traffic on NYSBA Bridges

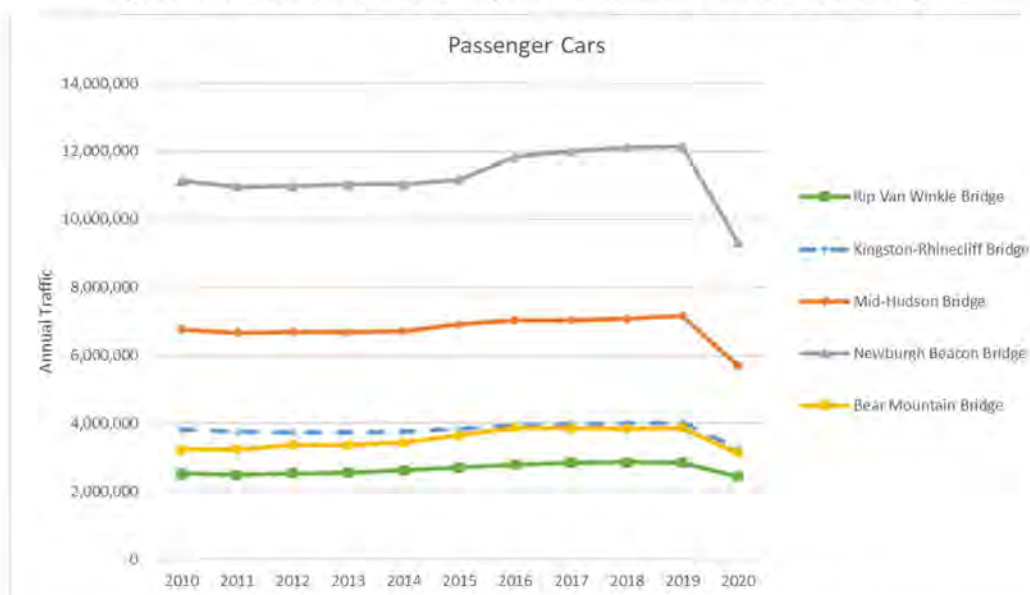


Figure 11: Historical Truck Traffic on NYSBA Bridges

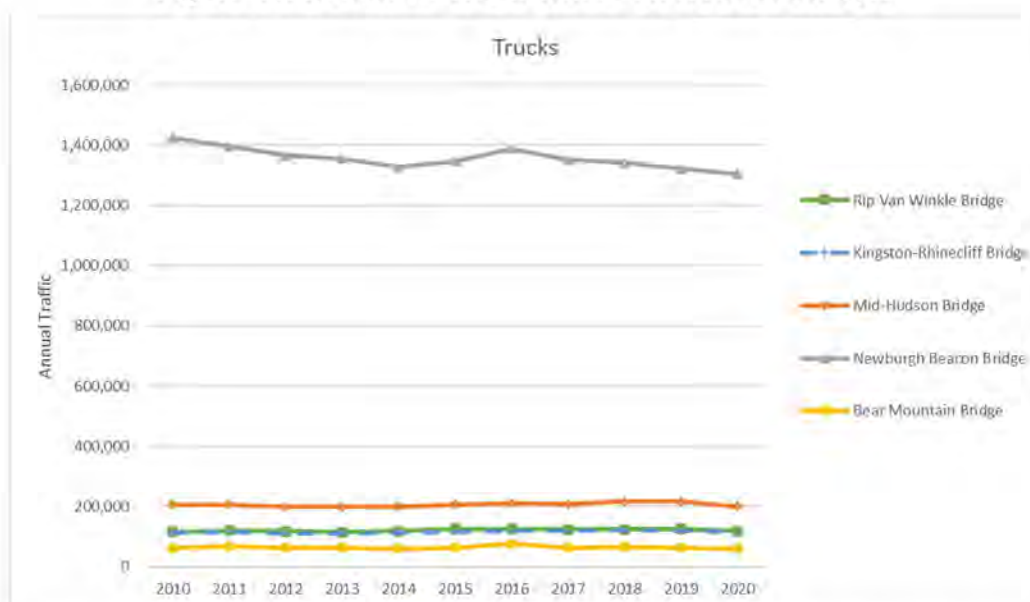


Figure 12 and Figure 13 show the percent change for both passenger cars and trucks by bridge from 2010 to 2020. It should be noted that the Bear Mountain Bridge (BMB) is the closest of the Authority's bridges to the Governor Mario M. Cuomo Bridge, located roughly 20 miles upstream



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

while the Newburgh-Beacon Bridge is the next closest located roughly 30 miles upstream. These bridges may have experienced some impact from the new bridge construction and completion. The total traffic on Bear Mountain Bridge decreased by approximately 0.3 percent in 2018, while the traffic on all other Authority bridges increased slightly. Both car and truck traffic growth for January through October 2019 was positive for all facilities versus the same period in 2018. Passenger car traffic decreased on all Authority bridges in 2020, with the Newburgh-Beacon Bridge seeing the most significant drop at 23 percent less than the previous year. Truck traffic also declined in 2020 but to a lesser degree. In fact, for trucks, the Newburgh-Beacon Bridge decreased the least of all five bridges at only 1.3 percent compared to 2019.

Figure 12: Annual Passenger Car Traffic Change by Bridge, 2010-2020



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue
July 6, 2021

Figure 13: Annual Truck Traffic Change by Bridge, 2010-2020



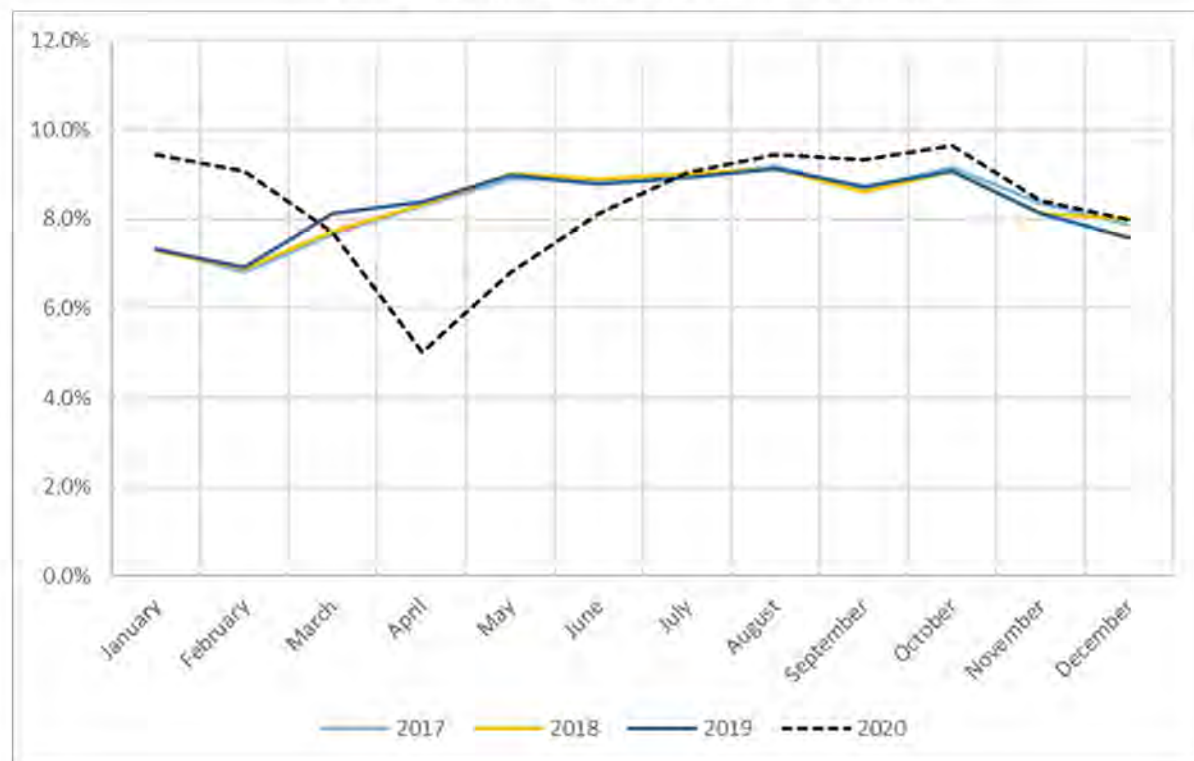
NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

Table 5 shows the monthly distribution of the traffic on all NYSBA bridges for the years 2017 through 2020. The percent share of traffic of each month is almost identical between 2017, 2018 and 2019, with a slightly higher share during the spring and summer months. The uniform seasonal distribution of the traffic is consistent with the fact that the majority of the trips on the Authority bridges was made by commuters during these three pre-pandemic years, which makes them less sensitive/subject to seasonal variations. In 2020, the distribution during the pandemic changed, as many businesses closed or employees began working from home and no longer commuted to work. Therefore, the first two months of the year pre-pandemic had a much higher share of traffic than usual, with 9.4 and 9.1 percent of annual traffic on NYSBA bridges. April, May and June saw a much smaller share of the annual traffic than in the previous three years.

Table 5: Monthly Share of Toll Paying Traffic



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

As shown in Table 6, total annual traffic on all the Authority bridges decreased in 2020 by 19.5 percent. E-ZPass customers decreased at a lesser degree than cash paying customers. Commuter traffic was down 27.2 percent, while passenger cars paying with cash were down by 25.3 percent. Non-commuter traffic paying with E-ZPass decreased by 17.8 percent. Truck traffic was down by only 47,000 vehicles or 2.6 percent overall. Those paying with E-ZPass decreased by 1.1 percent from 2019. Cash-paying trucks decreased by only by 18,000 vehicles or 11.1 percent.

Table 6: Toll Paying Traffic by Vehicle Type (in Thousands), 2019 - 2020

Vehicle Group	2019	2020*	Change	Percent Change 2019-'20
Passenger Cars				
Non-commuter Cash	6,752	5,043	-1,709	-25.3%
Non-commuter E-ZPass	20,025	16,465	-3,561	-17.8%
Commuters	3,280	2,389	-892	-27.2%
Total	30,058	23,897	-6,161	-20.5%
Trucks and Buses				
E-ZPass	1,583	1,565	-18	-1.1%
Cash	268	238	-30	-11.1%
Total	1,850	1,803	-47	-2.6%
Total Traffic				
E-ZPass	24,888	20,418	-4,470	-18.0%
Cash	7,020	5,281	-1,738	-24.8%
Total	31,908	25,700	-6,208	-19.5%

**Impacted by COVID-19 pandemic*



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue
July 6, 2021

2.3 2019 and 2020 Traffic and Revenue by Bridge and Vehicle Group

In 2019, there were approximately 31.9 million toll transactions (eastbound traffic only) on the bridges as shown in Table 7. Total bi-directional traffic on the Authority's five bridges, if we assume each direction is roughly equal, was approximately 63.8 million vehicles.

Table 7: 2019 and 2020 Traffic by Bridge and Vehicle Group

Bridge	2019 Annual Toll Paying Traffic (000)							Grand Total
	Passenger Cars				Trucks & Buses			
	Commuter	Non-commuter E-ZPass	Non-commuter Cash	Total	E-ZPass	Cash	Total	
Rip Van Winkle Bridge	274	1,849	729	2,852	110	17	127	2,979
Kingston- Rhinecliff Bridge	448	2,737	836	4,021	100	21	121	4,142
Mid-Hudson bridge	1,117	4,332	1,716	7,165	185	32	217	7,382
Newburgh-Beacon Bridge	1,135	8,246	2,763	12,144	1,134	188	1,322	13,466
Bear Mountain Bridge	307	2,861	708	3,876	54	10	64	3,940
Total	3,280	20,025	6,752	30,058	1,583	268	1,850	31,908

Bridge	2020 Annual Toll Paying Traffic (000)							Grand Total
	Passenger Cars				Trucks & Buses			
	Commuter	Non-commuter E-ZPass	Non-commuter Cash	Total	E-ZPass	Cash	Total	
Rip Van Winkle Bridge	217	1,665	554	2,436	105	14	119	2,555
Kingston- Rhinecliff Bridge	334	2,329	601	3,264	100	16	117	3,381
Mid-Hudson bridge	806	3,590	1,309	5,705	172	29	201	5,907
Newburgh-Beacon Bridge	813	6,509	2,026	9,349	1,137	169	1,305	10,654
Bear Mountain Bridge	218	2,370	553	3,142	51	10	61	3,202
Total	2,389	16,465	5,043	23,897	1,565	238	1,803	25,700

In 2019, of the 31.9 million toll-paying vehicles using the five bridges, 26.8 million, or approximately 84 percent, were passenger cars paying the full non-commuter toll, either by cash or by E-ZPass. The second largest class of vehicles was commuters, accounting for 3.3 million trips or 10.3 percent of total traffic. There were 1.85 million trucks, representing 5.8 percent of total traffic.

In 2020, of the 25.7 million toll-paying vehicles using the five bridges, 21.5 million, or 84 percent, were passenger cars paying the full non-commuter toll, either by cash or by E-ZPass. The second largest class of vehicles was commuters, accounting for 2.4 million trips or 9.3 percent of total traffic. There were 1.8 million trucks, representing 7.0 percent of total traffic, an increase from 2019. Table 8 shows the 2019 and 2020 annual toll-paying traffic and revenue on each bridge.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

Table 8: Traffic and Revenue by Bridge

Bridge	2019 Annual Toll-Paying Traffic		2019 Annual Toll Revenue		Average Toll
	Volume (000)	Percent Share	Amount (000)	Percent Share	
Rip Van Winkle Bridge	2,979	9.3%	\$4,892	8.4%	\$1.64
Kingston- Rhinecliff Bridge	4,142	13.0%	\$6,277	10.8%	\$1.52
Mid-Hudson bridge	7,382	23.1%	\$11,176	19.2%	\$1.51
Newburgh-Beacon Bridge	13,466	42.2%	\$30,312	52.0%	\$2.25
Bear Mountain Bridge	3,940	12.3%	\$5,672	9.7%	\$1.44
Total	31,908	100.0%	\$58,330	100.0%	\$1.83
Bridge	2020 Annual Toll-Paying Traffic		2020 Annual Toll Revenue		Average Toll
	Volume (000)	Percent Share	Amount (000)	Percent Share	
Rip Van Winkle Bridge	2,555	9.9%	\$4,655	8.0%	\$1.82
Kingston- Rhinecliff Bridge	3,381	13.2%	\$5,666	9.7%	\$1.68
Mid-Hudson bridge	5,907	23.0%	\$9,919	17.0%	\$1.68
Newburgh-Beacon Bridge	10,654	41.5%	\$28,622	49.0%	\$2.69
Bear Mountain Bridge	3,202	12.5%	\$5,059	8.7%	\$1.58
Total	25,700	100.0%	\$58,407	100.0%	\$2.27

Source: New York State Bridge Authority

As can be seen in Table 7 and Table 8:

- The highest volume was carried on the Newburgh-Beacon Bridge in both 2019 and 2020, with almost 13.5 and 10.7 million vehicles, or 42.2 and 41.5 percent of total traffic, respectively. The Newburgh-Beacon Bridge also carried the highest number of trucks - 1.3 million in 2019 and 2020, which accounted for 71.4 percent and 72.3 percent of all trucks using the five bridges. As a result of the high percentage of trucks paying relatively higher tolls, the Newburgh-Beacon Bridge accounted for 52 and 49 percent of total revenues in 2019 and 2020, respectively.
- In 2019 and 2020, toll-paying traffic on the Mid-Hudson Bridge was 7.4 and 5.9 million vehicles, the second highest volume of the bridges. The Mid-Hudson Bridge is a commuter facility and commuters participating in the commuter discount plan accounted for 1.1 million (15.6 percent) of total toll-paying passenger car traffic in 2019, and 14.1 percent in 2020. This bridge represented 23 percent of total traffic in both years, but revenue was only 19.2 and 17.0 percent of total Authority toll revenue in 2019 and 2020, due to the lower commuter tolls.
- In 2019, the Rip Van Winkle, Kingston-Rhinecliff and Bear Mountain bridges carried 9.3 percent, 13.0 percent and 12.3 percent, respectively, of total traffic and accounted



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

for 28.9 percent of toll revenues. In 2020, the trend was similar despite reduced traffic volumes. The Rip Van Winkle, Kingston-Rhinecliff and Bear Mountain bridges carried 9.9 percent, 13.2 percent and 12.5 percent, respectively, of total traffic and accounted for 26.3 percent of toll revenues.

- Figure 14 shows the historical trend of the E-ZPass payment method as a percentage of total transactions on the Authority bridges, as well as by vehicle category. The market share of E-ZPass for passenger cars increased from approximately 67 percent in 2013 to 79 percent in 2020. For trucks, the E-ZPass market share increased from 76 percent in 2013 to approximately 87 percent in 2020. Overall, the total market share of electronic payments increased from approximately 67 percent to 79 percent between 2013 and 2020.

Figure 14 : Historical E-ZPass Share on Authority Bridges, 2013-2020

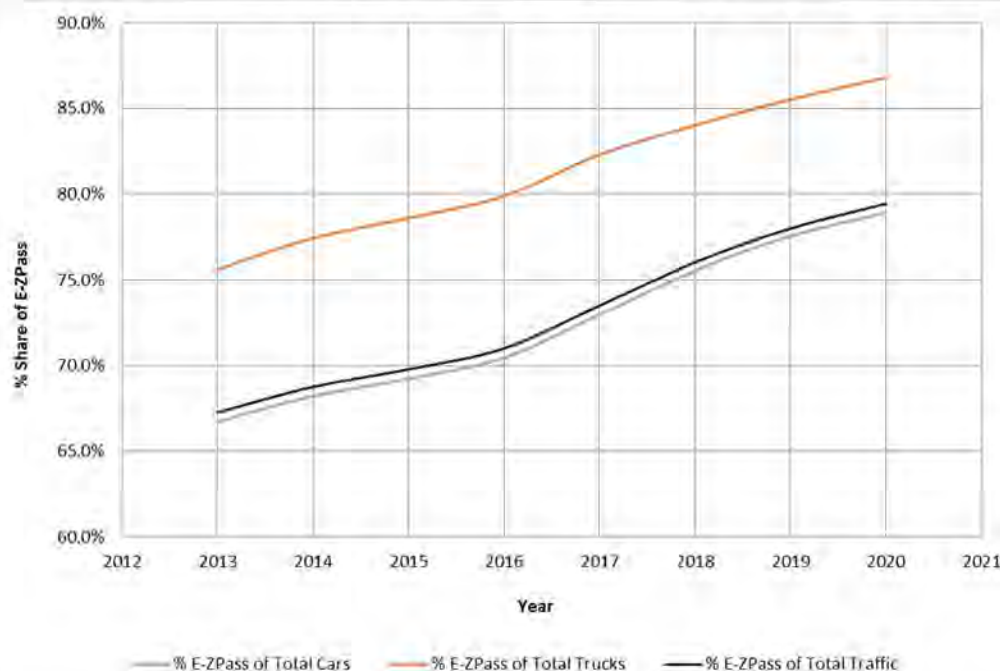


Figure 15 shows the E-ZPass market share overall for each bridge as well as for all five bridges combined, as seen in 2019, the last full year pre-pandemic. E-ZPass market share has grown slightly through the pandemic, averaging 79.4 percent E-ZPass in 2020 systemwide.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue
July 6, 2021

Figure 15: E-ZPass Market Share of Total Bridge Traffic – 2019

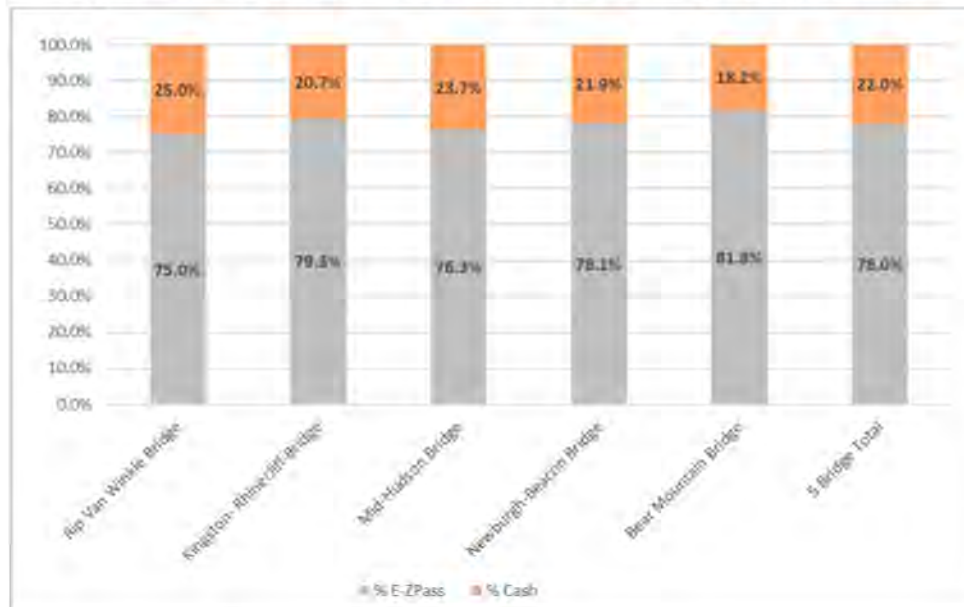


Figure 16 and Figure 17 show the 2019 E-ZPass market share by vehicle type for each bridge as well as for all five bridges combined.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue
July 6, 2021

Figure 16: E-ZPass Market Share of Passenger Car Traffic - 2019

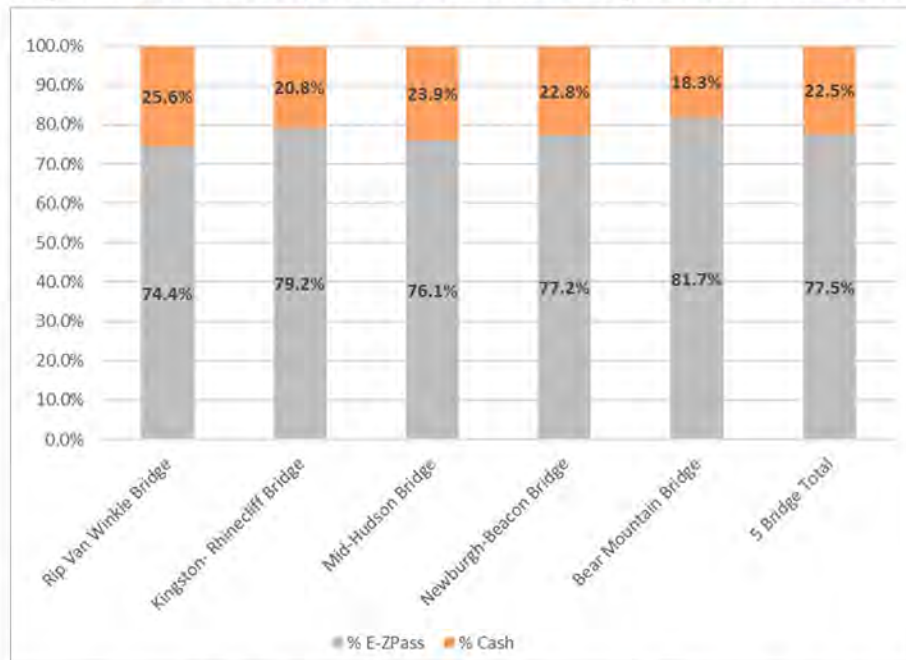
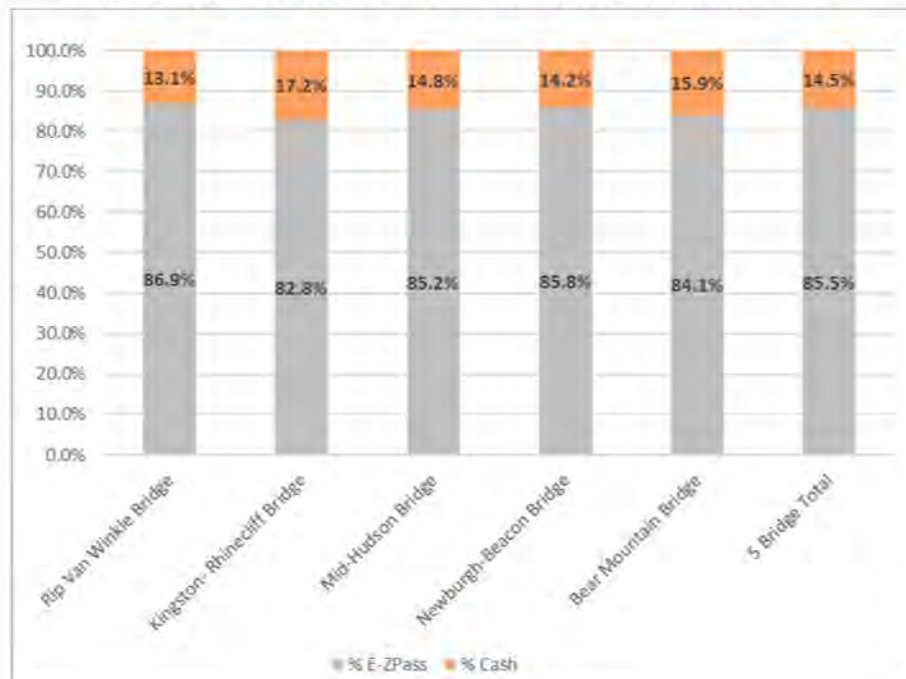


Figure 17: E-ZPass Market Share of Truck Traffic - 2019



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

2.4 Transponder Usage Frequency Data

To fully benefit from a discussion of travel characteristics for traffic on the Authority's crossings one must first understand the relationship between customers of a toll facility, trips they make on that facility, and their frequency of travel. The information below summarizes pre-pandemic data, as commuter travel patterns are currently in flux.

Toll facilities can be generally divided into three basic types: commuter, through-trips (longer distance), and a combination of commuter and through-trips.

- A commuter facility would be characterized by many individual drivers making frequent trips back and forth to work with morning and evening peaks of traffic. A relatively small number of individual customers would account for many of the annual trips on that facility. The Mid-Hudson Bridge is a good example of a commuter facility. Generally, commuter facilities have high percentages of electronic transponder usage.
- Conversely, a through facility would be characterized by drivers making long-distance trips with relatively few commuters and no significant periods of peak traffic during the day. Most trips would be by drivers using the facility once per month or less on an annual basis. The Newburgh-Beacon Bridge is a good example of a through facility.
- The third type of facility is a combination of commuter and through-trips. One of the best examples is the George Washington Bridge (GWB) in New York. As a bridge to Manhattan, there are morning and evening peak periods typical of commuter facilities. However, it is also I-95, the major through route in the Northeast Corridor, giving the GWB a large through-trip component.

All three types of facilities share similar relationships between trips and customers. Generally, the largest share of trips occurs in the highest frequency of travel category, with the lowest share of trips in the lowest frequency of travel categories. Conversely, when one discusses actual customers, the highest share of customers is in the infrequent-trip category, and the lowest share of actual customers is in the most-frequent category. This relationship can be better explained if we consider two extreme cases: a commuter who crosses the bridge every day, and an infrequent traveler who crosses the bridge once per year. On an average day, a toll collector sees the same commuter cross the bridge every day. On the other hand, in the case of the very infrequent traveler, a toll collector sees a different driver every day – 365 different drivers over the course of the year.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

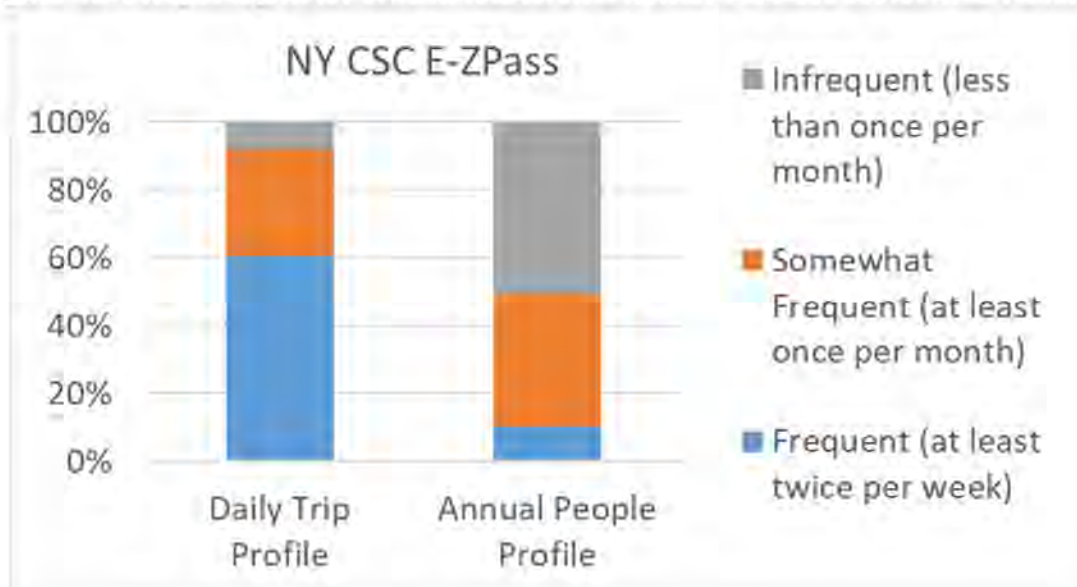
As shown in Table 9, the share of annual trips is very different than the share of annual people in this example – with a very large number of infrequent annual people contributing to infrequent trips.

Table 9: Sample Trips to People

On an Average Day	Over the course of a year		Share of Annual Trips	Share of Annual People
1 very frequent commuter	365 trips	1 person	50%	0.3%
1 extremely infrequent traveler	365 trips	365 people	50%	99.7%
TOTAL: 2 trips	730 trips	366 people	100%	100%

Statistics for E-ZPass usage for the month of September 2018 were obtained and analyzed with the purpose of assessing travel frequency on the Authority's bridges. The data was analyzed from the perspective of trips on NYSBA facilities on an average day, versus individual customers who drive on NYSBA facilities over the course of a year. Figure 18 presents a side-by-side comparison of the two perspectives.

Figure 18: Frequency of NY Customer Service Center E-ZPass on NYSBA Facilities



On an average day, it is estimated that the majority of E-ZPass customers on Authority bridges are frequent customers who travel twice or more each week (shown in blue on Figure 18). However, this same group of customers represents only a small portion of individual E-ZPass customers that drive on the NYSBA facilities over the course of a year.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue

July 6, 2021

If we instead focus on infrequent customers, we can see that on an average day, less than 10 percent of trips are made by someone who is making his or her only NYSBA crossing that month. However, since this is an average day, there is a customer like this every day – in fact, different customers every day, to account for this portion of the average day trip profile. Since these are unique individuals each day of the month, they represent a vastly greater number of people and E-ZPass accounts than the commuter base. Over the course of the year, that same 10 percent of trips is estimated to make up more than half of all E-ZPass customers, with 55 percent of the annual people profile.

Although the graphs presented here are specifically NY CSC E-ZPass account holders, the same relationship between trip frequency on an average day versus unique customers holds true for non-account holders. In general, non-account holders travel less frequently than account holders, so that this relationship has significant implications when considering alternative types of toll collection, such as all-electronic tolling (AET), that require the toll collection process to identify each individual customer.

2.5 Hourly Traffic Data (Pre-Pandemic)

Stantec obtained pre-pandemic eastbound (tolled direction) hourly traffic data for the five bridges from NYSBA. The data were collected for each day of the month of September 2018 and for each hour of the day. The transaction data were classified by vehicle class and payment type. For each bridge, Tuesday through Thursday data were averaged to determine an average weekday for the month. The passenger car distribution is quite consistent across all bridges, peaking during the morning and afternoon commuting hours. The trucks display less of a commuter pattern, with their travel heaviest slightly later in the morning as they try to avoid commuter traffic but arrive at their destinations on time.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue
July 6, 2021

Figure 19 and Figure 20 show the hourly distribution of traffic on each bridge on an average weekday by passenger cars and trucks, respectively.

Figure 19: Hourly Distribution of Passenger Cars on Average Weekday, Sep 2018 Data

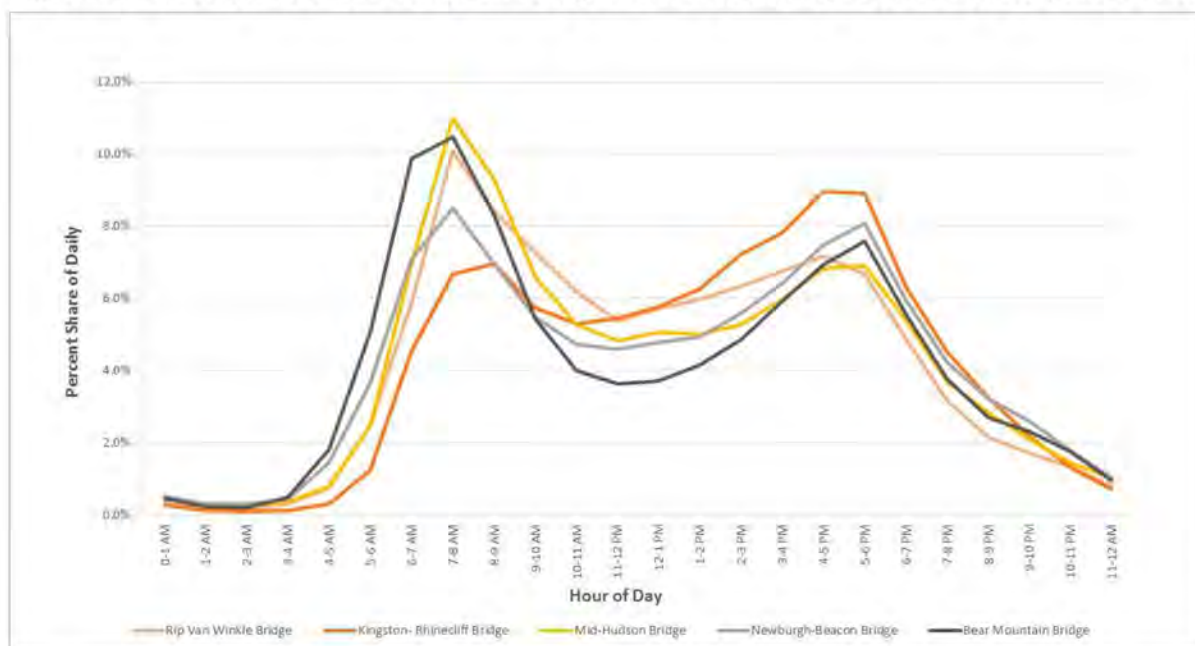
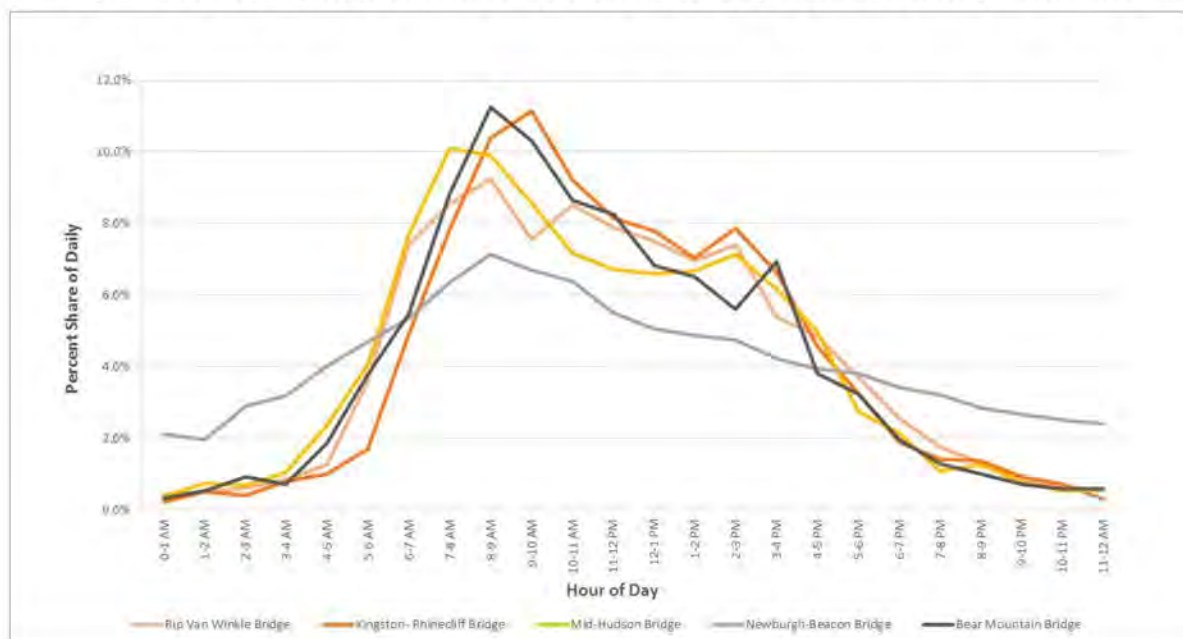


Figure 20: Hourly Distribution of Trucks on Average Weekday, Sep 2018 Data



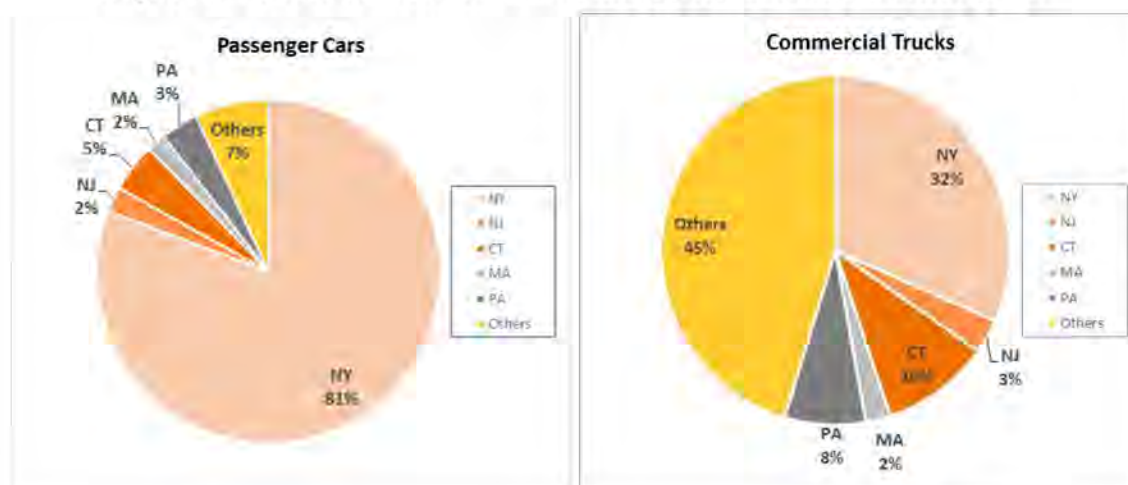
NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Historical Bridge Traffic and Revenue
July 6, 2021

2.6 License Plate Data (Pre-Pandemic)

Stantec obtained license plate counts on the Newburgh-Beacon Bridge from NYSBA. The data included a count of cash-paying customers by the state issuing the license plate as well as by vehicle type (passenger car or commercial truck). The data was collected on the bridge on Wednesday, November 16, 2016 for a 9-hour period from 8 AM to 5 PM. The 9 hours of hourly traffic by state was expanded to a 24-hour profile based on the hourly distribution of traffic on the Newburgh-Beacon Bridge on an average weekday (see previous page). Figure 21 shows the result of this effort, grouping cash-paying customers by the state of the license plate registration. About 80 percent of cash-paying passenger cars are estimated to be residents of New York State while only 31 percent of cash-paying trucks are estimated to be registered in New York State. About 69 percent of the cash-paying truck traffic is estimated to be out-of-state.

Figure 21: Estimated License Plate Distribution for Cars and Trucks



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

3.0 Economic Backdrop and Outlook for the Future

Expanding upon background information pertaining to the operation of NYSBA bridges, an assessment of national and regional trends and socioeconomic conditions provides context for the interpretation of traffic and revenue patterns on the NYSBA bridges. The following sections discuss trends in national and regional travel, as well as regional population and employment. With the exception of Table 11 in Section 3.1, this section has not been updated since Stantec's 2019 report. This pre-pandemic context is used as a base for the updated forecasts with adjustments made to reflect different scenarios for post-COVID recovery. As the 2019 writeup was prepared very near the end of the year and in close proximity to the onset of the pandemic, there are little to no more recent pre-pandemic socioeconomic inputs available for this update.

3.1 Prior to the onset of the COVID-19 Pandemic

It is necessary to assess traffic trends prior to the onset of the COVID-19 pandemic to understand the background trends that were occurring in the region under normal, baseline conditions.

3.1.1 National Trends Affecting Traffic Growth

Although NYSBA facilities primarily serve the local communities they connect, it is useful to briefly consider macroeconomic trends in vehicle miles traveled (VMT) and factors potentially affecting future traffic growth.

Figure 22 depicts the 12-month moving total of national VMT on all U.S. highways, from 1971 through November 2018. As seen in this figure, there were temporary reductions in VMT during military combat, oil crises and previous economic recessions. Despite these temporary "dips", the VMT continued to grow rapidly over the years. The figure shows that, in recent years, with the exception of short plateaus during the 1991 and 2001 recessions (each less than one year), VMT grew at a steady pace through about 2005, then grew at a much slower pace through 2008. The increase in gas prices and the downturn in economic activity that took hold in late 2007 resulted in a significant reduction in total national travel mileage after the December 2007 peak. VMT declined throughout 2008 and early 2009. From the official end of the recession in mid-2009 through 2013, VMT generally remained flat. Then, in 2014 through 2017, VMT increased at a strong rate not seen since the late 1990s. The year 2016 experienced the largest annual increase in VMT since tracking began in 1971². This upward trend in VMT was likely due to an improved economy, employment and population growth, and a reduction in fuel prices. It is important to note that even with the recent overall growth in VMT, per capita VMT fell for nine straight years between 2005 and 2013. The State Smart Transport Initiative (SSTI) concluded in

² U.S. Department of Energy, Alternative Fuels Data Center, Maps and Data - Annual Vehicle Miles Traveled in the U.S.



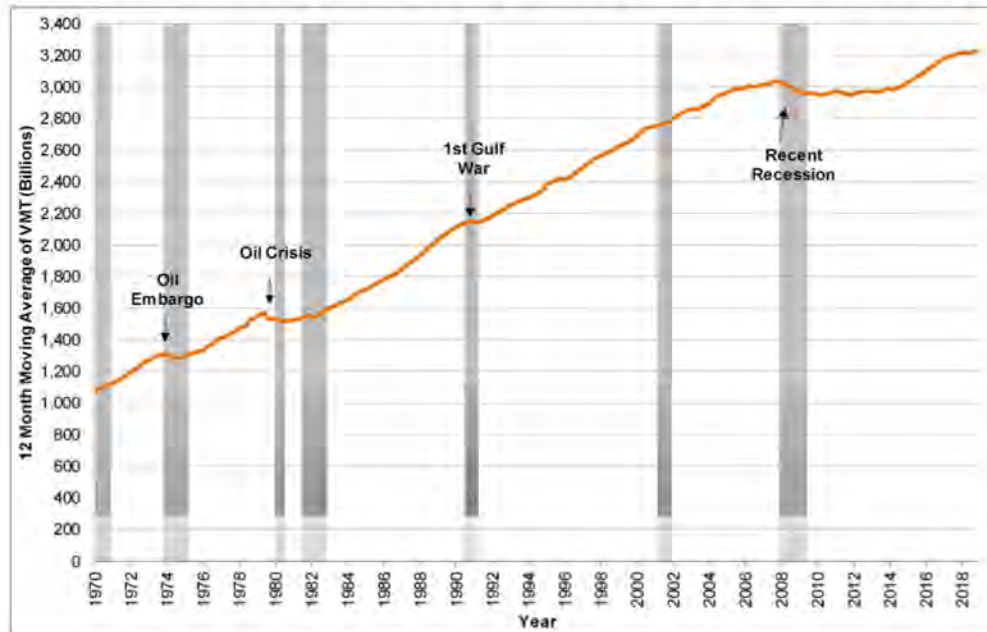
NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

a 2014 report that this decline reflected “changing demographics, saturated highways, and a rising preference for compact, mixed-use neighborhoods, which reduce the need for driving.”³ These factors may have come into play in the past year; in late 2017 through late 2018, nationwide VMT has experienced little to no growth.

Figure 22: National Historic Vehicle Miles Traveled (VMT), 12-month Moving Average



³ State Smart Transportation Initiative News, “Per capita VMT drops for ninth straight year; DOTs taking notice,” Chris Cahill, February 24, 2014.



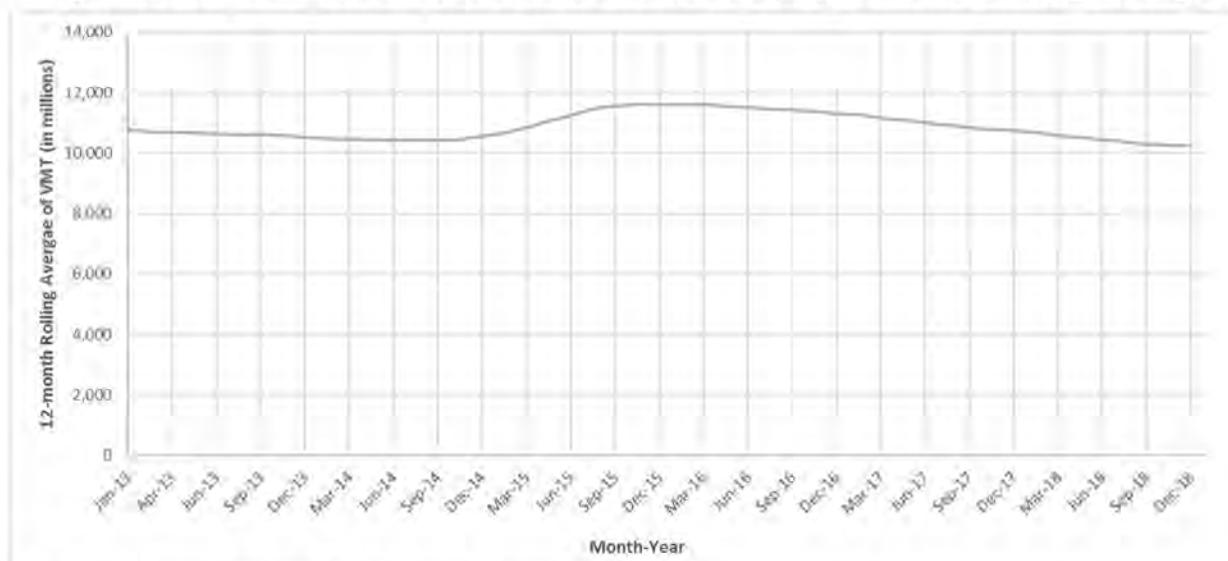
NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

For comparison, Figure 23 shows historic traffic growth in New York State. The figure shows steady overall declines in New York VMT starting in 2006. Recent monthly data show that December 2018 VMT was 0.2 percent lower than in December 2017 for New York State⁴, compared with a 0.8 percent decrease for the entire Northeast and a 0.3 percent decrease for the U.S.⁵

Figure 23: NY State Recent Vehicle Miles Traveled (VMT), 12-month Moving Average



Source: FHWA Office of Highway Policy Information. Most recent data available

The Federal Highway Administration prepares long term VMT forecasts for three different economic scenarios (low, baseline, and high growth) over a 20- and 30-year time period. The forecast compound annual growth rates for each scenario are shown in Table 10.

Table 10: FHWA Long-Term Growth Forecasts of National Vehicle Miles Traveled (VMT)

Time Period	Low Economic Growth	Baseline Economic Growth	High Economic Growth
2016-2036 (20 year)	0.9%	1.2%	1.3%
2016-2046 (30 year)	0.8%	0.9%	1.1%

Source: Office of Highway Policy Information U.S. DOT, Federal Highway Administration, May 2018

⁴ FHWA Office of Highway Policy Information, Traffic Volume Trends, November 2018 as accessed March 14, 2019 at https://www.fhwa.dot.gov/policyinformation/travel_monitoring/18novtv/page6.cfm

⁵ FHWA Office of Highway Policy Information, Traffic Volume Trends, November 2018 as accessed March 14, 2019 at https://www.fhwa.dot.gov/policyinformation/travel_monitoring/18novtv/page6.cfm



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

Historically, regional traffic trends have been influenced by socioeconomic conditions, with correlations often observed between passenger car growth and Gross Domestic Product (GDP) growth and between commercial vehicle growth and Industrial Production Index (IPI) growth. These economic indicators are generally indicative of the overall state of the economy, so it is helpful to review GDP and IPI forecasts in the development of traffic growth estimates since travel behaviors are also generally influenced by the economy.

Stantec typically uses the consensus forecast from more than 50 financial institutions and economic forecasting firms as an input into its traffic growth forecasts for revenue estimation purposes. Table 11 presents consensus forecasts for the next two years from April 2021 along with two longer term forecasts for real GDP and the Industrial Production Index, published in March 2021. (Note that higher growth is forecast for 2021 and 2022 from the post-COVID lower levels of GDP and IPI; longer term growth forecasts are similar to the two earlier five-year periods included in Stantec's 2019 report.)

Table 11: National Economic Outlook 2021-2032

Economic Measure	2021 Consensus Growth Forecast	2022 Consensus Growth Forecast	2023-2027 Consensus Annual Growth Forecast	2028-2032 Consensus Annual Growth Forecast
Real GDP	6.3%	4.3%	2.1%	1.9%
Industrial Production Index	6.3%	3.9%	2.0%	1.8%

Source: Blue Chip Economic Indicators: Top Analysts' Forecasts of the U.S. Economic Outlook for the Year Ahead", Walters and Kluwer Law & Business, March 12, 2021 and April 9, 2021

These national economic factors are of some use for the development of the traffic and revenue forecasts, specifically for the Newburgh-Beacon Bridge that caters to longer distance trips.

3.1.2 Mid-Hudson Valley Growth

Given that the Authority's facilities generally serve the local communities they connect, Stantec determined that it should take into consideration growth forecasts for population and employment in the six counties directly served by the five bridges operated by the Authority. These counties include Columbia, Dutchess and Putnam counties on the east side of the Hudson River and Greene, Ulster and Orange counties on the west side of the river.

Westchester and Rockland counties, which are located on the east and west sides of the Hudson River, respectively, would be expected to contribute to recreational trips to the Bear Mountain Bridge that is operated by the Authority. These two counties, however, are primarily served by the Governor Mario M. Cuomo Bridge, which is operated by the Thruway Authority.

To estimate population and employment growth within the Mid-Hudson Valley, Stantec used forecasts from Woods & Poole. Woods & Poole is a highly respected research and forecasting firm whose forecasts of socioeconomic factors are widely used by government agencies, corporations and consulting firms nationwide. Stantec has successfully used their socioeconomic forecasts for several toll facility assignments. They provide economic and demographic forecasts for every county in the United States through the year 2050. Stantec



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

obtained historical and forecast data through 2030 at the county level for total employment, households and population. Employment data measure both full-time and part-time employment from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA).

3.1.2.1 Population

As shown in Table 12, the six counties in the Mid-Hudson Valley had a total population of 1.066 million persons in 2010.

Historical population by county for the period 2010 through 2017 are from the U.S. Census Bureau, and the projections for 2020, 2025 and 2030 are from Woods & Poole.

Between 2010 and 2017, population in the six counties was basically flat. Only Orange County showed any growth (by just over 8,000 people) - this county's population growth almost exactly offset the population losses in four of the other five counties (Putnam County grew in population but by fewer than 200 people.) Woods & Poole forecasts that growth will resume slightly with annual growth rates for the period 2017 through 2030 of around 0.6 percent. The forecast six-county population in 2030 is 1.155 million.

At the county level, the highest average annual growth rate between 2020 and 2030 is expected to be in Putnam County (1.2 percent), while Ulster County is expected to have an average annual growth rate of 0.4 percent.

Table 12: Hudson Valley Population

Six Counties Directly Served by NYSBA Hudson River Bridges, 2010-2030

Year	Greene	Ulster	Orange	Columbia	Dutchess	Putnam	Grand Total	Compound Annual Growth Rate (CAGR)
Population (000)								
2010	49.1	182.4	373.5	63.0	297.8	99.8	1,066	
2017	47.8	179.8	381.6	61.3	295.8	100.0	1,066	0.0%
2020*	48.7	182.0	389.6	62.4	300.4	103.6	1,087	0.6%
2025*	50.4	185.5	403.2	64.1	308.0	109.9	1,121	0.6%
2030*	51.9	188.9	416.6	65.9	315.4	116.4	1,155	0.6%
CAGR '10-'20	-0.1%	0.0%	0.4%	-0.1%	0.1%	0.4%	0.2%	
CAGR '20-'30	0.6%	0.4%	0.7%	0.5%	0.5%	1.2%	0.6%	

Source: Woods & Poole Economics, Inc., *The Complete Economic and Demographic Data Source*, 2018

(*) Forecasts developed pre-pandemic.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

3.1.2.2 Employment

Historical employment for the period 2010 through 2017 and projections for 2020, 2025, and 2030 are shown in Table 13. These estimates and projections are also from Woods & Poole.

The number of jobs in the six counties increased between 2010 and 2017 at a compound annual rate of 1.2 percent, reaching 544,000 jobs in that year. This job growth was a positive development after the employment losses that began in 2007, due to the downturn in the national economy. Between 2005 and 2010, the number of jobs in the Mid-Hudson valley dropped by more than two percent. The forecast indicates that employment between 2017 and 2020 is expected to grow at a compound annual rate of 0.8 percent, resulting in a compound annual rate of 1.3 percent for the 2010 through 2020 decade. Between 2020 and 2030, employment is forecast to grow at a compound annual rate of 1.1 percent, reaching 634,000 jobs in 2030. This would represent 133,000 more jobs than in 2010 and 67,000 more jobs than in 2020.

At the county level, employment growth between 2020 and 2030 is expected to be greatest in the counties of Orange (+26,000 jobs) and Dutchess (+19,000 jobs), while each of the remaining counties shows an increase of 2,000 to 10,000 jobs.

Table 13: Hudson Valley Employment
Six Counties Directly Served by NYSBA Hudson River Bridges, 2010-2030

Year	Greene	Ulster	Orange	Columbia	Dutchess	Putnam	Grand Total	Compound Annual Growth Rate (CAGR)
Employment (000)								
2010	20.9	86.7	175.6	29.5	148.7	39.2	501	
2017	21.8	92.9	196.9	33.2	156.5	43.0	544	1.2%
2020*	22.6	96.3	205.6	34.7	163.0	44.8	567	0.8%
2025*	23.7	101.6	218.7	36.8	172.6	47.5	601	1.2%
2030*	24.8	106.6	231.7	39.0	181.8	50.1	634	1.1%
CAGR '10-'20	0.8%	1.1%	1.6%	1.6%	0.9%	1.3%	1.3%	
CAGR '20-'30	0.9%	1.0%	1.2%	1.2%	1.1%	1.1%	1.1%	

Source: Woods & Poole Economics, Inc., *The Complete Economic and Demographic Data Source*, 2018

(*) Forecasts developed pre-pandemic.

These projected regional population and employment data along with the recent historical data since 2010 provides input into the traffic and revenue forecasting model, suggesting the potential for low to modest growth through 2030.

3.2 Context of the On-going COVID-19 Pandemic

The COVID-19 pandemic began in March 2020, severely affecting traffic, and travel on NYSBA bridges and across the world. While the impacts are still ongoing, there is insight as to when



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

and how the reopening process will occur. This section highlights the impacts of the COVID-19 pandemic as background information for evaluating the NYSBA traffic and revenue forecasts. As was the case nationally and throughout New York State, traffic declined significantly after the state's declaration to stay at home in March 2020. It should be noted that for many facilities across the country, Stantec is seeing PM peak traffic volumes further ahead in recovery than AM peak volumes. The effect on NYSBA traffic was discussed in Section 2.2.

3.2.1 Phased Reopening

New York State had a very defined, phased reopening process, creating ten regions for this process. Two of these regions are most relevant for NYSBA facilities which directly serve four counties in the Mid-Hudson region (Ulster, Putnam, Dutchess and Orange) and two counties in the Capital District (Columbia and Greene). Each region monitored key metrics related to hospitalizations, available beds, deaths, testing, and contact tracing resources before advancing to the next phase, with a minimum period of two weeks between phases. Table 14 illustrates the timing of the reopening process. It should be noted that the two regions served by NYSBA had earlier re-openings than, for example, New York City.

Table 14: Phased Reopening Schedule

Region	Phase 1 Reopening	Phase 2 Reopening	Phase 3 Reopening	Phase 4 Reopening
Capital District	May 19, 2020	June 3, 2020	June 17, 2020	July 1, 2020
Mid-Hudson	May 26, 2020	June 9, 2020	June 23, 2020	July 7, 2020

3.2.2 COVID Impact on Travel

At the national level, there has been much discussion of the impact of COVID on travel, both during the pandemic and for the future. Some broad observations excerpted from a January 2021 study by U.S. DOT⁶ include:

"Most importantly, communications as a substitute to travel has been actively deployed in many areas, from telework to e-commerce, telemedicine, web-based meetings in lieu of traditional business communications, distance learning, delivery of restaurant meals and online worship services among others. As these behaviors have become more engrained, analysts are envisioning a different future than what might have been anticipated only a year ago.⁷

The COVID-19 crisis dramatically reduced the demand for transportation because the government ordered large parts of the economy to shut down and instructed a large part of the

⁶ Polzin, Steven; and Tony Choi. (2021). COVID-19's Effects on The Future of Transportation. United States Department of Transportation, Office of the Assistant Secretary for Research and Technology, accessible at <https://doi.org/10.21949/1520705>

⁷ Polzin and Choi, op cit, page 4 of 44



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

population to stay at home. Freight travel escaped the most dramatic consequences as freight remained critical to sustaining the population. Beyond mandatory shutdowns, many sporting, entertainment, business and other functions that involve large groups have remained curtailed and are scheduled to remain so well into 2021. Large swaths of the population have limited their normal activities and movements voluntarily for fear of infection and will continue to exercise caution for some time.⁸

Major developments had been underway before COVID-19 that were changing travel supply and demand. The Internet gave rise to electronic commerce and rapid growth of companies that use the Internet to provide both new services (Facebook) and conventional services in new ways (Amazon). The Internet enables new forms of communication and telework, which was a growing practice by some employers pre-COVID-19. Urbanization and the aging of the U.S. population had been moderating travel demand growth. Transportation network companies offering app-based ride-hailing, bikeshare and e-scooters were also changing travel choices. ... The COVID-19 outbreak has profoundly transformed the economy, society, and the transportation sector in the near-term. ... Analysts anticipate that some elements of the short-term responses of individuals and businesses will become permanently changed behaviors.

Segments of the population will certainly moderate behaviors because they fear the risk of contracting COVID-19. The success of vaccines and therapeutics will certainly lessen such fears but other unknown viral infections may arise. Choices to participate in certain activities and travel changes made during COVID-19 may become more pronounced and create new habits or patterns that travelers continue even when concerns of COVID-19 no longer directly influence their decisions. New habits could include higher auto use as households buy additional vehicles and changes in travel destinations as the pandemic has motivated home, work and other activity location changes for some.

Some of these changes are likely to affect travel long-term. The most apparent of these is the adaption of communications as a substitute for travel. Remote working and shopping are trends that the crisis has dramatically accelerated but it is still speculative to gauge at what level they will settle once the threat of infection recedes. Analysts are speculating whether the 5.7 percent share of individuals who reported in the 2019 American Community Survey as usually working at home the week prior to their survey in 2019 will be exceeded by a few percentage points or as much as 10 to 20 points higher after the health crisis passes.⁹ This is shown as "The big unknown" in the graph below.¹⁰

⁸ Polzin and Choi, op cit, page 7 of 44

⁹ Polzin and Choi, op cit, page 9 of 44

¹⁰ Polzin and Choi, op cit, page 10 of 44

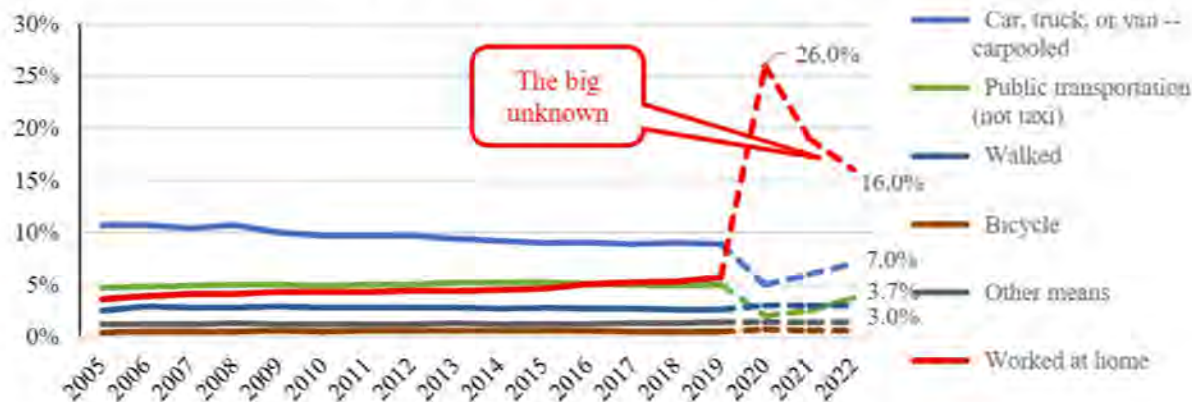


NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

Figure 24: “Usual” Means of Commuting



Source: ACS Commute data with post-Covid future scenario

Communications substitution for travel also influences business travel. Conferences, sales calls, client/customer meetings and other interactions are being replaced by remote communications. The pandemic has rapidly enhanced how well individuals and institutions can function differently, learn new software, deploy and understand new communication technologies, work through learning curves and adjust to less travel. Preference surveys of various consumers suggest this new behavior will continue in full measure. The Wall Street Journal reported on November 15, 2020 that according to a recent survey conducted by McKinsey & Co., 75% of American consumers tried a new shopping method due to the coronavirus, and 50% of respondents said they intended to shop via curbside pickup and/or delivery services in the future.¹¹

While the economic recovery time frame and its impact on travel remain uncertain, travel demand may remain dampened for an extended period of time. The great recession only reduced vehicle miles of travel by a few percent yet the peak vehicle miles of travel level reached in 2007 was not exceeded until 2015, eight years later, well into the economic recovery. Given slower population growth and a growing shift toward an information economy, VMT is less directly tied to economic activity levels and may recover more slowly from downturns than it used to. ... [W]e may well see an extended period of adjustment and recovery, especially for some segments of the transportation sector. It remains unclear how long the public health crisis will dampen overall transportation demand. Travel demand has been growing slowly, and 2019 is likely to mark the peak year of travel demand for many modes.¹²

On the other hand, it should be noted that roadway travel has proven to be the most resilient as it is least affected by fear of contagion. It has recovered from a peak decline during the

¹¹ Polzin and Choi, op cit, page 11 of 44

¹² Polzin and Choi, op cit, PDF page 12 of 44



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

shutdown of over 40 percent for several weeks to being within 10 percent of pre-pandemic levels during the fall of 2020. Personal vehicle travel offers travelers the ability to control exposure during travel and also avoids traversing terminals where crowds, lines, and check-in/payment interactions introduce exposure risk. However, future personal VMT levels post-pandemic will continue to be shaped by competition from other modes, increased teleworking, and other economic stressors.

While personal VMT has recovered far more rapidly than has demand for shared mode travel, the magnitude of change is sufficiently large to meaningfully change the performance of the roadway transportation system. The importance of changes in personal VMT become most relevant as changes persist after the direct influence of the pandemic has passed. Residual effects on personal travel may persist due to several factors.

The magnitude of the respective factors will determine post-pandemic VMT levels. For perspective, work commuting constitutes nearly 30 percent of household travel and approximately 20 percent of total roadway VMT (inclusive of freight, commercial vehicle and business travel). If telework reduces commuting by 10 percent, this would dampen overall VMT by approximately two percent in the absence of offsetting additional travel. While these are modest numbers, recognizing that VMT has been growing at less than one percent annually in spite of a very strong economy, it does support estimates of soft VMT extending well into the future. Communication substitution for other activities such as shopping, personal business, worship, and education, etc. would enhance this softening of demand on total VMT.¹³

3.2.3 Rating Agency Review of COVID

Rating agencies have been closely monitoring the pandemic's impacts on toll agency traffic and revenue, consistently finding the toll road sector more resilient than airports. Fitch Ratings, for example, noted in its most recent US Toll Outlook in April 2021¹⁴ that:

- Toll road traffic levels are still robust, though 4Q'20 data shows the first time since the start of the pandemic that most Fitch-rated toll roads did not significantly outperform its projections. Fitch's latest traffic monitor shows seven toll roads outperforming Fitch's expectations, eight others on course, and six with falling traffic levels.
- The drop-off, however, may be short lived with toll road traffic recovery set to accelerate this spring thanks to increasing vaccination rates, warming weather and monetary and fiscal stimulus poised to boost economic output.

In December 2020, Moody's Investor Service announced that "The 2021 outlook for the US toll road sector has been revised to stable from negative based on the expectation for steady tolled traffic and revenue (T&R) growth. The change in outlook reflects forecast GDP growth of 4.2%

¹³ Polzin and Choi, op cit, pages 21-22 of 44

¹⁴ <https://www.fitchratings.com/research/us-public-finance/us-airport-toll-road-traffic-slowly-returning-to-normal-27-04-2021>



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

and an unemployment rate of 6.0% as the US economy steadily recovers from pandemic-induced disruptions next year. Restrictions implemented to curb the initial outbreak of COVID-19 sharply reduced traffic on toll roads in April 2020, with steady improvement since about mid-October. Commercial traffic has largely rebounded and will provide revenue stability until passenger traffic recovers more by the second half of 2021. [In addition,] Strong liquidity, along with consistent toll increases, help mitigate COVID-related revenue losses.¹⁵

3.2.4 Return to Workplace Survey Results

On a more local level, though NYSBA does not serve New York City directly, New York City's experience may offer an indication of how upstate locations will be affected in terms of employees returning to the workplace instead of working remotely from home. Some recent information reported:

- Results from a survey of major employers by the Partnership for New York City released in March 2021 found that only 10% of Manhattan office employees have returned to the workplace but almost 50% are expected back by September, at least part time, as vaccination availability continues to increase.¹⁶
- A March 2021 report by NYC Dept of Planning¹⁷ noted that by May 2020, traffic volumes had recovered to about 50 percent compared to the 2019 average. By June, bridge and tunnel traffic at MTA crossings edged close to pre-pandemic levels, with volumes of about 90 percent of normal. Patterns themselves remained atypical; daytime volumes were higher, but evening traffic was minimal, indicative of fewer entertainment and nightlife-oriented visits.
- As the pandemic is brought under control, New Yorkers will ultimately embrace working, socializing, learning, congregating, and traveling together once again. However, all expectations suggest that remote work will play a greater role in the future than it has before. This expectation aligns with findings from several national studies¹⁸ that there will be a hybrid work model in the future. As one example, a survey conducted by Rensselaer's Center for Infrastructure, Transportation and the Environment (CITE) found that 53% of respondents expect they will work from home to some extent after the pandemic. This finding, along with information on many other effects from COVID, can be found at <https://cite.rpi.edu/index.php/training-and-outreach/>. CITE advises they are continuing to collect data to measure actual vs. expected behavior as pandemic restrictions are removed.

¹⁵ <https://www.moody's.com/research/Moodys-Outlook-for-US-toll-road-sector-revised-to-stable-PBC-1255959#:~:text=Research%20Announcement%3A-Moodys%20D%20Outlook%20for%20US%20toll%20road%20sector%20revised%20to%20stable,employment%20and%20economy%20in%202021&text=The%202021%20outlook%20for%20the,says%20in%20a%20new%20report>

¹⁶ <https://pfny.org/news/return-to-office-survey-results-released-march-2021/>

¹⁷ <https://storymaps.arcgis.com/stories/9ae470177d134f7fb42dac3ed61e37ad>

¹⁸ <https://www.pwc.com/us/en/library/covid-19/us-remote-work-survey.html>

<https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2020/covid-19-and-the-future-of-work.html>



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

3.2.5 COVID Impact on Home Relocation

Stantec found limited detailed analysis or projection of impacts of COVID on the Hudson Valley region. Press coverage suggested the area benefitted from an active real estate market as people migrated from densely urban areas, benefitted from low interest rates, and had fewer constraints on residential location as a result of the increased ability to work remotely. This March 21, 2021 headline from the Times-Union is illustrative: "Record-breaking Hudson Valley real estate market pace continues." Data on real estate transactions from the New York Department of Taxation and Finance¹⁹ suggests that the reality was not as dramatic in most of the counties directly served by NYSBA. The data suggests sales were up in only Greene, Dutchess, and Ulster counties and across the six counties served by NYSBA facilities, 2020 real estate transactions increased by only 8 percent over 2019 with median price up by only 13 percent.

Stantec believes these developments in the housing market do not warrant adjustments to the 2019 traffic and revenue forecast for NYSBA facilities. Even if actual population growth exceeds the Woods & Poole forecasts utilized to develop the Stantec traffic forecast, travel demand will be largely unaffected as new residents are more likely to be remote workers than new commuters to local businesses.

3.2.6 COVID Impact on Trucking

Based on researching a number of sources and organizations, the near-term outlook for truck traffic remains strong. A number of articles have noted the impact of E-commerce in increasing business to consumer deliveries as COVID closures and working remotely have led to more goods being ordered online vs. purchased in brick-and-mortar stores. Package volume has increased significantly.

An early study of pandemic impacts showed a corresponding shift towards more local (vs. long distance) deliveries.²⁰

Table 15: Average Length of Haul Before and During Pandemic

	Percent Before Pandemic	Percent During Pandemic
Local (less than 100 miles per trip)	7.8%	18.2%
Regional (100-499 miles per trip)	31.0%	33.8%
Inter-regional (500-999 miles per trip)	28.6%	25.2%
Long-Haul (1,000+ miles per trip)	32.7%	22.7%

¹⁹ <https://www.tax.ny.gov/research/property/assess/sales/resmedian.htm>



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Economic Backdrop and Outlook for the Future

July 6, 2021

The American Trucking Association (ATA) Chief Economist Bob Costello gave a big picture overview of the freight market in a December 17, 2020 podcast with the editor of Logistics Management ²¹ as being affected by three conceptual “buckets:”

1. Consumer retail demand where e-commerce sales have soared, increasing over 20% in 2020 relative to 2019
2. Manufacturing output which had been soft but based on the latest outlook for the Industrial Production Index is trending upwards
3. Construction, including housing starts which were up 8% in 2020

A fourth factor cited by ATA as supporting continued strong truck traffic is the inventory to sales ratio which has decreased significantly, and ATA expects that rebuilding inventory will continue to drive freight traffic increases. Potentially related to this is an increase in imports accumulating in U.S. ports which then need to be shipped via truck to final destinations or distribution centers.

The one potential constraint ATA noted is drivers; a recent article noted over 45,000 truck drivers no longer driving²² due to the national Commercial Driver’s License Alcohol and Drug Clearinghouse established in January 2020 and it being difficult to train new drivers because of the pandemic.

Transport Topics reported in December 2020 that trucking would face a transitional year in 2021, with Alex Scott, assistant professor of supply chain management at Michigan State University, not foreseeing a return to normal for a while. He noted it will be at least six months until the transportation market is not being largely affected by the pandemic. He also noted that in some cases there may be a permanent shift.²³

²⁰ [COVID-19 IMPACTS ON THE TRUCKING INDUSTRY April 2020 Prepared by The American Transportation Research Institute and The OOIDA Foundation](#)

²¹ https://www.logisticsmgmt.com/podcast/talking_trucking_with_bob_costello_chief_economist_for_the_american_trucking/podcast#

²² <https://www.overdriveonline.com/regulations/article/15042924/thousands-of-drivers-with-drug-violations-may-leave-trucking>

²³ <https://www.ttnews.com/articles/trucking-faces-transitional-year-2021>



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates
July 6, 2021

4.0 Traffic and Revenue Estimates

As part of the 2019 Traffic Study, Stantec developed a traffic and revenue model that considers annual growth by vehicle class and forecasted trends in payment type, as well as customer reaction due to changes in toll rate and the conversion from the collection of cash tolls to All-Electronic Tolling.

To estimate the impacts of the ongoing COVID-19 pandemic and the modified timeline for AET conversion by bridge, Stantec updated the forecasting tools to consider monthly detail through 2022. Stantec developed an updated Pro-Forma 2019 Forecast to show what traffic might have looked like had the pandemic not occurred and used this as the basis for estimating the “recovery” of traffic and revenue.

Using historical monthly traffic trends, Stantec converted the Pro-Forma annual forecasts for 2020, 2021 and 2022 to monthly forecasts, and compared these with actual traffic and revenue through March 2021. Using these comparisons to estimate impacts of the pandemic over time and recovery tracks through March 2021, Stantec estimated three potential recovery tracks over the short term as well as where these potential recovery tracks might stabilize in the long term.

This chapter discusses the toll increase assumptions, an overview of the methodology adopted to model the toll increase, discussion of the phased implementation of AET on Authority bridges, the assumptions for traffic recovery from the pandemic and the toll transaction and revenue forecasts generated under each scenario.

4.1 Toll Changes and Estimated Effects on Traffic and Revenue

To provide the revenues necessary to fund the Authority's capital program, the Authority adopted a toll rate increase plan to be phased in over a four-year period, commencing May 1st of 2020 and continuing in May 2021, 2022 and 2023. The adopted toll rates for the Authority's bridges were shown previously in Table 2 (page 2.13).

The model assumed that there would be some driver reaction to a toll increase. With increases in tolls, it can be expected that there will be some loss in traffic, due to carpooling, consolidation of trips and minimal switches in travel modes. Population and employment centers and other trip origins and destinations are generally widely scattered within the Authority's service area, and, therefore, they are not suited to effective trans-river public transportation. This leaves both commuters and infrequent users of the Authority's bridges little choice in changing travel modes, except for carpooling or not making the trip at all.

It is important to note that, despite the toll increase, the Authority's crossing charges are substantially lower than the Thruway Authority's Governor Mario M. Cuomo Bridge and the Port



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates

July 6, 2021

Authority's bridges and tunnels as shown previously in Table 3, especially for trucks. For this reason, we expect low sensitivity to the toll increase.

In addition to toll increases in 2021 and 2022, the modeling process also adjusts for the conversion from cash toll collection to AET. The planned conversion timing varies by bridge, as shown in Table 16, below. It was assumed that there would be a shift in payment choice with the implementation of AET, resulting in a five percent increase in car E-ZPass market share and a two percent increase in truck E-ZPass share with the implementation of AET, along with an adjustment in video toll (formerly cash) vehicle demand of negative two percent for cars and negative one percent for trucks. In other words, we assumed that the conversion to AET would cause some additional diversion of current cash-paying vehicles, as well as a larger one-time shift from video toll (currently cash) payment to E-ZPass payment.

Table 16: AET Implementation Dates

Bridge	Planned AET Conversion
Newburgh Beacon Bridge	July 1, 2021
Bear Mountain Bridge	October 1, 2021
Rip Van Winkle Bridge	November 1, 2021
Kingston Rhinecliff Bridge	December 1, 2021
Mid Hudson Bridge	March 1, 2022

With all-electronic tolling, tolls from some portion of video transactions will not be collectable due to various reasons including low quality images, lack of or incorrect registered vehicle owner address, and customer failure to pay late invoices. Based on Stantec's experience, it was assumed that 45 percent of video transactions would not be collectable. It was also assumed that with the conversion to AET, there would be approximately three months delay in the collection of video tolls to allow for invoicing and payment.

4.2 Modeling Methodology

As mentioned earlier, a two-step approach was adopted to create the traffic and revenue forecasts. This section discusses this approach in detail and the various assumptions at each step, including base assumptions for the Pro-Forma forecasts, impact of the updated AET implementation schedule and the rate of traffic recovery in near- and long-term future.

4.2.1 Pro-Forma Forecast

For the first step of analysis, an existing spreadsheet-based model built for the Authority bridges as part of the 2019 Traffic Study was used as the foundation. This model is capable of analyzing



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates

July 6, 2021

each of the Authority's five bridges individually. The model is built upon a base of historical transaction data separated by vehicle class and payment type and allows for flexibility in modeling assumptions related to future traffic shares and trends, including traffic growth by class, facility & payment type, toll rate modifications, alternative toll collection systems such as AET, and customized reactions to modifications by facility over the forecast term. This model was used in the 2019 Traffic Study to estimate the traffic and revenue for the Authority bridges for a 17-year period from 2019 to 2035. This forecast incorporated the impact of annual toll increases over a four-year period beginning in May 2020 and a conversion from cash payment to AET system on all bridges from January 1, 2021. However, the AET implementation schedule has since been revised to occur in phases beginning on July 1, 2021 and the previous forecast needed to be adjusted for this phased conversion to create a representative base forecast can be used as a baseline for comparison when estimating the changes related to post-pandemic recovery. Table 16 (page 4.48) presented the planned AET implementation schedule.

Besides the timing of AET conversion, the spreadsheet-based model also includes assumptions for background traffic growth, toll elasticity (traffic-response to toll increase), natural and induced shifts in E-ZPass market share over time as well as E-ZPass usage frequency. These assumptions are discussed in detail in the following sections. Note that these baseline assumptions from the 2019 Traffic Study were reviewed and retained within the new Pro-Forma model without any additional updates deemed necessary.

4.2.1.1 Annual Traffic Growth by Bridge

The historical year-over-year change in traffic between year 2010 and 2018 was reviewed for each bridge, by vehicle type. The historical growth by facility and vehicle type were discussed in Section 2.1.1 of this report.

Based on a combination of historical trends and socioeconomic factors, it is estimated that the Authority's facilities will experience generally low growth over the forecast period. While many of the Authority's bridges have seen growth in recent years, it was conservatively forecasted that volumes would level out in the near future. It was also observed that truck volumes on the Newburgh-Beacon Bridge, which account for a large percentage of Authority revenues, have been trending downward. It was assumed that this trend would have continued into 2019 before flattening out.

Figure 25 shows the recent and future growth assumptions for cars and trucks under the current toll scenario.

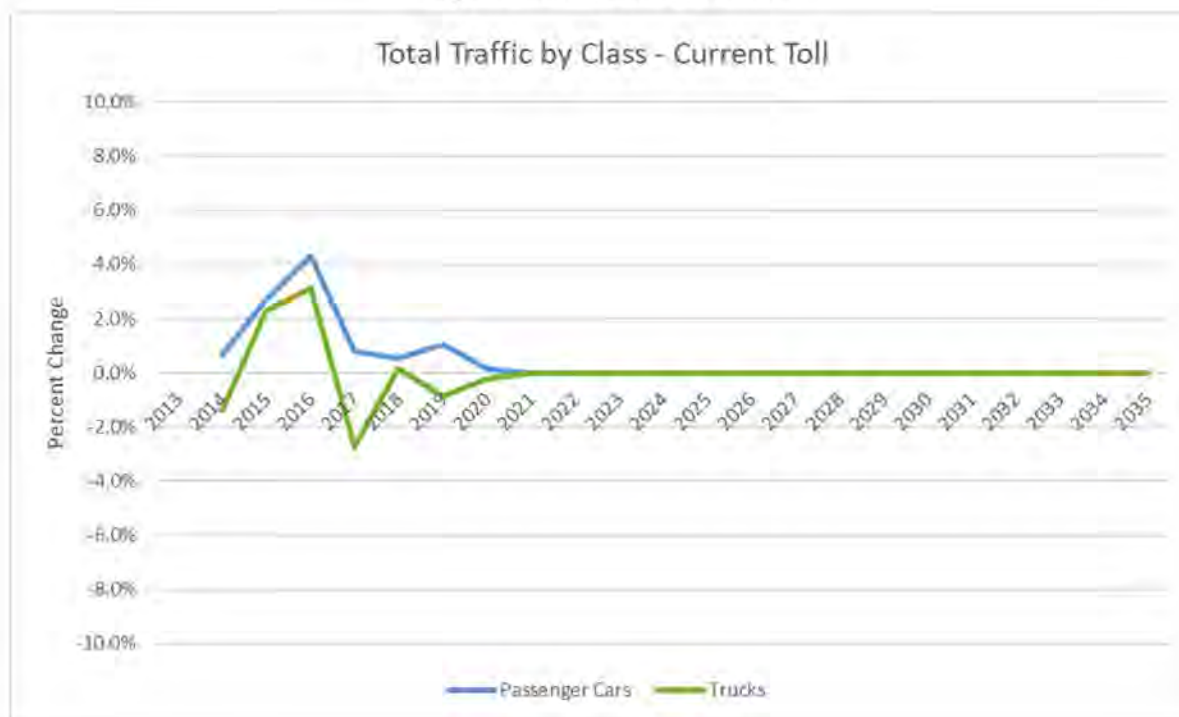


NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates

July 6, 2021

Figure 25: Traffic Growth



4.2.1.2 Electronic Payment Market Share

A discussion of recent trends in E-ZPass market share was presented in Section 2.3. E-ZPass market share typically increases gradually over time, slowing in growth as it reaches higher levels of market saturation. However, beginning in 2016, E-ZPass has been growing somewhat higher than previous growth, which coincides with the conversion of numerous regional toll facilities to all-electronic tolling, as discussed previously in Sections 1.2 and 2.3 of this report.

Figure 26 and Figure 27 present recent and forecasted E-ZPass market share by facility for cars and trucks.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates

July 6, 2021

Figure 26: E-ZPass Market Share Assumptions - Cars

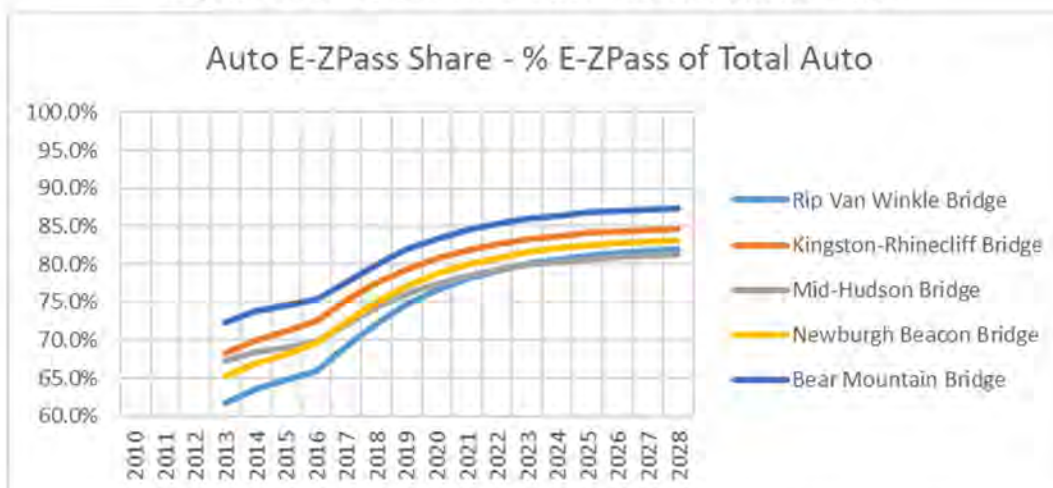
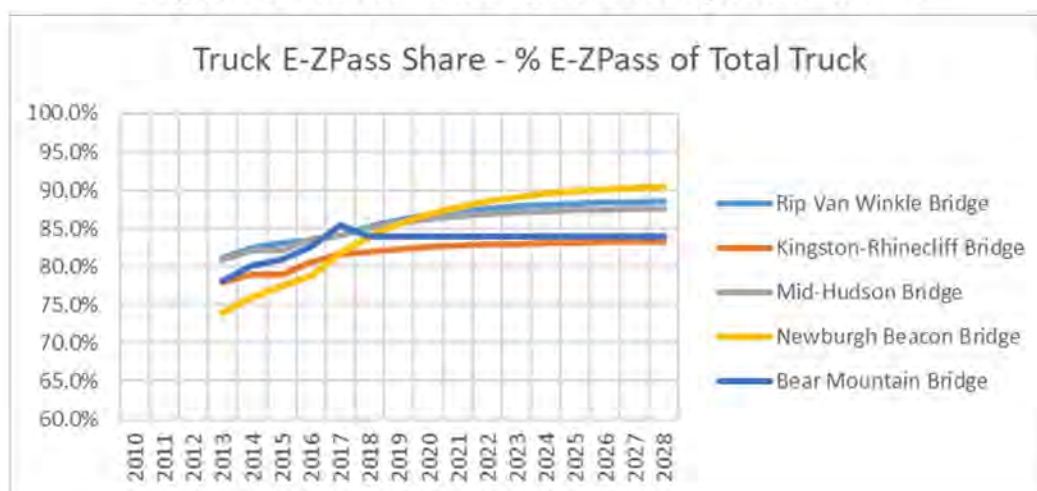


Figure 27: E-ZPass Market Share Assumptions - Trucks



4.2.1.3 Toll Elasticity

As tolls increase, traffic tends to decrease. The ratio of change in tolls against resulting change in traffic volumes is referred to as elasticity. Stantec reviewed the historical transactions data to assess the impact of the most recent toll increase on the traffic on each of the Authority bridges. For this purpose, the transaction data for a 12-month period before and after January 2012 was analyzed. Contrarily, it was observed that several vehicle classes showed an increase in transactions even after the tolls were increased, possibly a result of recovery from decreased traffic in 2011, as discussed in Section 2.1. Recent traffic volumes around the May 2, 2020 toll increase are not applicable for this type of analysis due to the extraordinary circumstances surrounding travel during the ongoing COVID-19 Pandemic.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates

July 6, 2021

A prior 2012 Stantec study developed toll elasticity values based on the data from the toll increase in the year 2000. These values were compared to elasticity assumptions from other Stantec studies in the region and determined to be reasonable. Table 17 presents the toll elasticity values adopted for this analysis.

Table 17: Toll Elasticity Assumptions

Vehicle Class	Elasticity
Passenger Cars	
Cash	(0.035)
E-ZPass	(0.035)
Commuter	(0.105)
Trucks and Buses	
E-ZPass	(0.010)
Cash	(0.010)

4.2.1.4 E-ZPass Usage Frequency

It was assumed for this analysis that the number of prepaid trips required for the commuter plan would continue to be 17 for the proposed toll schedule. Additionally, we assumed that there would be no significant changes to drivers' frequency of travel on the NYSBA bridges.

To be conservative, it was assumed that the amount of revenue generated by unused commuter toll credits would decrease by 50 percent effective beginning at the time of the proposed toll increase and remain at that decreased level for the life of the forecast.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates

July 6, 2021

4.2.2 Traffic and Revenue Pandemic Recovery Assumptions

In the second step of the analysis, the updated Pro-Forma forecast was adjusted further to reflect various assumptions of a "new-normal" condition and the rate at which it might be attained. Three scenarios of recovery were analyzed – a robust recovery scenario which assumes a quick recovery of traffic and revenue to pre-pandemic levels; a moderate recovery scenario which assumes a medium rate of recovery; and a slower recovery scenario which assumes an extended recovery period.

The following sections describe the assumptions for near- and long-term recovery under the three recovery scenarios analyzed in this study.

4.2.2.1 Near-Term Recovery Assumptions

The recovery assumptions for each of the scenarios were driven by a thorough review of the most recent traffic and revenue data for each bridge, based on monthly data provided by the Authority. The detailed traffic data from January 2015 through March 2021 was used for this analysis. The observed monthly data was compared to a monthly breakout of the 2020 and 2021 Pro-Forma forecasts, separated by vehicle type and bridge, to identify recovery trends observed since the peak of the pandemic in April 2020. These trends serve as indicators of potential near-term traffic trends.

Figure 28 presents a comparison of actual traffic by month over the course of the past year versus estimated monthly volumes had the pandemic not occurred (estimated by splitting the Pro-Forma forecast out to a monthly level based on historical seasonal traffic trends). The black lines illustrate the estimated percent traffic impact by month to date (solid for cars, dashed for trucks), whereas the colored lines represent a range of potential traffic recovery trends through the end of 2022.

As shown in Figure 28, the total car transactions on the Authority bridges dropped by more than 50 percent in April 2020 compared to the Pro-Forma estimates for the month. While they recovered steadily through September, the car transactions decreased slightly towards the end of the year, consistent with reduced work-related travel during the holiday season. In 2021, car traffic appears to be gradually increasing again, except for February 2021 when inclement weather conditions severely impacted the traffic on all bridges.

Trucks, contrary to car trends, appear to be recovering comparatively better than cars. After dipping steeply at the peak of the pandemic, they quickly recovered to levels higher than the monthly Pro-Forma estimates for 2020. In 2021, the latest data through March indicate a strong growth in truck traffic, peaking at more than 10 percent higher than the Pro-Forma estimate in March 2021. This increase is in line with truck activity being seen across the country during the pandemic. There is not yet sufficient data to say whether this trend of elevated truck traffic will continue, though the elevated volumes can likely be attributed to changes in shipping and distribution patterns related to online shopping, as well as less efficient packaging to speed up



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

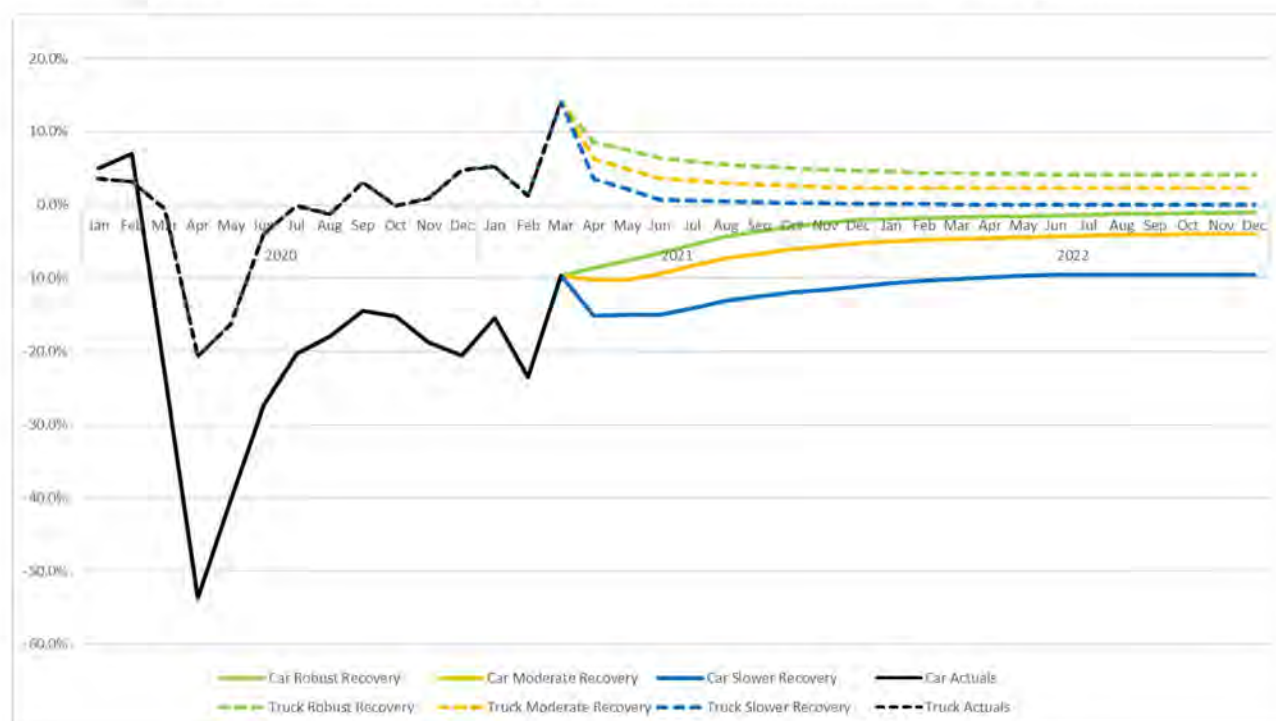
Traffic and Revenue Estimates

July 6, 2021

delivery times. For the purpose of this forecast, it is assumed that truck volumes will trend back toward the Pro-Forma levels at lower sustained growth rates in the long term.

Figure 29 illustrates similar trends for the total revenue from the bridge system. Unlike transactions, which recovered steadily after the peak of the pandemic, revenue showed a more erratic trend. Some elements of revenue reported can be impacted by delays in settlement of certain types of toll payments, including commuter tolls and permit fees. A general trend can be inferred amongst these fluctuations.

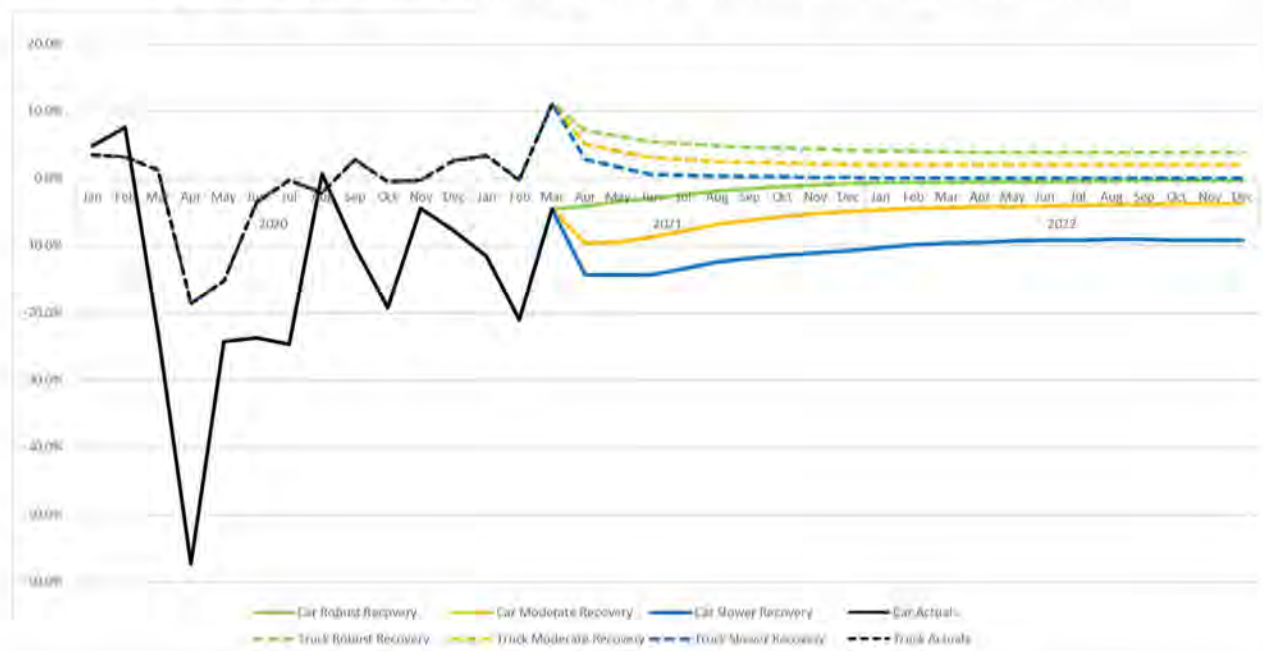
Figure 28: Near-Term Recovery Path for Transactions under Each Scenario



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates
July 6, 2021

Figure 29: Near-Term Recovery Path for Revenue under Each Scenario



4.2.2.2 Long-Term Recovery Assumptions

Socioeconomic changes like working from home, increased delivery services, and other trends impacting travel can cause a potentially long-lasting change in the travel behavior of bridge customers, leading to an increase or decrease in trips compared to pre-pandemic levels. As such, each scenario assumes that at the end of the recovery period, the new levels of traffic and revenue would stabilize at a certain percentage higher or lower than the Pro-Forma forecasts due to permanent changes in traffic, as shown in Table 18.

Table 18: Long-Term Impact to Traffic and Revenue Compared to Pro-Forma

Vehicle Type	Robust Recovery	Moderate Recovery	Slower Recovery
Cars	0.5%	-1.0%	-3.0%
Trucks	3.0%	1.0%	0.0%

The following provides a brief explanation of the recovery scenarios:

- **Robust Recovery:** Under the robust recovery scenario, cars on all bridges are expected to stabilize at volumes 0.5 percent higher than the Pro-Forma estimates by 2024. Trucks are assumed to continue with higher volumes and stabilize at 3 percent higher than the Pro-Forma forecasts by 2024.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates

July 6, 2021

- **Moderate Recovery:** The moderate recovery scenario assumes that, car volumes will stabilize in 2025 at 1 percent lower than the Pro-Forma estimates while trucks will stabilize at 1 percent higher than Pro-Forma levels, also by 2025.
- **Slower Recovery:** The slower recovery scenario assumes that traffic will take until 2025 to reach a “new normal”, with cars stabilizing at 3 percent lower than the Pro-Forma forecasts and trucks returning to the same levels as the Pro-Forma estimates.

The comparatively stronger and faster recovery of trucks than cars is supported by the generally increased truck activity being seen in the region, and, nationwide, as freight and delivery services have grown exponentially during the pandemic and are expected to remain higher than pre-pandemic levels.

The recovery paths of traffic and revenue under each set of scenario assumptions are presented in the following figures. The potential recovery path and the full recovery levels relative to Pro-Forma forecasts assumed for car traffic under each scenario is shown in Figure 30. Each line represents a combination of the assumptions described above, where each scenario follows a different assumed rate of recovery to reach the respective post-pandemic target traffic at the end of the recovery period.

Figure 31 shows the estimated recovery trend of systemwide truck traffic from 2021 through 2035. The peaking of truck traffic in 2021 is consistent with observed data where truck traffic was observed to be high in the latest month of March 2021. However, due to limited data availability, it is unclear if this is the beginning of an upward trend or an outlier due to localized, seasonal activity in the region. Nonetheless, the truck traffic trends down slowly towards the “new normal” targets as defined in Table 18.

Figure 32 and Figure 33 show similar trend lines for the total revenue from the five bridges in the system.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates
July 6, 2021

Figure 30: Recovery of Car Traffic Compared to Proforma Forecast

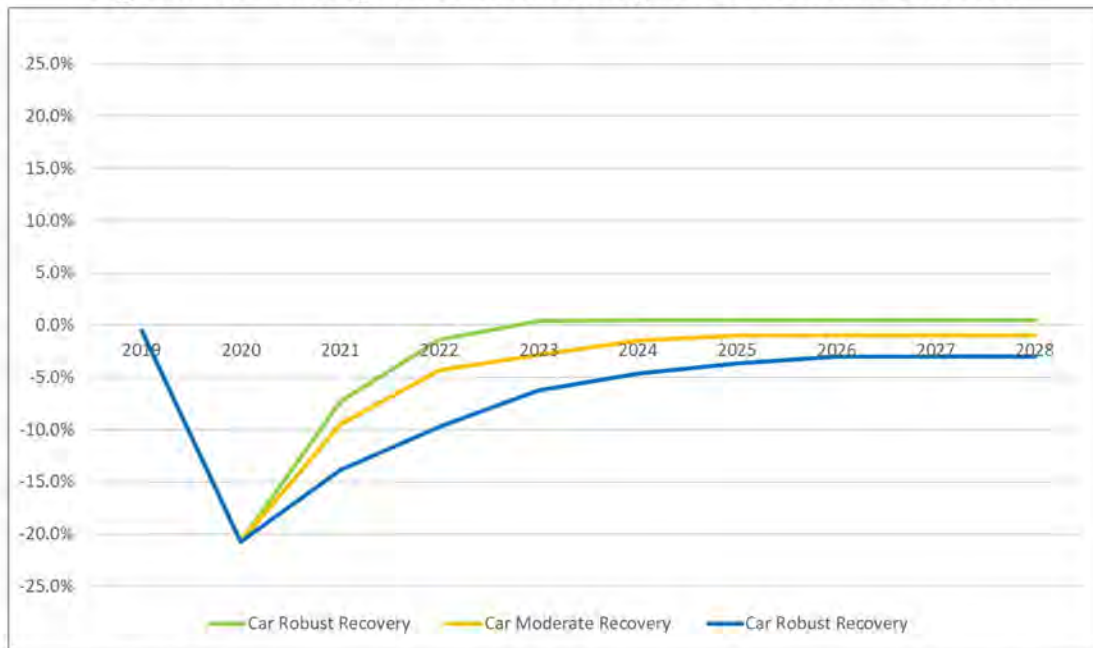
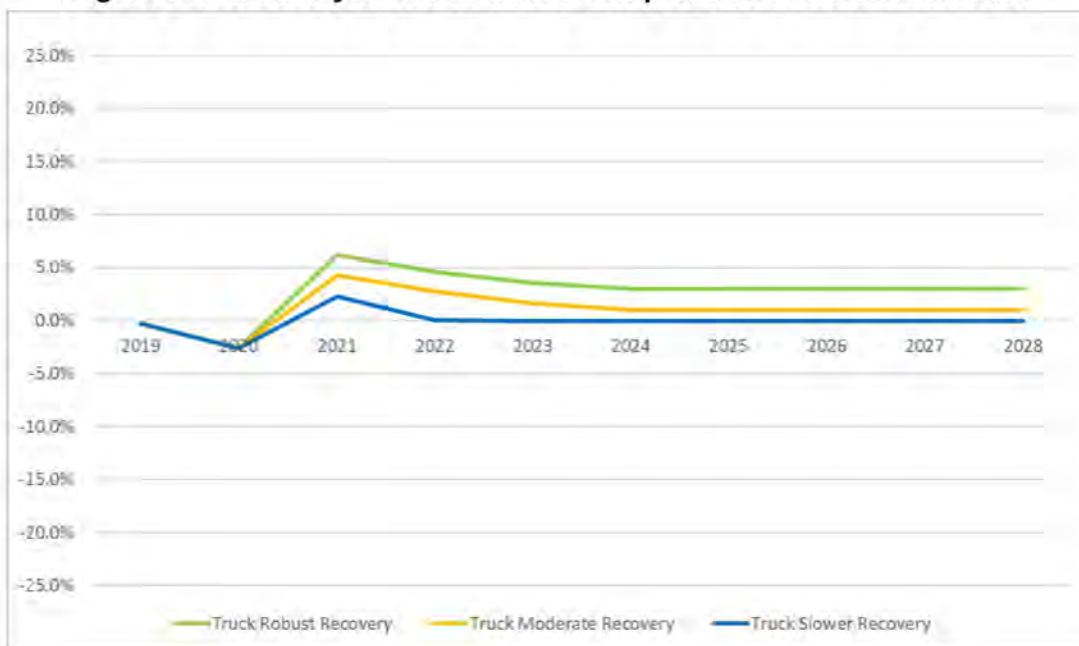


Figure 31: Recovery of Truck Traffic Compared to Proforma Forecast



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates
July 6, 2021

Figure 32: Recovery of Car Revenue Compared to Proforma Forecast

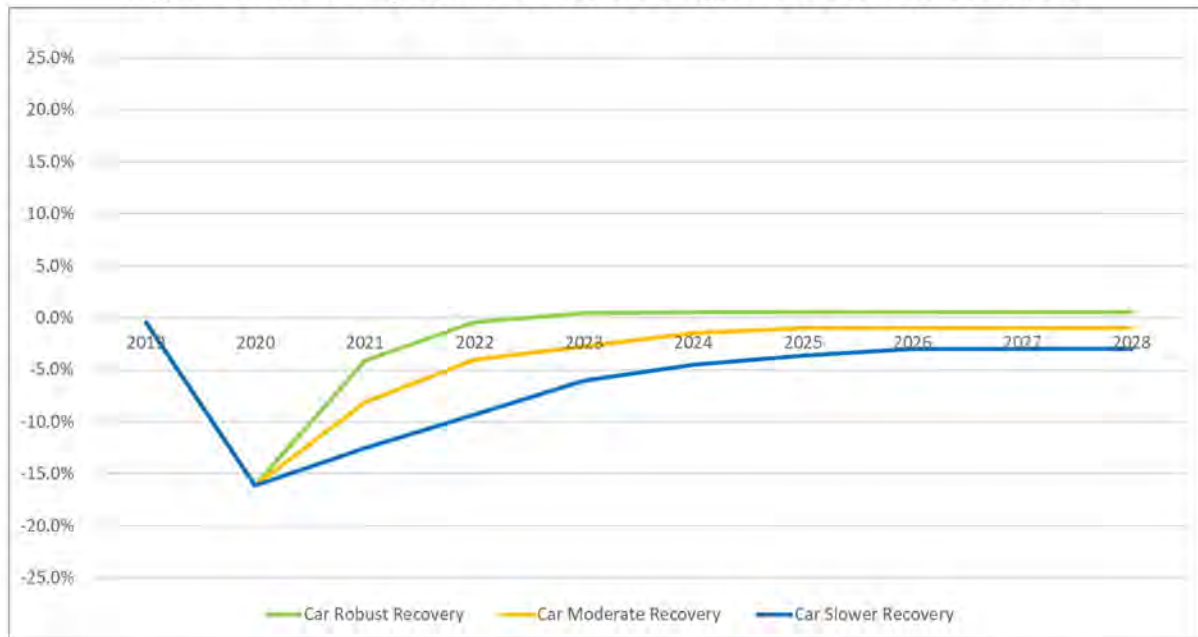
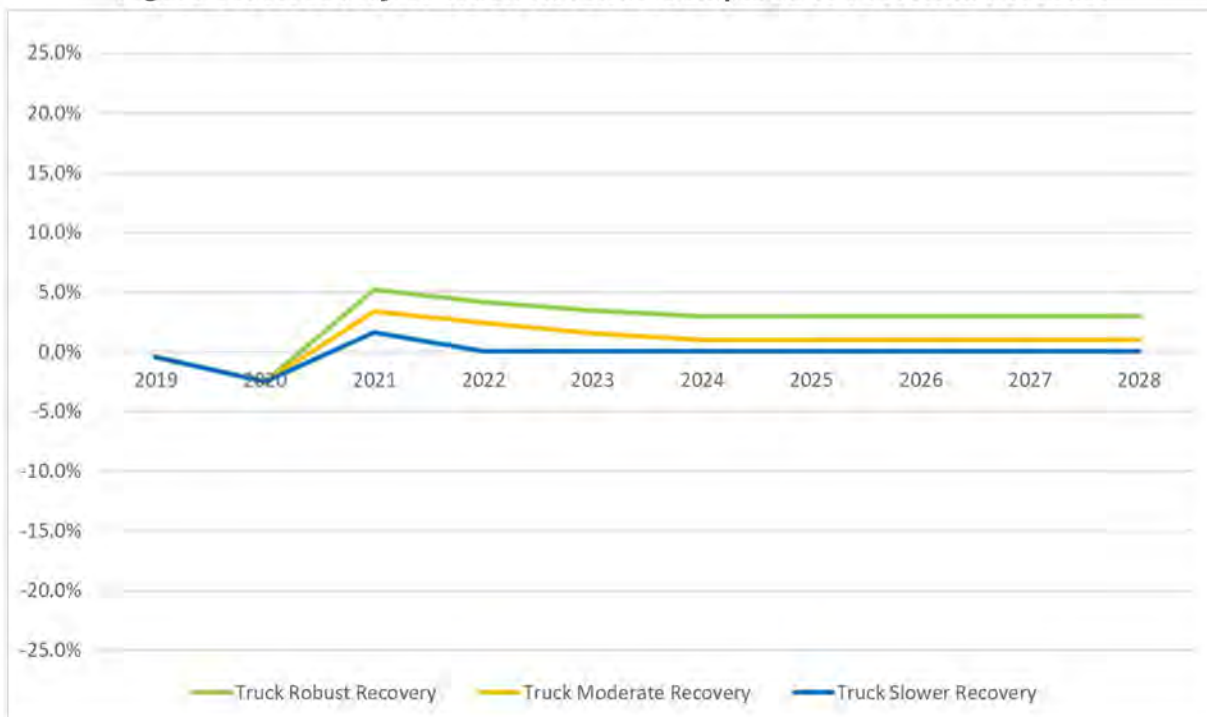


Figure 33: Recovery of Truck Revenue Compared to Proforma Forecast



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates

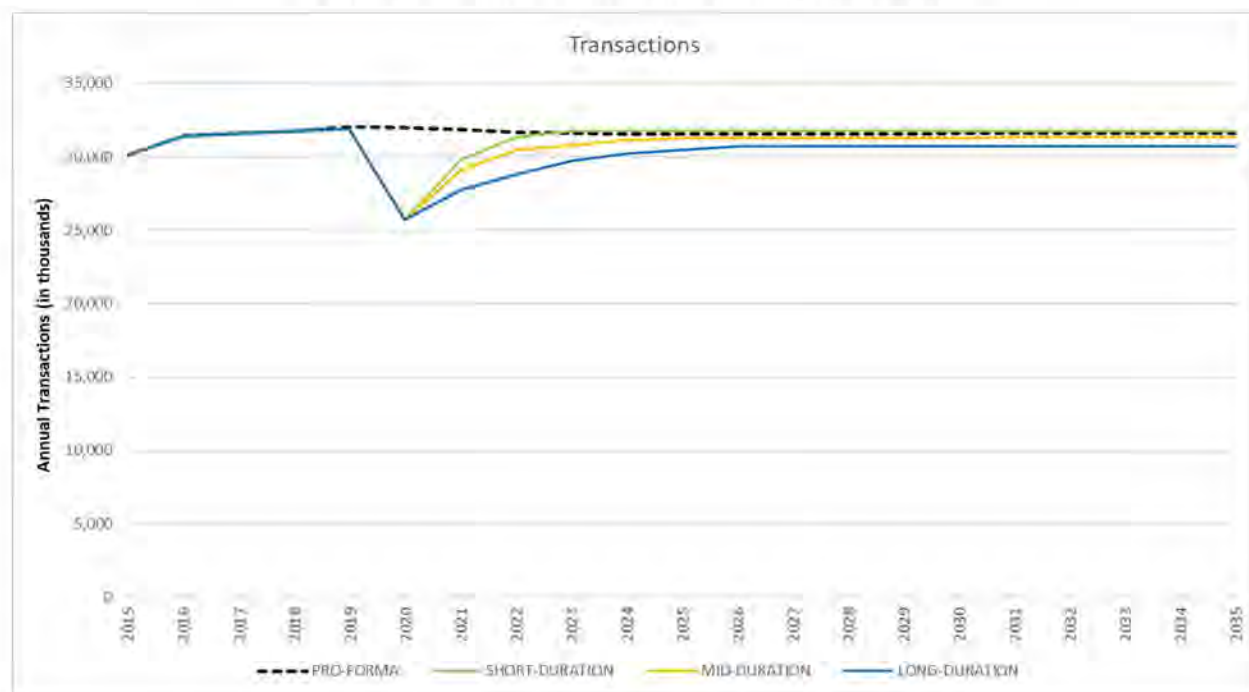
July 6, 2021

4.3 Traffic and Revenue Estimates

This section presents the traffic and revenue forecasts prepared for each of the three scenarios described in the previous section. The forecasts assume a toll increase every year between 2020 and 2023, and account for the impact of a staggered AET implementation schedule across all Authority bridges.

Figure 34 presents the annual, systemwide traffic forecast for each scenario, along with the Pro-Forma forecast values. The values shown for 2015 to 2020 are actual, observed transactions. The Pro-Forma line represents the trend of estimates under pre-pandemic conditions, but including toll increases and AET implementation. For the majority of the forecast period, traffic under each scenario is estimated to remain flat once recovery period is complete. The robust recovery transactions are estimated to be nearly equal to the Pro-Forma forecasts while the moderate and slower recovery forecasts are estimated to stabilize at a slightly lower level.

Figure 34: Transaction Forecast by Scenario



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

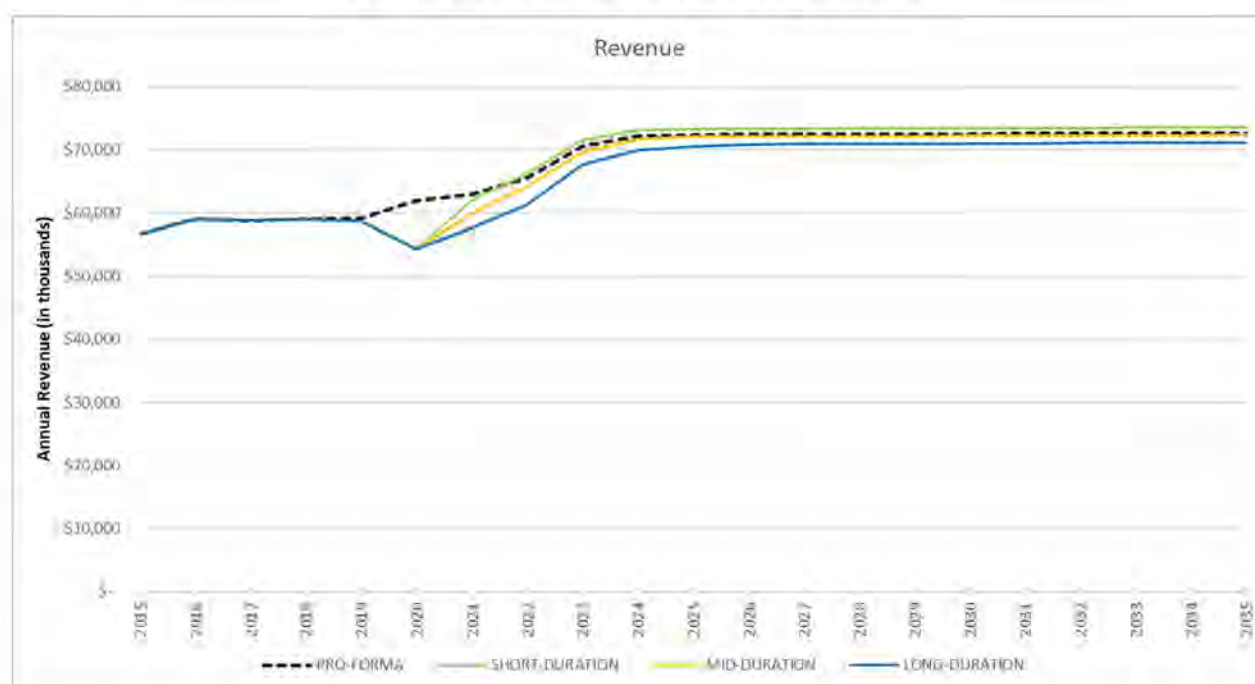
Traffic and Revenue Estimates

July 6, 2021

Figure 35 illustrates the trend of revenue forecast for the Authority bridges under each scenario analyzed along with the Pro-Forma estimate. The Pro-Forma forecast shows the revenue impact of the series of annual toll increases through 2023 and the phased AET implementation under pre-pandemic conditions. With the scenario-specific assumptions for recovery from pandemic, the robust recovery forecast is estimated to generate slightly higher revenue than the Pro-Forma while the other two scenarios are estimated to generate slightly lower revenue.

As toll collection shifts from cash collection in the lane to video toll collection and issuing invoices, it is expected that there will be some delay in payment associated with video tolls. It was assumed that there would be a lag of three months from the time of travel to the time that video toll payment would be received, to allow for invoicing and payment. Additionally, it is more difficult to collect tolls from video customers. Based on our experience on other toll facilities, it was assumed that 45 percent of video toll revenues would be uncollectable.

Figure 35: Revenue Forecast by Scenario



The traffic and revenue forecasts for each of the scenarios are shown below in a tabular format. From Stantec's experience on other tolled facilities across the country the actual recovery along the facilities has been trending most closely with our moderate recovery assumptions. Therefore, the detailed revenue streams to support the bond sale were prepared based on the moderate recovery forecast and are presented in Section 6.0.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates

July 6, 2021

Table 19: Traffic and Revenue Forecast, Slower Recovery Scenario

Year	Annual Toll Transactions (000s)	Annual Revenue (000s) (2)	Average Toll
2018 (1)	31,763	\$59,020	\$1.86
2019 (1)	31,908	\$58,969	\$1.85
2020 (1)	25,700	\$54,591	\$2.12
2021	27,749	\$57,700	\$2.08
2022	28,784	\$61,300	\$2.13
2023	29,742	\$67,600	\$2.27
2024	30,202	\$69,900	\$2.31
2025	30,495	\$70,500	\$2.31
2026	30,691	\$70,800	\$2.31
2027	30,692	\$70,900	\$2.31
2028	30,693	\$70,900	\$2.31
2029	30,694	\$70,900	\$2.31
2030	30,695	\$70,900	\$2.31
2031	30,696	\$71,000	\$2.31
2032	30,697	\$71,000	\$2.31
2033	30,697	\$71,000	\$2.31
2034	30,698	\$71,000	\$2.31
2035	30,699	\$71,100	\$2.32

Notes: (1) Actual
(2) Collectable Toll Revenue



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates
July 6, 2021

Table 20: Traffic and Revenue Forecast, Moderate Recovery Scenario

Year	Annual Toll Transactions (000s)	Annual Revenue (000s) (2)	Average Toll
2018 (1)	31,763	\$59,020	\$1.86
2019 (1)	31,908	\$58,969	\$1.85
2020 (1)	25,700	\$54,591	\$2.12
2021	29,103	\$59,900	\$2.06
2022	30,447	\$64,100	\$2.11
2023	30,789	\$69,600	\$2.26
2024	31,151	\$71,700	\$2.30
2025	31,303	\$72,000	\$2.30
2026	31,304	\$72,000	\$2.30
2027	31,306	\$72,100	\$2.30
2028	31,306	\$72,100	\$2.30
2029	31,307	\$72,100	\$2.30
2030	31,308	\$72,200	\$2.31
2031	31,309	\$72,200	\$2.31
2032	31,310	\$72,200	\$2.31
2033	31,311	\$72,200	\$2.31
2034	31,312	\$72,300	\$2.31
2035	31,313	\$72,300	\$2.31

Notes: (1) Actual
(2) Collectable Toll Revenue



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Traffic and Revenue Estimates
July 6, 2021

Table 21: Traffic and Revenue Forecast, Robust Recovery Scenario

Year	Annual Toll Transactions (000s)	Annual Revenue (000s) (2)	Average Toll
2018 (1)	31,763	\$59,020	\$1.86
2019 (1)	31,908	\$58,969	\$1.85
2020 (1)	25,700	\$54,591	\$2.12
2021	29,803	\$62,000	\$2.08
2022	31,352	\$66,100	\$2.11
2023	31,791	\$71,500	\$2.25
2024	31,784	\$73,100	\$2.30
2025	31,786	\$73,200	\$2.30
2026	31,787	\$73,200	\$2.30
2027	31,789	\$73,300	\$2.31
2028	31,789	\$73,300	\$2.31
2029	31,790	\$73,300	\$2.31
2030	31,791	\$73,400	\$2.31
2031	31,792	\$73,400	\$2.31
2032	31,793	\$73,400	\$2.31
2033	31,794	\$73,400	\$2.31
2034	31,795	\$73,500	\$2.31
2035	31,796	\$73,500	\$2.31

Notes: (1) Actual
(2) Collectable Toll Revenue



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs
July 6, 2021

5.0 Operating and Capital Costs

This section presents the estimated operating costs and capital expenses for the duration of the forecast period.

Baseline operating cost forecasts were prepared assuming similar cost growth trends to those seen in the past. As part of the 2019 Study, the Stantec Team also developed an operating cost model that estimated the conversion-related changes in operating costs (discussed in a later section). The underlying assumptions were updated to account for updated AET contract amounts, refined staffing estimates, and one-time costs such as marketing and retraining. Baseline assumptions related to the number of NYCSC E-ZPass accounts were also updated. Additionally, adjustments were added to account for the rollout of AET by bridge over the course of the next year.

5.1 Operating Expenses

Historical operating expenses are presented in Table 22 covering the period from 2008 through 2020. Operating expense items consist of salaries, employee benefits, commercial insurance and electronic toll costs. Over the 11-year period, Operating expenses have increased at an average annual rate of 1.3 percent. Operating costs increased 2.0 percent from 2018 to 2019 and 1.2 percent from 2019 to 2020.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs

July 6, 2021

Table 22: Historical Operating Expenses (In Thousands)

Year	Operating Expenses(1)
2008	\$ 23,901
2009	\$ 21,327
2010	\$ 23,177
2011	\$ 22,426
2012	\$ 23,210
2013	\$ 24,739
2014	\$ 25,089
2015	\$ 24,557
2016	\$ 24,948
2017	\$ 25,900
2018	\$ 27,007
2019	\$ 27,551
2020	\$ 27,890

Source: New York State Bridge Authority

Note: (1) Total Operating Expense per Historical Budget and Financial Plans. Estimates do not include depreciation expense, equipment cost (allowed for in Capital Projections)

Operating expenses for 2021 through 2035, as estimated by the Authority, are presented in Table 23. Estimates include an increase of approximately 14.6 percent in 2021. The Authority typically projects conservatively. These estimates account for the possibility of heavy winter expenses, and recent variations in health care and insurance costs. The Authority also anticipates higher short-term professional fees in connection with toll evaluation and preliminary preparation for capital bonding as well as higher costs associated with bridge inspections with 2021 representing a larger cost year in the inspection cycle. For the remainder of the forecasts, costs are projected to increase four percent annually, with average growth for the period 2020 through 2035 of five percent.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs
July 6, 2021

Table 23: Projected Operating Expenses (In Thousands)

Year	Operating Expenses (2)
2018 (1)	\$ 27,007
2019 (1)	\$ 27,551
2020 (1)	\$ 27,890
2021	\$ 31,959
2022	\$ 31,264
2023	\$ 32,386
2024	\$ 33,548
2025	\$ 34,890
2026	\$ 36,286
2027	\$ 37,737
2028	\$ 39,247
2029	\$ 40,817
2030	\$ 42,449
2031	\$ 44,147
2032	\$ 45,913
2033	\$ 47,750
2034	\$ 49,660
2035	\$ 51,646

Source: New York State Bridge Authority

Notes: (1) Actual

(2) Incorporates forecasted budget for 2021 through 2025 and annual increase of 4% for all other costs thereafter. Estimates do not include depreciation expense, equipment cost (allowed for in Capital Projections), postemployment benefits which began in 2007, GASB 68 that began in 2015, or mark to market on Investments that began in 2017. Does not provide for any impact as a result of all-electronic tolling.

Net Revenues available for the Authority's Capital Program include forecasted toll revenues and estimated revenues from other sources. The major component of "other revenues" is interest income which has been assumed by the Authority based on current interest rates and existing reserve balances. In addition, during 2019, "other revenues" include a one-time \$1.5 million grant to support the Empire State Trail. "Other revenues" are presented in Table 24.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs

July 6, 2021

Table 24: Projected Other Revenues (In Thousands)

Year	Other Revenues (2)
2018 (1)	\$ 2,618
2019	\$ 4,142
2020	\$ 1,938
2021	\$ 1,450
2022	\$ 1,050
2023	\$ 1,050
2024	\$ 1,050
2025	\$ 1,050
2026	\$ 1,050
2027	\$ 1,050
2028	\$ 1,050
2029	\$ 1,050
2030	\$ 1,050
2031	\$ 1,050
2032	\$ 1,050
2033	\$ 1,050
2034	\$ 1,050
2035	\$ 1,050

Source: New York State Bridge Authority

Notes: (1) Actual

(2) Estimate based on 2021 Budget and Plan for interest and miscellaneous income 2021-2024. After 2021, interest approximated at a static amount on the basis of a declining balances available to invest offset by rising interest rates. Assumes interest rates continue to be lower than levels experienced prior to 2008, revised overweight charges, advertising, and fiber leasing increase the annual miscellaneous income estimate.

5.1.1 Operating Cost Assumptions for All-Electronic Tolling

With the implementation of AET on the Authority's facilities, E-ZPass transactions would continue to be processed the same way as they are today. For all other transactions, a video image of the vehicle's license plate would be captured, and the registered owner would be billed periodically. This type of transaction may be referred to as a "video toll" although the New York Customer Service Center (NYCSC) uses the term Tolls by Mail. Thus, there are two basic groups of customers: E-ZPass customers and Tolls by Mail customers. Each group's transactions require different cost components for processing.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs

July 6, 2021

Currently there is a contractual arrangement between NYSTA and NYSBA in which NYSBA pays NYSTA for E-ZPass processing. It is assumed that, although NYSBA plans to begin contracting directly with the NYCSC when AET goes live, the cost components of the new arrangement will be similar to the existing agreement. For E-ZPass transaction processing, the bulk of the costs are based on a “usage day” formula. Each of the three major toll authorities that are part of the NYCSC (MTA B&T, NYSTA, and PANYNJ) are assigned a percentage each month and each pays the NYCSC that share of the costs, which in turn are based on a unit cost multiplied by the total number of active E-ZPass accounts during the month.

As part of the 2019 Study, the Stantec team used historical data related to NYSBA's invoices from NYSTA for NYCSC costs to develop the assumptions for future E-ZPass operating costs shown in Table 25.

Table 25: Key Assumptions for E-ZPass Operating Costs

Variable	2022 Assumption	2028 Assumption
NYSBA share of NYCSC costs	6%	6%
Number of NYCSC E-ZPass accounts	7.0 million	8.5 million
NYSBA annual credit card fees	\$67K	\$80K
NYSBA annual postage costs	\$20K	\$31K
NYSBA annual misc. costs	\$20K	\$20K

For purposes of this analysis, Stantec assumed that the majority of cash-paying customers would become Tolls by Mail customers with the implementation of AET. Under the current contract for Tolls by Mail processing, there are two broad categories of costs: Shared Costs and Direct Costs.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs

July 6, 2021

Table 26 shows 2019 contract costs for each category and cost component and the assumptions used to project future NYSBA expenses.

Table 26: Key Assumptions for Tolls by Mail Operating Costs

Tolls by Mail Cost Component	Current Cost	Assumption for AET Analysis
Shared Costs		
Fixed Monthly Fee	\$586,374 per month	Escalated at 2.5% per year
AET Customer Service Fee	\$0.58 per active Tolls by Mail account	Escalated at 2.5% per year
Toll Bill Fee	\$0.66 per bill mailed	Ratio of 0.94 bills to AET accounts. Escalated at 2.5% per year
DMV Passthrough Cost	\$107,549/month for all NYCSC	Escalated at 2.5% per year, with NYSBA share based on usage day factor
Direct Costs		
Manual Image Review	\$0.32 per set of images reviewed	Escalated at 2.5% per year
Automated Image Review	\$0.03 per set of images reviewed	Escalated at 2.5% per year
Violation Invoices Mailed	\$0.655 per invoice with no image and \$0.66 per invoice with an image	Escalated at 2.5% per year

For the purpose of developing an initial estimate for AET costs, Stantec used the following assumptions:

- NYSBA's cash traffic for 2022 is estimated to be 320,000. With AET, cash would no longer be offered as a form of payment at the toll plaza and a majority of this traffic will become Tolls by Mail transactions.
- NYSTA's Tolls by Mail traffic in 2022 will increase due to AET implementation on the mainline road segments. The December 2018 cash traffic on the mainline was 3,061,000. It was assumed that this traffic will grow, and the majority of cash transactions will become Tolls by Mail transactions.
- In December 2018, the NYCSC processed 1,957,943 Tolls by Mail transactions. After application of the usage day formula there were 1,366,086 "counts" across the agencies. Thus, every Tolls by Mail transaction resulted in an average of 0.698 "counts". Stantec applied this factor to the anticipated traffic to calculate a usage day portion effectively passed on to NYSBA through their agreement with NYSTA.
- For NYSBA's share, Stantec assumed that projected cash customers assumed to be Tolls by Mail Customers for 2022 and 2028 will go through image review, 50 percent automated and 50 percent manual.
- Unpaid Tolls by Mail invoices are sent to violations and each agency pays for the processing of their own customers' violations.
- Stantec based estimates of uncollected toll revenue on preliminary traffic projections. Stantec used the estimated toll revenue for each year and multiplied by a percent of Tolls by Mail transactions that are never collected. Other agencies' experience shows that this percentage can vary from about 30 percent to over 50 percent of Tolls by Mail transactions. Stantec assumed that 45 percent of NYSBA Tolls by Mail transactions



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs

July 6, 2021

would not be paid and assumed 16 percent collection agency fees for invoices sent to collections.

- NYSBA provided Toll Collection-related Operational Costs and they estimate that those costs can be reduced by approximately 90 percent with the implementation of AET.
- NSYBA provided estimates of Additional AET Operational Costs accounting for new positions, severance, and retraining of employees.

Based on these assumptions, Stantec developed Pro-Forma expenses with an assumed AET conversion schedule beginning in June 2021 at the Newburgh Beacon Bridge and phasing in at the other bridges by March 2022. The Stantec team projected expenses through 2035. These projections are shown in Table 27 and Table 28. It should be noted that these expenses are representative of the cost components that may fluctuate with AET which form the basis for estimating the adjustments that may be made to the Authority's operating cost estimates to reflect AET conditions.

Table 27: Comparison of Expenses with AET Conversion (In Thousands)

Year	Estimated Non-AET Costs (000s)		Estimated AET Costs (4) (000s)			AET Cost Adjustment (000s)
	Toll Processing	Labor	Toll Processing	Labor	Other Adjustments	
2018 (1)	\$ 3,837	\$ 6,397				
2019 (1)	\$ 4,161	\$ 6,567				
2020 (1)(2)	\$ 4,485	\$ 6,737				
2021 (2)(3)	\$ 4,967	\$ 6,903	\$ 7,681	\$ 5,589	\$ 1,517 (5)(6)	\$ 2,917
2022 (2)(3)	\$ 5,132	\$ 7,076	\$ 11,664	\$ 4,321		\$ 3,777
2023 (2)	\$ 5,375	\$ 7,264	\$ 11,830	\$ 4,471		\$ 3,663
2024	\$ 5,617	\$ 7,452	\$ 11,997	\$ 4,622		\$ 3,549
2025	\$ 5,860	\$ 7,641	\$ 12,164	\$ 4,772		\$ 3,435
2026	\$ 6,102	\$ 7,829	\$ 12,330	\$ 4,922		\$ 3,321
2027	\$ 6,345	\$ 8,017	\$ 12,497	\$ 5,072		\$ 3,207
2028	\$ 6,587	\$ 8,206	\$ 12,664	\$ 5,222		\$ 3,092
2029	\$ 6,830	\$ 8,394	\$ 12,830	\$ 5,372		\$ 2,978
2030	\$ 7,072	\$ 8,582	\$ 12,997	\$ 5,522		\$ 2,864
2031	\$ 7,315	\$ 8,771	\$ 13,164	\$ 5,672		\$ 2,750
2032	\$ 7,558	\$ 8,959	\$ 13,330	\$ 5,822		\$ 2,636
2033	\$ 7,800	\$ 9,147	\$ 13,497	\$ 5,972		\$ 2,522
2034	\$ 8,043	\$ 9,336	\$ 13,663	\$ 6,122		\$ 2,408
2035	\$ 8,285	\$ 9,524	\$ 13,830	\$ 6,272		\$ 2,293

Notes: (1) Actual

(2) Assumed Toll Increase May 2020, 2021, 2022 and 2023

(3) All-Electronic (AET) Conversion, Phased Implementation

(4) AET costs include E-ZPass and Tolls by Mail costs

(5) Includes \$1,117,000 in severance and retraining related costs

(6) Includes AET marketing costs of \$400,000 in 2021



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs

July 6, 2021

Table 28: Projected Operating Expenses with AET Conversion (In Thousands)

Year	Non-AET Operating Expenses (000s)	AET Cost Adjustment (2) (000s)	AET Adjusted Operating Expenses (000s)
2018 (1)	\$ 27,007	\$ -	\$ 27,007
2019 (1)	\$ 27,551	\$ -	\$ 27,551
2020 (1)	\$ 27,890	\$ -	\$ 27,890
2021	\$ 31,959	\$ 2,917	\$ 34,876
2022	\$ 31,264	\$ 3,777	\$ 35,041
2023	\$ 32,386	\$ 3,663	\$ 36,049
2024	\$ 33,548	\$ 3,549	\$ 37,097
2025	\$ 34,890	\$ 3,435	\$ 38,325
2026	\$ 36,286	\$ 3,321	\$ 39,607
2027	\$ 37,737	\$ 3,207	\$ 40,944
2028	\$ 39,247	\$ 3,092	\$ 42,339
2029	\$ 40,817	\$ 2,978	\$ 43,795
2030	\$ 42,449	\$ 2,864	\$ 45,313
2031	\$ 44,147	\$ 2,750	\$ 46,897
2032	\$ 45,913	\$ 2,636	\$ 48,549
2033	\$ 47,750	\$ 2,522	\$ 50,271
2034	\$ 49,660	\$ 2,408	\$ 52,067
2035	\$ 51,646	\$ 2,293	\$ 53,939

Notes: (1) Actual

(2) From Table 27



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs

July 6, 2021

5.2 Capital Needs Program and Cost

The Authority has maintained the five vehicular bridges in good structural and functional condition by its ongoing Capital Improvement Program. As shown in Table 29, the oldest of the Authority's bridges, the Bear Mountain Bridge, has been in operation for 97 years. The most recently built facility, the south span of the Newburgh-Beacon Bridge, is more than 40 years old. As the bridges age, the Authority schedules repairs and rehabilitation necessary to maintain them in good condition through its Capital Improvement Program.

Table 29: NYSBA Bridge Opening Dates

Bridge	Opening Year
Bear Mountain	1924
Mid-Hudson	1930
Rip Van Winkle	1935
Kingston-Rhinecliff	1957
Newburgh-Beacon North Span	1963
Newburgh-Beacon South Span	1980

The Authority's largest major costs are cyclical. The capital costs for the study period (2021-2035) are based on capital project needs for the relevant period. Included in the capital program are re-decking of the north span of the Newburgh-Beacon Bridge, the Bear Mountain Bridge, and the Mid-Hudson Bridge, systemwide painting, and suspender replacement on the Bear Mountain and Mid-Hudson Bridges, among other expenditures. The Authority Board adopts a 5-year capital program annually. That program also incorporates capital expenses related to the Authority's responsibility for maintaining the structure of the Walkway Over the Hudson Bridge including bridge inspection, steel and river pier base repairs, and miscellaneous painting.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Operating and Capital Costs

July 6, 2021

The Authority's Capital Improvement Program for the period 2021 through 2035 is shown in Table 30, as provided by the Authority.

Table 30: NYSBA Capital Improvement Program (In Thousands)

Year	Capital Plan Costs (000s) (2)
2019 (1)	\$ 18,670
2020 (1)	\$ 23,599
2021	\$ 76,751
2022	\$ 51,787
2023	\$ 12,683
2024	\$ 53,538
2025	\$ 25,848
2026	\$ 38,315
2027	\$ 37,515
2028	\$ 27,615
2029	\$ 40,805
2030	\$ 21,890
2031	\$ 24,650
2032	\$ 52,650
2033	\$ 46,650
2034	\$ 18,650
2035	\$ 53,650
15-year Total (2021-2035)	\$ 582,997

Source: New York State Bridge Authority

Note: (1) Actuals

(2) Capital Improvement Costs Based on
latest Engineering Estimate



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Net Revenue for Bond Sale

July 6, 2021

6.0 Net Revenue for Bond Sale

The gross traffic and revenue estimates under each recovery scenario were presented in Section 4.3. From Stantec's experience on other tolled facilities across the country the actual recovery along the facilities has been trending most closely with our moderate recovery assumptions. Therefore, the detailed T&R streams to support the bond sale were prepared based on the moderate recovery forecast and presented in detail in this section.

Table 31 presents our forecast of toll revenue for the moderate recovery scenario. For the majority of the forecast period, toll revenue levels are estimated to remain flat, increasing from \$59.0 million in 2018 to an estimated \$72.3 million in 2035. The table also shows additional revenue from violation fees.

Furthermore, it is typical that video invoices sent out through the New York Customer Service Center (NYCSC) charge violation fees beginning with the issuance of a second invoice (\$5 per invoice) and escalate to \$50 per invoice on the third invoice. Based on our experience on other AET facilities, it was estimated that approximately 20 percent of the video customers who pay their invoices would pay the \$5 invoice fee, and that only around 4.5 percent of settled video invoices would pay the \$50 fee.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Net Revenue for Bond Sale

July 6, 2021

Table 31: Estimated Revenue, Moderate Recovery Forecast

Year	Annual Toll Revenue (000s) (2)	Annual Violation Fee Revenue (000s)	Total Annual Toll+Fee Revenue (000s) (3)
2019 (1)	\$ 58,969	\$ -	\$ 58,969
2020 (1)	\$ 54,591	\$ -	\$ 54,591
2021	\$ 59,900	\$ 200	\$ 60,100
2022	\$ 64,100	\$ 2,000	\$ 66,100
2023	\$ 69,600	\$ 1,900	\$ 71,500
2024	\$ 71,700	\$ 1,900	\$ 73,600
2025	\$ 72,000	\$ 1,800	\$ 73,800
2026	\$ 72,000	\$ 1,800	\$ 73,800
2027	\$ 72,100	\$ 1,700	\$ 73,800
2028	\$ 72,100	\$ 1,700	\$ 73,800
2029	\$ 72,100	\$ 1,600	\$ 73,700
2030	\$ 72,200	\$ 1,600	\$ 73,800
2031	\$ 72,200	\$ 1,500	\$ 73,700
2032	\$ 72,200	\$ 1,400	\$ 73,600
2033	\$ 72,200	\$ 1,400	\$ 73,600
2034	\$ 72,300	\$ 1,300	\$ 73,600
2035	\$ 72,300	\$ 1,300	\$ 73,600

Notes: (1) Actual
(2) From Table 20
(3) Collectable Toll Revenue



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Net Revenue for Bond Sale

July 6, 2021

Table 32 presents a comparison of toll revenues, operating expenses, and other revenues under the moderate recovery scenario. Net revenues are expected to increase from \$34.6 million in 2018 to \$37.55 million in 2024, before decreasing to \$14.79 million in 2035. Estimated operating costs for AET were presented previously in Section 5.0 of this report.

Table 32: Estimated Revenues and Expenses, Moderate Recovery Forecast

Year	Toll Revenue (000s)	Violation Fee Revenue (000s)	Operating Expenses (000s) (2)	Net Operating Revenues (000s)	Other Revenues (000s) (3)	Net Revenues (000s)
2019 (1)	\$ 58,969	\$ -	\$ 27,551	\$ 31,418	\$ 4,142	\$ 35,560
2020 (1)	\$ 54,591	\$ -	\$ 27,890	\$ 26,701	\$ 1,938	\$ 28,639
2021	\$ 59,900	\$ 200	\$ 34,876	\$ 25,224	\$ 1,450	\$ 26,674
2022	\$ 64,100	\$ 2,000	\$ 35,041	\$ 31,059	\$ 1,050	\$ 32,109
2023	\$ 69,600	\$ 1,900	\$ 36,049	\$ 35,451	\$ 1,050	\$ 36,501
2024	\$ 71,700	\$ 1,900	\$ 37,097	\$ 36,503	\$ 1,050	\$ 37,553
2025	\$ 72,000	\$ 1,800	\$ 38,325	\$ 35,475	\$ 1,050	\$ 36,525
2026	\$ 72,000	\$ 1,800	\$ 39,607	\$ 34,193	\$ 1,050	\$ 35,243
2027	\$ 72,100	\$ 1,700	\$ 40,944	\$ 32,856	\$ 1,050	\$ 33,906
2028	\$ 72,100	\$ 1,700	\$ 42,339	\$ 31,461	\$ 1,050	\$ 32,511
2029	\$ 72,100	\$ 1,600	\$ 43,795	\$ 29,905	\$ 1,050	\$ 30,955
2030	\$ 72,200	\$ 1,600	\$ 45,313	\$ 28,487	\$ 1,050	\$ 29,537
2031	\$ 72,200	\$ 1,500	\$ 46,897	\$ 26,803	\$ 1,050	\$ 27,853
2032	\$ 72,200	\$ 1,400	\$ 48,549	\$ 25,051	\$ 1,050	\$ 26,101
2033	\$ 72,200	\$ 1,400	\$ 50,271	\$ 23,329	\$ 1,050	\$ 24,379
2034	\$ 72,300	\$ 1,300	\$ 52,067	\$ 21,533	\$ 1,050	\$ 22,583
2035	\$ 72,300	\$ 1,300	\$ 53,939	\$ 19,661	\$ 1,050	\$ 20,711

Notes: (1) Actual

(2) From Table 28. Estimates do not include depreciation expense, equipment cost (allowed for in Capital Projections), postemployment benefits which began in 2007, GASB 68 that began in 2015, or mark to market on Investments that began in 2017.

(3) Primarily interest income. Estimated by Authority based on current interest rates, existing reserve balances.

Net revenues available for capital expenditures after provision for debt service are shown in Table 33. The debt service amounts shown include the amount for new bonds proposed to be issued in 2021 as well as the anticipated 2021 refunding of the 2012 bonds. Table 33 also shows the additional funds available for the Capital Improvement Program from the 2021 issue.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Net Revenue for Bond Sale

July 6, 2021

Table 33: Estimated Revenues Available for Capital Program, Moderate Recovery Forecast

Year	Net Revenue (000s) (1)	Debt Service (000s) (2) (3)	Revenue Available for Capital Projects (000s)		
			From Tolls and Other Revenues	Funds from 2021 Bond Issue (3)(4)	Total
2019 (5)	\$ 35,560	\$ 11,237	\$ 24,323		\$ 24,323
2020 (5)	\$ 28,639	\$ 11,240	\$ 17,399		\$ 17,399
2021	\$ 26,674	\$ 11,837	\$ 14,836	\$ 90,000	\$ 104,836
2022	\$ 32,109	\$ 7,466	\$ 24,642		\$ 24,642
2023	\$ 36,501	\$ 7,464	\$ 29,037		\$ 29,037
2024	\$ 37,553	\$ 7,468	\$ 30,085		\$ 30,085
2025	\$ 36,525	\$ 7,466	\$ 29,059		\$ 29,059
2026	\$ 35,243	\$ 7,465	\$ 27,779		\$ 27,779
2027	\$ 33,906	\$ 9,183	\$ 24,723		\$ 24,723
2028	\$ 32,511	\$ 9,185	\$ 23,326		\$ 23,326
2029	\$ 30,955	\$ 9,186	\$ 21,769		\$ 21,769
2030	\$ 29,537	\$ 9,182	\$ 20,355		\$ 20,355
2031	\$ 27,853	\$ 9,187	\$ 18,666		\$ 18,666
2032	\$ 26,101	\$ 9,185	\$ 16,916		\$ 16,916
2033	\$ 24,379	\$ 9,185	\$ 15,194		\$ 15,194
2034	\$ 22,583	\$ 9,188	\$ 13,395		\$ 13,395
2035	\$ 20,711	\$ 9,186	\$ 11,524		\$ 11,524

- Notes:
- (1) From Table 32.
 - (2) Debt Service includes the proposed 2021 new money bonds and the proposed 2021 refunding bonds and considers the 2012 bonds to be refunded.
 - (3) Provided by the Authority.
 - (4) Estimates assume the Authority issues new money bonds in 2021 producing \$90 million in proceeds.
 - (5) Actuals



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Net Revenue for Bond Sale

July 6, 2021

Revenues available for capital projects from Table 33, including the funds from the proposed bond sales, are compared to the funds required for the capital improvement program in Table 34. The cumulative column shows that funds are estimated to be adequate through year 2028 to provide for the Capital Improvement Program under the moderate recovery forecast and the proposed bond issue plan.

Table 34: Comparison of Revenue Available and Funds Required for Capital Program, Moderate Recovery Forecast

Year	Revenue Available for Capital Projects (000s) (1)	Capital Improvement Program (000s) (2)	Surplus or (Deficit) (000s)	
			Annual	Cumulative
2019 (3)	\$ 24,323	\$ 18,670	\$ 5,653	\$ 52,290
2020 (3)	\$ 17,399	\$ 23,599	\$ (6,200)	\$ 46,090
2021	\$ 104,836	\$ 76,751	\$ 28,085	\$ 74,175
2022	\$ 24,642	\$ 51,787	\$ (27,145)	\$ 47,031
2023	\$ 29,037	\$ 12,683	\$ 16,354	\$ 63,384
2024	\$ 30,085	\$ 53,538	\$ (23,453)	\$ 39,931
2025	\$ 29,059	\$ 25,848	\$ 3,211	\$ 43,142
2026	\$ 27,779	\$ 38,315	\$ (10,536)	\$ 32,605
2027	\$ 24,723	\$ 37,515	\$ (12,792)	\$ 19,814
2028	\$ 23,326	\$ 27,615	\$ (4,289)	\$ 15,525
2029	\$ 21,769	\$ 40,805	\$ (19,036)	\$ (3,512)
2030	\$ 20,355	\$ 21,890	\$ (1,535)	\$ (5,047)
2031	\$ 18,666	\$ 24,650	\$ (5,984)	\$ (11,031)
2032	\$ 16,916	\$ 52,650	\$ (35,734)	\$ (46,765)
2033	\$ 15,194	\$ 46,650	\$ (31,456)	\$ (78,221)
2034	\$ 13,395	\$ 18,650	\$ (5,255)	\$ (83,476)
2035	\$ 11,524	\$ 53,650	\$ (42,126)	\$ (125,602)

Notes: (1) From Table 33 Based on toll and other revenues.
(2) Provided by the Authority.
(3) Actuals

6.1 Bond Resolution Requirements

The Authority has covenanted in section 7.3 of the General Revenue Bond Resolution relating to the General Revenue Bonds, Series 2012, that "(a) The Authority shall at all times fix, charge and collect tolls and other charges for the use of the Bridge System at rates not less than those set forth in any schedule of tolls and other charges then in effect, and (b) The Authority shall at all times fix, charge and collect such tolls and other



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Net Revenue for Bond Sale

July 6, 2021

charges for the use of the Bridge System as shall be required by the Act and as shall be required in order that in each Fiscal Year Net Revenues less investment earnings on amounts held in the General Fund and the Construction Fund included therein shall at least equal the Net Revenue Requirement for such year." In other words, the Authority is both required to charge and collect tolls, as well as to satisfy the Net Revenue Requirement.

The Net Revenue Requirement is defined in the Bond Resolution to mean, for any particular period, Net Revenues must equal "the greater of: (i) the sum of the Aggregate Debt Service and Required Deposits for such period, or (ii) 1.75 times the Aggregate Debt Service for such period."

Per the Bond Resolution, "Revenues shall mean (i) all tolls, revenues, rates, fees, charges, rents and other income and receipts, in each case derived by or for the account of the Authority from the operation of the Bridge System or from the ownership or the holding of certain properties constituting a part of the Bridge System, (ii) proceeds of any insurance covering business interruption loss relating to the Bridge System, (iii) proceeds of the investment of any and all of the foregoing and (iv) the investment proceeds of any and all amounts in Funds and Accounts held by the Trustee, other than the Subordinated Indebtedness Fund and the Rebate Fund, pursuant to the Resolution. Revenues shall include the proceeds of any gifts, grants or other income to the Authority from the government of the United States, the State or any public instrumentality of the State or any other individual or entity, to the extent (i) the Authority is not precluded by law, the grant or other operative contract or instrument from pledging or applying such amounts as Revenues, (ii) such amounts have been realized by the Authority or are reasonably expected by the Authority to be realized in the amounts and at the times taken into account pursuant to law or a legal obligation of the other party and (iii) are not subject to appropriation by the Congress of the United States, the Legislature of the State or any other legislative body of a governmental entity."

Per the Bond Resolution, "Operating Expenses shall mean the Authority's expenses for operation and maintenance (including reserves therefor) of the Bridge System and shall include administrative expenses, planning expenses, environmental compliance expenses, accounting and auditing expenses, insurance premiums, legal and engineering expenses, any payments to pension, retirement, group life insurance, health and hospitalization funds or other employee benefit funds, equipment lease rental payments and any other current expenses or obligations required to be paid by the Authority under the provisions of the Resolution or by law to the extent properly and directly attributable to the operation of the Bridge System and the expenses, liabilities and compensation of the Fiduciaries required to be paid under the Resolution, all to the extent properly attributable to the Bridge System including payment of taxes or other governmental charges required by law. Any Operating Expenses shall not include any allowance for depreciation on the Bridge System or the Authority's buildings and equipment or any principal payments on the Bonds or any other debt obligation of the Authority or reserves for replacements."



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Net Revenue for Bond Sale

July 6, 2021

The following tables present the estimated Revenues, followed by the Net Revenues after accounting for Operating Expenses. Additionally, presented are estimated Debt Service and resulting coverage ratios satisfying the Net Revenue Requirement, clause (ii).

Table 35 presents total revenues through 2035 with the phased toll increase that commenced in May 2020 and the conversion to AET system to begin in July 2021. Revenues of \$61.64 million in 2018 are estimated to increase gradually to \$74.65 in 2035. While the average toll charged is expected to trend downward over time as E-ZPass marketshare increases, the increase in E-ZPass marketshare will also decrease the amount of unpaid video tolls, effectively increasing the average toll collected.

Table 35: Estimated Pro Forma Revenues, 2019 – 2035

Year	Toll Revenue (000s)	Violation Fee Revenues (000s)	Other Revenues (000s) (2)	Total Revenue (000s)
2019 (1)	\$ 58,969	\$ -	\$ 4,142	\$ 63,111
2020 (1)(3)	\$ 54,591	\$ -	\$ 1,938	\$ 56,529
2021 (3)(4)	\$ 59,900	\$ 200	\$ 1,450	\$ 61,550
2022 (3)(4)	\$ 64,100	\$ 2,000	\$ 1,050	\$ 67,150
2023 (3)	\$ 69,600	\$ 1,900	\$ 1,050	\$ 72,550
2024	\$ 71,700	\$ 1,900	\$ 1,050	\$ 74,650
2025	\$ 72,000	\$ 1,800	\$ 1,050	\$ 74,850
2026	\$ 72,000	\$ 1,800	\$ 1,050	\$ 74,850
2027	\$ 72,100	\$ 1,700	\$ 1,050	\$ 74,850
2028	\$ 72,100	\$ 1,700	\$ 1,050	\$ 74,850
2029	\$ 72,100	\$ 1,600	\$ 1,050	\$ 74,750
2030	\$ 72,200	\$ 1,600	\$ 1,050	\$ 74,850
2031	\$ 72,200	\$ 1,500	\$ 1,050	\$ 74,750
2032	\$ 72,200	\$ 1,400	\$ 1,050	\$ 74,650
2033	\$ 72,200	\$ 1,400	\$ 1,050	\$ 74,650
2034	\$ 72,300	\$ 1,300	\$ 1,050	\$ 74,650
2035	\$ 72,300	\$ 1,300	\$ 1,050	\$ 74,650

Notes: (1) Actual
 (2) From Table 24, revenue in addition to toll and violation fee revenues.
 (3) Toll Increase on May 1
 (4) Phased All-Electronic Conversion July 2021 to March 2022

Table 36 shows the estimated debt service coverage ratios with the phased toll increase proposed to begin in May 2020, with revenues as outlined in Table 35.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Net Revenue for Bond Sale

July 6, 2021

Table 36: Debt Service Coverage Ratios, Moderate Recovery Forecast

Year	Revenue (000s) (1)	Operating Expenses (000s) (2)	Net Revenue (000s)	Debt Service (000s) (3)	Debt Service Coverage Ratio
2019 (4)	\$ 63,111	\$ 27,551	\$ 35,560	\$ 11,237	3.16
2020 (4)	\$ 56,529	\$ 27,890	\$ 28,639	\$ 11,240	2.55
2021	\$ 61,550	\$ 34,876	\$ 26,674	\$ 11,837	2.25
2022	\$ 67,150	\$ 35,041	\$ 32,109	\$ 7,466	4.30
2023	\$ 72,550	\$ 36,049	\$ 36,501	\$ 7,464	4.89
2024	\$ 74,650	\$ 37,097	\$ 37,553	\$ 7,468	5.03
2025	\$ 74,850	\$ 38,325	\$ 36,525	\$ 7,466	4.89
2026	\$ 74,850	\$ 39,607	\$ 35,243	\$ 7,465	4.72
2027	\$ 74,850	\$ 40,944	\$ 33,906	\$ 9,183	3.69
2028	\$ 74,850	\$ 42,339	\$ 32,511	\$ 9,185	3.54
2029	\$ 74,750	\$ 43,795	\$ 30,955	\$ 9,186	3.37
2030	\$ 74,850	\$ 45,313	\$ 29,537	\$ 9,182	3.22
2031	\$ 74,750	\$ 46,897	\$ 27,853	\$ 9,187	3.03
2032	\$ 74,650	\$ 48,549	\$ 26,101	\$ 9,185	2.84
2033	\$ 74,650	\$ 50,271	\$ 24,379	\$ 9,185	2.65
2034	\$ 74,650	\$ 52,067	\$ 22,583	\$ 9,188	2.46
2035	\$ 74,650	\$ 53,939	\$ 20,711	\$ 9,186	2.25

Notes: (1) From Table 35
 (2) From Table 28
 (3) From Table 33
 (4) Actual



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Net Revenue for Bond Sale

July 6, 2021

6.2 Summary of Assumptions

The traffic and revenue projections for the Authority's five bridges are based on the following assumptions:

1. The five bridges will continue to be well maintained and efficiently operated. It is assumed that adequate maintenance and protection of traffic will be provided to maintain the capacity on the Newburgh Beacon Bridge during reconstruction.
2. The Authority's Capital Improvement Program will proceed along the lines described herein and within the budget summarized on page 5.73.
3. The macro demographic trends prepared by Woods & Poole and summarized in Table 12 and Table 13 will occur substantially as forecast.
4. The present Authority toll schedule will be in effect during the remainder of the forecast period through 2027.
5. The tolls on the crossings operated by the Port Authority and the Thruway Authority will remain at or near their present levels, or higher, during the forecast period through 2027.
6. Tolls on the Gov. Mario M. Cuomo Bridge will remain higher by, at least, the existing magnitude.
7. The highway network in the Mid-Hudson Valley and surrounding areas will not change substantially.
8. Motor fuel will continue to be in plentiful supply at prices in line with the general rate of inflation.
9. Present, generally recovering economic conditions in the country, northeast United States, and Mid-Hudson Valley area will prevail during the forecast period through 2027.
10. No material natural disaster, poor weather for extended periods or local, state, or national emergency will occur, that would alter travel patterns and divert traffic from the Authority's facilities.

As for the projections themselves, while they are stated year-by-year, they are intended to show the trends that may reasonably be anticipated during the forecast period. Stantec is of the opinion that these assumptions are reasonable.



NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Limitations and Disclaimers

July 6, 2021

7.0 Limitations and Disclaimers

This report provides a summary of past traffic and revenue performance of the New York State Bridge authority bridges and data related to potential future traffic and revenue for an 15-year period. These potential future traffic and revenue are based on the stated assumptions herein. Notably, since March 2020, the traffic on the Authority Bridges has been negatively affected by the onset of the COVID-19 pandemic (Pandemic). A Pandemic of this magnitude has never occurred in recent history and there are no similar events that can be used to estimate how long low volumes may continue, if a recovery will occur rapidly or slowly or the residual effects in 2021 and beyond. To address these unknowns, Stantec has presented traffic and revenue forecasts representing a range of scenarios as to the magnitude and duration of the effects (Scenarios). These Scenarios were presented to provide ranges in performance based on varied assumptions. Due to the current dynamic and fluid situation, the calculations presented herein are those based on the stated assumptions; Stantec does not opine on which, if any, of these outcomes might best represent the actual outcomes of the Pandemic.

It is Stantec's opinion that the forecasts provided in this report have been prepared in accordance with accepted industry-wide practice. In addition to the statements above, Stantec considers it is necessary to state that the forecast and associated calculations take into consideration the following caveats:

- Based on the current uncertainties, this report presents the results of Stantec's consideration of the information available to us as of the date hereof and the application of Stantec's experience and professional judgment to that information excluding the actual outcomes of the Pandemic.
- The future economic and social conditions or demographic developments cannot be predicted with certainty.
- The calculations contained in this report, while presented with numerical specificity, are based on a number of estimates and assumptions which, though considered reasonable to us, are inherently subject to significant economic and competitive uncertainties and contingencies, many of which will be beyond Stantec's control and that of the Authority. In many instances, a broad range of alternative assumptions could be considered reasonable. Changes in the assumptions used could result in material differences in presented calculations.
- If, for any reason, any of these stated conditions should change due to changes in the economy or competitive environment, or other factors, Stantec's calculations may require amendment or further adjustments.

NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Limitations and Disclaimers

July 6, 2021

- The standards of operation and maintenance on the Authority Bridges will be maintained as planned within the business rules and practices, such that the Bridges will be well maintained, efficiently operated, and effectively signed to encourage usage.
- The general configuration and location of the System and its interchanges will remain as discussed in the report.
- Access to and from the System will remain as discussed in the report.
- No other new competing highway projects are assumed to be constructed or significantly improved in the project corridor during the project period, except those identified within the report.
- Major bridge or highway improvements that are currently underway or fully funded will be completed as planned.
- Beyond 2025, no reduced growth initiatives or related controls that would significantly inhibit normal development patterns will be introduced during the forecast period.
- Beyond 2025, there will be no future serious protracted recession during the forecast period.
- Beyond 2025, no local, regional, or national emergency will arise that will abnormally restrict the use of motor vehicles.

Many statements contained in this report that are not historical facts are forward-looking statements, which are based on Stantec's opinions, as well as assumptions made by, and information currently available to, the management and staff of Stantec. Because the statements are based on expectations about future events and economic performance and are not statements of fact, actual results may differ materially from those projected. The words "anticipate", "assume", "estimate", "expect", "objective", "projection", "plan", "forecast", "goal", "budget", or similar words are intended to identify forward-looking statements. The words or phrases "to date", "now", "currently", and the like are intended to mean as of the date of this report.

In Stantec's opinion, the assumptions underlying the study provide a reasonable basis for the analysis. However, any financial projection is subject to uncertainties. Inevitably, some assumptions used to develop the projections will not be realized, and unanticipated events and circumstances may occur. There are likely to be differences between the projections and actual results, and those differences may be material. Because of these uncertainties, Stantec makes no guaranty or warranty with respect to the projections in this study.

This document, and the opinions, analysis, evaluations, or recommendations contained herein are for the sole use and benefit of the contracting parties. There are no intended third-party beneficiaries, and Stantec Consulting Services Inc. (and its affiliates) shall have no liability

NEW YORK STATE BRIDGE AUTHORITY TOLL TRAFFIC & REVENUE FORECASTS

Limitations and Disclaimers

July 6, 2021

whatsoever to any third parties for any defect, deficiency, error, omission in any statement contained in or in any way related to this document or the services provided.

Neither this document nor any information contained therein or otherwise supplied by Stantec Consulting Services Inc. in connection with the study and the services provided to our client shall be used in connection with any financing solicitation, proxy, and proxy statement, proxy soliciting materials, prospectus, Securities Registration Statement or similar document without the express written consent of Stantec Consulting Services Inc.

Sincerely,

STANTEC CONSULTING SERVICES INC.

[THIS PAGE INTENTIONALLY LEFT BLANK]

Appendix B - Report of Consulting Engineer

[THIS PAGE INTENTIONALLY LEFT BLANK]



Colorado | Illinois | Louisiana | Michigan | Missouri | New Jersey | New York | North Carolina | Pennsylvania | Texas | Washington, DC | West Virginia

June 1, 2021

Ms. Tara Sullivan, Acting Executive Director
New York State Bridge Authority
P.O. 1010
Highland, NY 12528

ATTN: Jeffrey Wright, P.E., Chief Engineer

RE: PN 3672.21
CONSULTING ENGINEER'S REPORT ON
PHYSICAL CONDITION OF BRIDGES

Dear Ms. Sullivan:

Modjeski and Masters has prepared this letter report on the physical condition of the bridges operated by the New York State Bridge Authority (NYSBA) to serve as documentation related to the future financial needs for the Authority's Bridges.

DESCRIPTION OF SYSTEM BRIDGES

The Authority operates six vehicular major bridge structures at five sites along the Hudson River and is also responsible for the structural maintenance of the Walkway Over the Hudson Pedestrian Bridge.

Systemwide contracts are underway to implement all-electronic tolling (AET) at all of the Authority's bridge facilities, including removal of existing toll booth structures and islands. The AET system is scheduled to "go live" in Fall 2021, except at the Mid-Hudson Bridge facility which is scheduled for Spring 2022. Toll plaza demolition will follow.

The oldest of the vehicular crossings is the Bear Mountain Bridge, opened in 1924, a suspension bridge with a 38-foot wide roadway and a main span length of 1632 feet. The bridge was constructed by a private corporation and acquired by the Authority in 1940. The original roadway deck was replaced and the floor system modernized in 1976 and 1977.

The Mid-Hudson Bridge, a suspension bridge with a main span of 1,495 feet, was opened in 1930. The original roadway deck was replaced in 1987 and 1988 with a new 31-foot wide deck which is operated as a three lane roadway during peak traffic periods. The mile-long four-lane divided highway approach on the west side of the bridge was completed in 1967. The structure-supported approach roadway on the Poughkeepsie end of the bridge was widened to its present four lane configuration in several stages from the 1940s to the 1990s.

The Rip Van Winkle Bridge is a 4,978 foot cantilever through truss and deck truss bridge with an 800-foot main span. Opened in 1935, the bridge has benefitted from several projects to extend the useful life of its deck and improve roadway lighting. In 1992, a deck replacement

project increased the roadway width to its present 34 feet with a 6-foot sidewalk on the south side of the bridge. Sidewalk widenings (lookouts) were constructed in 2019.

The Kingston-Rhinecliff Bridge, opened in 1957, is a continuous truss bridge with an overall length of 7,793 feet and two main channel spans of 800 feet each. In 2002, a deck replacement project increased the roadway width from 36 feet to 40 feet. In 2019, a barrier was placed on the deck to provide a separated pedestrian path for the Empire State Trail, resulting in a 34-foot roadway and a 4-foot wide pedestrian path (with 5-foot wide passing zones every 200 feet).

The North Span of the Newburgh-Beacon Bridge complex was opened in 1963. It is 7,789 feet long overall with a 1,000-foot main channel cantilever truss span. Originally designed to accommodate two 15-foot traffic lanes, the bridge was the object of a major reconstruction beginning in 1980 and was reopened in 1984 with a 39-foot 5-inch wide roadway accommodating three lanes of westbound traffic. A contract is currently underway to replace the deck, with completion scheduled in late 2022.

The South Span at Newburgh-Beacon, opened in 1980, is 7,801 feet long overall, slightly longer than the North Span. The newer bridge has a 53-foot 5-inch wide roadway accommodating three lanes of eastbound traffic and a 12-foot wide shoulder, serving as a breakdown lane. The South Span also carries a separated 8-foot wide pedestrian walkway and bicycle path. The deck was replaced from 2013-2015.

In 2010 the Poughkeepsie Railway Bridge, now designated the Walkway over the Hudson, was placed under the ownership of the New York State Bridge Authority. This bridge was originally opened to rail traffic in 1888, was modified in 1923 to increase load capacity, closed to rail traffic in 1974 after being damaged by fire, and converted to a pedestrian walkway in 2009-2010. The bridge presently carries only pedestrians on a concrete deck 25 feet wide with a 21'-7" clear walkway.

ANNUAL INSPECTION PROCEDURE, ADDITIONAL PROCEDURES & IMPLEMENTATION

The Authority regularly contracts with independent firms of civil and structural engineers to provide various inspection, investigation, design and construction supervision services.

Annual Inspection Procedures

From the late 1950s through 1989, the Authority retained Modjeski and Masters to conduct annual inspections of its bridges. In 1990, 1991, and 1992, the Authority bridges were inspected by three consulting engineering firms with each firm being assigned a different pair of bridges each year. Over the three-year period, each firm inspected the entire group of six bridges. The three consultants utilized were Ammann and Whitney (now WSP); Modjeski and Masters, Inc.; and Parsons Brinkerhoff Quade and Douglas, Inc (now WSP). Between 1993 and 2016, Modjeski and Masters, Inc. performed the annual inspections for all six of the Authority's bridges. In 2017, 2018 and 2019 (with an extension through 2022), the bridge inspections were again divided among three consulting engineering firms. The three firms are HAKS Engineers (now Atane), Modjeski and Masters, and WSP. Since 2017, three maintenance inspections are performed by

Modjeski and Masters each year and each of the three firms perform one biennial inspection each year.

The actual inspections are performed by a team of each firm's licensed professional engineers and, where appropriate, experienced engineers under the direction of licensed professional engineers. Presently, all bridges are inspected annually with three bridges receiving a biennial inspection and three bridges receiving a maintenance inspection. The biennial inspection is performed to meet the state and federal requirements while the maintenance inspections are performed to ensure the continuation of the present high level of bridge maintenance. For the biennial inspections, the bridges receive hands-on close-up visual inspection of virtually every steel member of the bridges. Special attention is paid to all fracture critical members. Fracture critical members are those steel members whose failure would be expected to result in collapse or partial collapse of the structure. Where it is useful, "snooper" crane trucks and/or under-bridge inspection units (UBIUs) are utilized to provide access for inspections to the bridge floor systems and below deck trusses. Elsewhere, Authority employees rig scaffolding as needed, or the inspectors climb the structural members themselves using "technical access methods" to complete their observations.

The products of these annual inspections include:

- (1) A photographically illustrated narrative report on the condition of each bridge;
- (2) A numerical rating of each component of each vehicular bridge structure consistent with the requirements of the New York State Department of Transportation inspection and reporting manuals and the Federal Highway Administration's National Bridge Inspection Standards (NBIS). No such numerical rating system exists for pedestrian structures; therefore, no numerical assignment is made for the components of the Walkway Over the Hudson;
- (3) A checklist of maintenance tasks recommended for implementation by the Authority's in-house maintenance staff; and
- (4) A prioritized listing of extraordinary maintenance, rehabilitation and replacement projects recommended for implementation through the use of outside contractors.

In 1987, the adequacy and effectiveness of the Authority's annual inspection program was evaluated by a joint team of Federal Highway Administration and New York State Department of Transportation officials. They concluded in their evaluation report that the Authority was 100% in compliance with the national standards for frequency of inspection, that the inspections were being carried out by competent and qualified personnel and that "the New York State Bridge Authority should be commended for instituting special in-depth inspections, such as the cable inspection of their suspension bridges, as an indication of their foresight into areas of possible problems." Subsequent FHWA/NYS DOT evaluations have made similar findings.

Additional Procedures

In addition to developing its annual inspection reports, Modjeski and Masters also prepares additional investigation and inspection reports and reviews investigation and inspection reports of other consulting engineering firms retained by the Authority to undertake specific projects. In recent years such additional procedures have included, among others:

- Underwater inspections of each of the Authority's submerged bridge piers, which have been routinely done at five-year intervals;
- Unwrapping, interior inspection, chemical analysis and fatigue testing of suspension bridge main-cable wires, undertaken at not greater than ten-year intervals;
- Removal, inspection and testing of suspender ropes;
- Review of sonar depth plotting and scour monitoring of the river bottom adjacent to the Authority's bridge piers;
- Ship collision studies and associated risk assessments at all bridge crossings with piers in the river;
- Vulnerability Assessment of all NYSBA facilities;
- Seismic analyses of the bridges to identify areas of the structures that do not meet current seismic standards; and
- Truss hanger stress and fatigue analysis.

Finally, Bridge Authority maintenance and engineering personnel are interviewed in connection with both the annual inspections and any additional procedures to collect information on conditions and events observed by them during the course of their work on the bridges.

Implementation

Implementation of the recommended maintenance and rehabilitation and replacement programs is the responsibility of the Authority. After review of the annual inspection reports, the reports of the additional studies and investigations, and the prioritized list of major projects developed by the Authority and reviewed by Modjeski and Masters, the Authority develops both an annual maintenance work plan for its in-house forces and an annual revision of its Five-Year Capital Construction and Rehabilitation Program. The current Five Year Program includes work scheduled for the years 2021 through 2025. In addition to the Five-Year Program, a long range Capital Construction and Rehabilitation Program extending through the year 2041 has been developed.

Since its inception in 1986, the Authority's Department of Engineering and Maintenance has been responsible for the condition and proper repair of the bridges. The Chief Engineer is a licensed professional engineer with experience in the inspection, construction and maintenance of large over-water bridges. He oversees a Director of Bridge Maintenance who is responsible for the activities of all Authority maintenance employees and a Director of Contract Maintenance who coordinates the activities of all outside contractors. The Authority employs one bridge maintenance foreman at each bridge and a staff of approximately 48 full-time maintenance workers throughout the bridge system.

These forces are responsible for many maintenance activities which prevent or delay deterioration of the bridges, such as annual washing of the metalwork affected by road salt and debris, lubrication of moving portions of the bridges, spot painting and repainting of portions of the bridges, repairing of roadway deck concrete spalls and deck joints, and minor structural steel repairs and modifications.

The NYSBA has always pursued the policy of maintaining an adequate paint coating on steel bridge members. For many years NYSBA maintenance personnel repainted the bridges. However, with the environmental constraints and associated specialized equipment and expertise required for lead paint removal as well as an increase in general repainting needs, a larger portion of the work has been performed under contract. The Authority plans and schedules maintenance cleaning and painting contracts for a different portion of each bridge on or about a 20-year cycle, with each contract spaced to sufficiently manage systemwide costs while meeting the condition needs of the respective structures.

In addition to the inspection information described herein, the NYSBA has received from Modjeski and Masters load rating reports in 1988 and 1992. Rating analysis calculations were made for the floor system members of all NYSBA structures. This vehicle load capacity information is used by the NYSBA to control weights of vehicles crossing the bridges. The goal of preventing vehicle overloading on the bridges results in reducing maintenance and contract work and may extend the service life of the bridges. A recent assignment to meet federal requirements for the rating of Special Hauling Vehicles (SHVs) and Emergency Vehicles (EVs) involved updating the 1988 and 1992 floor system load ratings.

CONDITION OF BRIDGE FACILITIES

Annual inspections were made and reports filed in 2020 on the following NYSBA facilities:

- Bear Mountain Bridge and Approaches
- Newburgh-Beacon North Span and Approaches
- Newburgh-Beacon South Span and Approaches, including the Balmville Road Bridge over Route I-84 and the Route I-84 Bridge over Route 9W
- Mid-Hudson Bridge and Approaches, including the Route 44/55 Bridge over Route 9W
- Kingston-Rhinecliff Bridge and Approaches
- Rip Van Winkle Bridge and Approaches
- Walkway Over the Hudson

In the case of the Walkway over the Hudson, an inspection was completed in 2015 and 2020. At the present time, it is anticipated that condition inspections will be completed on a 5-year cycle for this particular bridge with the next inspection to take place in 2025.

In the case of the vehicular bridges, the annual inspections were conducted in accordance with New York State Department of Transportation requirements and Federal Highway Administration guidelines. The New York State Department of Transportation Bridge Data Information System (BDIS) is updated each year for each bridge.

All of the elements of each vehicular bridge are rated. The entire bridge also receives an overall "General Recommendation", which is the Inspector's opinion of what he/she feels is the condition of the bridge as a whole. Important bridge elements such as primary structural members, abutment stems, pier columns, roadway deck, etc., heavily influence the general recommendation. The general recommendation is numerically rated from one to seven. This numerical rating system is described in general terms as follows: 1 signifies "very poor condition"; 2 signifies "poor condition"; 3 signifies "major structural repairs required"; 4 signifies "structural repairs required"; 5 signifies "repairs required"; 6 signifies "minor repairs required"; and 7 signifies "good condition".

The following is a summary of General Recommendations of Bridge Authority facilities from the latest Biennial Inspections:

<u>STRUCTURE</u>	<u>GENERAL RECOMMENDATION</u>
• Bear Mountain Bridge	5
• Newburgh-Beacon Bridge (South Span)	5
• Newburgh-Beacon Bridge (North Span)	5
• Balmville Road Overpass	5
• Interstate 84 over Route 9W Overpass	7
• Mid-Hudson Bridge	5
• Route 9W overpass at Mid-Hudson	6
• Kingston-Rhinecliff Bridge	5
• Rip Van Winkle Bridge	5

An inspection report for each bridge was submitted to the Authority. Maintenance recommendations were abstracted from the reports to serve as checklists for bridge maintenance crews. The Federal Structure Inventory and Appraisal Forms are updated with each Biennial Inspection.

Modjeski and Masters reviews the findings of depth sounding surveys performed each year for all river piers. Findings from underwater diver inspections made in 2017 were reviewed as available. The next Underwater diver inspections are currently scheduled for the summer of 2022.

The findings on the bridge conditions are summarized below, based on the 2020 annual inspection reports. Reference is also made to the recommended 2021-2025 Capital Construction and Rehabilitation Program and the Long-range plan through 2041.

Bear Mountain Bridge

The current overall condition of this bridge is good and it requires only minor repair efforts, in addition to the contract repair work detailed below (in addition to the AET work noted earlier).

The main cable southwest backstay was strengthened in 2003. A periodic cable evaluation was performed by Modjeski and Masters, with cable openings and inspections taking place in 2017-2018 followed by wire testing results and delivery of the final report in early 2021. The next main cable evaluation is scheduled for 2028.



The overlay was replaced in 2007. Interim deck shoring has recently been performed and a deck slab rehabilitation and overlay replacement contract is scheduled for 2021. A complete deck replacement is scheduled to start in 2026.

The upper and lower chords of the stiffening truss were repainted in 1992 and the towers were repainted in 1998. A maintenance painting contract was conducted in 2002 and 2005. The main cables were painted in 2000. Maintenance painting of the towers above the roadway is scheduled for 2024 and maintenance painting of the deck truss spans is scheduled for 2029.

As part of an enhanced security program, security fencing and cameras are in place and cameras are periodically added to the system.

Newburgh-Beacon South Span

The current overall condition of this bridge is good and it should require only minor repair efforts, except for the contract repair work described herein (in addition to the AET work noted earlier).

The deck was completely replaced from 2013 through 2015, including new barrier, railings, overhead sign gantries and other appurtenances. Steel repairs for the pedestrian walkway were performed in 2020 and the frozen bearings and associated concrete deterioration at the west abutment were rehabilitated in 2020.

The floor system metalwork below stringer relief joints was cleaned and painted in 2017 and the interior of select bottom chord truss joints were cleaned and painted in 2019. A major maintenance painting contract is scheduled for 2029-2031.

Substructure repairs for both the South Span and North Span are scheduled in 2025-2026.

The west approach roadway was rehabilitated in 2017-2018 as part of the Rehabilitation of the Interstate 84 over NY 9W overpass.

To enhance the security of the facility, new security fencing and cameras were installed in 2003 and cameras are periodically added to the system.

Newburgh-Beacon North Span

The current overall condition of this bridge is fair to good and it requires only minor repair effort by Authority maintenance forces, except for the contract repair work described herein.

The overall condition is influenced by the fair condition of the roadway deck that dates back to the early 1980s. Construction for the complete deck replacement are underway completion scheduled for late 2022.

The last major painting and lead abatement project was completed in 2012 with the next maintenance painting contract scheduled for 2034.

Substructure repairs for both the South Span and North Span are scheduled in 2025-2026.

The I-84 over Rte 9W approach structure is in good condition having received an extensive rehabilitation in 2017-2018. This rehabilitation included raising the superstructure two feet, a complete deck replacement, elimination of deck joints, full cleaning and painting of superstructure metalwork, seismic retrofits and reconstruction of the approach highway and barrier system.

Rehabilitation of the east approach roadway is scheduled for 2028.

Mid-Hudson Bridge

The current overall condition of the Mid-Hudson Bridge is good and it requires only minor repair work, except for the contract repair work described herein (in addition to the AET work noted earlier).

A main cable restoration project was completed in 1993, during which an extensive cable condition investigation was conducted. This contract provided for unwrapping and rewinding the main cables, coating the cable wires with lubricant, and painting the cable wrapping. The objective was to prolong the service life of the cables as much as possible. The most recent main cable evaluation was undertaken with field work performed in 2018 and wire testing and delivery of a final report completed in early 2021. The next evaluation is scheduled in 2028 and a contract to replace all suspenders is scheduled in 2024.

The bridge deck wearing surface was replaced in 1993. Because of the traffic volume carried by this bridge, the wearing surface was also replaced in 2003 and 2007. The next wearing surface replacement is scheduled in 2022. The existing filled grid deck has been in service since 1987, and the deck is scheduled for complete replacement in 2033.

A construction contract is underway to address deteriorating elements along the steel curb, railing bases and concrete-filled grid deck along the curb lines. This contract also addresses hanger pin wear at the towers and associated misalignment of stringer bearings beneath the finger plate expansion joints at the towers. Contract completion is scheduled for late 2021.

The east approach was extensively rehabilitated by contract work in 1989-91. The overlay on the east approach has been replaced several times since. The west approach received a major rehabilitation from two contracts in 1990 and 1991. Contracts to address localized deterioration of the main span wearing course is scheduled in 2022 and wearing surface and median barrier replacement on the west approach is scheduled in 2024.

Contracts for performing lead abatement painting of the superstructure occurs periodically with the next contract scheduled for 2024, which will also include the east approach viaduct. Maintenance cleaning and painting of the towers is scheduled in 2026.

An emergency command center was added at the Mid-Hudson Bridge in 2010 to handle systemwide emergency coordination. In addition, security fencing and cameras were

added in 2003 and cameras have been added periodically. Upgrades to the bridge electrical system are scheduled for 2025.

Kingston-Rhinecliff Bridge

The current overall condition of this bridge is good. The bridge requires only minor repair effort, except for the contract repair work described below (in addition to the AET work noted earlier).

The deck was replaced in 2002. A micro-surface overlay was placed in 2007 and replaced in 2020. An approach paving and deck overlay replacement contract is scheduled for 2028.

Electrical upgrades and substructure repairs are scheduled for 2024.

In 2019, a barrier was placed on the bridge to separate pedestrians from vehicular traffic as part of the Empire State Trail. The barrier placed was precast "temporary" barrier. A more permanent solution with a cantilevered sidewalk is being considered by the Authority.

A major lead abatement painting project was completed in 2003. A major maintenance painting contract for the east and west approach girder spans is scheduled for 2024. A maintenance painting for the deck truss spans is scheduled for 2027.

To enhance security at the facility, security fencing was added in 2003 with video cameras installed in 2010. Other cameras have been added periodically since.

Rip Van Winkle Bridge

The current overall condition of this bridge is good and it requires only minor repair efforts, except for the contract repair work described herein (in addition to the AET work noted earlier).

The complete replacement of the reinforced concrete roadway deck was completed in 1992. The roadway deck and sidewalks received a micro-surface overlay in 2007. The sidewalks were replaced in 2019 and included intermittent lookouts in the deck truss spans. The roadway overlay is scheduled to be replaced in 2024. A complete deck replacement and seismic retrofit contract is scheduled in 2032.

The river towers and lower chords of the bridge were repainted from 1993 to 1995 using full lead abatement procedures. Lead abatement continued in 2006. The next major lead abatement painting contract is scheduled for the pier towers and deck truss spans in 2024 and the through truss spans in 2029.

An investigation and inspection of truss hanger pins was completed in 1996 with all pins found to be in satisfactory condition. The truss span hold-down links at the west abutment exhibited wear and associated vertical settlement of the superstructure. These link assemblies, including the upper and lower pins, were completely replaced in 2019 as was the roadway joint at the west abutment.

To enhance security at the facility, security fencing was added in 2003 with video cameras installed in 2010. Cameras have been added periodically. A contract to upgrade the bridge electrical system is scheduled in 2024.

Long-Term Outlook for NYSBA Facilities

The NYSBA highway bridges will remain serviceable until they become either geometrically and functionally obsolete, or structurally unsafe. Bridges can potentially become geometrically and functionally obsolete because horizontal and vertical clearances become deficient or because traffic capacity reaches intolerable levels. Bridges can potentially become structurally unsafe because of deterioration, insufficient load-carrying capacity, increases in legal loads, or fatigue in structural steel.

Based on our knowledge of the information available from inspections, investigations and load ratings, our opinion is that NYSBA bridges are all geometrically and functionally serviceable, structurally safe, and maintained to high standards. It is our opinion that the current NYSBA policies of regular inspections, and timely maintenance and rehabilitation work must be continued so that the bridges will remain serviceable. Given the age of the structures, any substantial delays in preventative maintenance may result in rapid deterioration of the facility.

EVALUATION OF INSPECTION AND MAINTENANCE PROCEDURES AND THE FIVE YEAR PROGRAM

Vehicular Bridges

Modjeski and Masters believes that the annual vehicular bridge inspection program conducted by the NYSBA is successful in achieving its goal of obtaining information on bridge conditions. As stated in the Federal report which reviewed NYSBA inspection procedures, the Authority is to be commended for its inspection program with its emphasis on special investigations such as the suspension bridge cable condition. The firm believes that the Authority is benefiting from the application of the latest techniques and state of the art knowledge to its inspections and investigations.

Modjeski and Masters believes that the Authority has an excellent record of response to the annual inspection findings. The maintenance program continually incorporates the inspection findings to the extent that Authority capabilities permit. Whenever maintenance forces cannot perform needed work as defined by the inspection results, this work is scheduled for maintenance or rehabilitation contract work. The Authority has appropriately determined the priority of the contract work in the Five-Year Program.

The Authority's in-house maintenance efforts are, in our judgment, well-directed toward the goal of minimizing the need for contract maintenance. These efforts are cost-effective, based on the condition of the bridges that have resulted. The Authority's maintenance and rehabilitation program keeps the Authority's facilities in very good condition and is, in our opinion, among the best in the nation.

The effects of aging, traffic and changing public needs can be expected to result in continued need for repair and rehabilitation. The firm believes that the planning which has



produced the Five-Year Program is well-conceived. Adherence to the scheduled program will enable the Authority to cope with deterioration and will keep the facilities serviceable.

Walkway Over the Hudson

Though rehabilitated just prior to the Authority's assuming ownership, there have been a number of repairs performed since and repairs yet to be performed on the Walkway over the Hudson. Based on the findings of the inspection performed in 2015, the Authority contracted to repair deteriorated railing post bases along the walkway deck. To facilitate inspection, the Authority also implemented an inspection access contract that added ladders and hand ropes at various locations on the structure.

The last inspection was performed in 2020, so it is anticipated that many findings of that inspection will be addressed by Authority maintenance forces. However, a pier base repair contract is scheduled for 2021-2022, a \$2.6 million is programmed for steel repairs in 2024 and a major \$32 million lead abatement painting contract is scheduled for 2025 through 2027.

Conclusions

Modjeski and Masters believes that the Authority's current operating procedures, with their associated costs for maintenance operations, and the Five Year and Long Range Capital Construction and Rehabilitation Program expenditures, will sustain operations at a high standard. The high capital asset value of the Authority's facilities can be expected to be maintained as the service life is extended by Authority policies and operations.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Quentin P. Johnson", written over a horizontal line.

Quentin P. Johnson, P.E.
Vice President
Modjeski and Masters, Inc.

[THIS PAGE INTENTIONALLY LEFT BLANK]

Appendix C - Financial Statements of the Authority

[THIS PAGE INTENTIONALLY LEFT BLANK]

NEW YORK STATE BRIDGE AUTHORITY

Basic Financial Statements,
Supplementary Information and
Independent Auditors' Report
December 31, 2020 and 2019

NEW YORK STATE BRIDGE AUTHORITY

Contents

	<u>Page</u>
Independent Auditors' Report	1 - 3
Management's Discussion and Analysis	4 - 9
Basic Financial Statements:	
Statements of Net Position	10
Statements of Revenue, Expenses and Changes in Net Position	11
Statements of Cash Flows	12
Notes to Financial Statements	13 - 34
Required Supplementary Information:	
Bridge System Assessments	35 - 37
Schedule of Authority's Proportionate Share of the Net Pension Liability	38
Schedule of Authority's Pension Contributions	39
Schedule of Changes in Authority's Total OPEB Liability and Related Ratios	40
Independent Auditors' Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with <u>Government Auditing Standards</u>	41 - 42
Report on Investment Compliance with Section 201.3 of Title Two of the Official Compilation of Codes, Rules and Regulations of the State of New York	43 - 44

INDEPENDENT AUDITORS' REPORT

The Governing Board
New York State Bridge Authority:

Report on the Financial Statements

We have audited the accompanying financial statements of the New York State Bridge Authority (the Authority), as of and for the years ended December 31, 2020 and 2019, and the related notes to financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Authority's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Authority, as of December 31, 2020 and 2019, and the changes in its financial position and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 4 through 9, Bridge System Assessments on pages 35 through 37, the Schedule of Authority's Proportionate Share of the Net Pension Liability on page 38 the Schedule of Authority's Pension Contributions on page 39 and the Schedule of Changes in Authority's Total OPEB Liability and Related Ratio's on page 40 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Reports on Other Legal and Regulatory Requirements

In accordance with Government Auditing Standards, we have also issued our report dated March 1, 2021, on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the Authority's internal control over financial reporting and compliance.

In accordance with Government Auditing Standards, we have also issued our report dated March 1, 2021, on the Authority's compliance with Section 201.3 of Title Two of the Official Compilation of Codes Rules, and Regulations of the State of New York. The purpose of that report is to provide an opinion as to the Authority's compliance with investment guidelines contained therein. That report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the Authority's internal control over financial reporting and compliance.

EFPR Group, CPAs, PLLC

Williamsville, New York
March 1, 2021

NEW YORK STATE BRIDGE AUTHORITY

Management's Discussion and Analysis

December 31, 2020

The management's discussion and analysis serves to introduce the other elements of the financial section of this annual report which include the basic financial statements and required supplementary financial information. The objective of this analysis is to enhance the understandability and usefulness of the external financial reports. As in previous years, the Authority is providing a comparative analysis of certain financial information.

FINANCIAL HIGHLIGHTS

Toll revenue in 2020 totaled \$54.6 million, which was \$4.4 million lower than 2019 and \$4.4 million below 2018. Other income was \$0.7 million, a decrease of \$0.1 million from the prior year. Grant revenue ceased in 2020, during 2019 \$1.5 million was recorded.

Total operating expenses of \$62.2 million increased by \$10.0 million. This 19.2% increase was the result of increased rehabilitation, reconstruction, and bridge repairs and employee benefits. The rehabilitation, reconstruction, and bridge repairs increases \$5.0 million from 2019, as the Authority uses the modified approach for reporting its bridge infrastructure and began replacing the deck at the North Span Newburgh-Beacon Bridge during 2020. Employee benefits increased \$4.6 million largely the result of actuarially computed expenses related to Employee Retirement and Other Post Employment benefits.

Net position at December 31, 2020 was \$58.8 million, which decreased \$7.2 million from the prior year.

BASIC FINANCIAL STATEMENTS

The Authority's financial statements are prepared in accordance with accounting principles generally accepted in the United States of America as prescribed by the Governmental Accounting Standards Board (GASB). These statements are designed to afford an overview of the Authority's finances and consist of the Statements of Net Position, Statements of Revenue, Expenses and Changes in Net Position, and the Statements of Cash Flows.

The notes to financial statements include additional information necessary to provide a further understanding of the financial statements.

OTHER SUPPLEMENTARY INFORMATION

Other supplementary information serves to give the reader additional information with respect to the condition of the bridge system and capital improvement expenditures.

NEW YORK STATE BRIDGE AUTHORITY
Management's Discussion and Analysis

FINANCIAL STATEMENT ANALYSIS

Statements of Net Position

The statements of net position present information on the Authority's assets, deferred outflows of resources, liabilities, deferred inflows of resources and reporting net position at year end. Increases or decreases in net position may indicate whether or not the Authority's financial position is improving. A condensed summary of the Authority's statements of net position is shown on the following pages.

Net position may serve over time as a useful indicator of the Authority's financial position. As of December 31, 2020 and 2019, assets and deferred outflows exceeded liabilities and deferred inflows by \$58,767,960 and \$65,999,522, respectively.

The Authority's financial position is the product of several financial transactions including the net results of activities, the valuation of certain assets and liabilities, the acquisition and payment of debt, the acquisition and disposal of capital assets, and the depreciation of capital assets.

The following table presents a summary of the Authority's financial position as of December 31, 2020 and 2019:

	<u>2020</u>	<u>2019</u>
Current assets	\$ 93,119,523	95,699,768
Capital assets (net of accumulated depreciation)	20,339,054	22,087,228
Bridge system	<u>84,358,269</u>	<u>84,358,269</u>
Total assets	<u>197,816,846</u>	<u>202,145,265</u>
Deferred outflows of resources	<u>24,831,438</u>	<u>15,372,406</u>
Current liabilities	17,024,125	13,171,126
Noncurrent liabilities	<u>145,405,869</u>	<u>135,292,871</u>
Total liabilities	<u>162,429,994</u>	<u>148,463,997</u>
Deferred inflows of resources	<u>1,450,330</u>	<u>3,054,152</u>
Net position	\$ <u>58,767,960</u>	<u>65,999,522</u>

NEW YORK STATE BRIDGE AUTHORITY

Management's Discussion and Analysis

Changes in the Authority's net position can be determined by reviewing the following condensed statements of revenue, expenses and changes in net position for the years ended December 31, 2020 and 2019:

	<u>2020</u>	<u>2019</u>
Operating revenue	\$ 55,318,659	61,288,796
Operating expenses	<u>62,192,271</u>	<u>52,194,177</u>
Operating income	(6,873,612)	9,094,619
Nonoperating revenue (expenses)	<u>(357,950)</u>	<u>257,303</u>
Change in net position	(7,231,562)	9,351,922
Net position at beginning of year	<u>65,999,522</u>	<u>56,647,600</u>
Net position at end of year	\$ <u>58,767,960</u>	<u>65,999,522</u>

Statements of Revenue, Expenses and Changes in Net Position

Toll receipts, accounting for the majority of operating revenue, totaled \$54.6 million in 2020, which was \$4.4 million lower than 2020. A 19.46% decrease in traffic attributable to COVID-19 occurred during 2020. Traffic decreased substantially early in second quarter 2020 as a result of the response to COVID-19. Traffic materially rebounded throughout the third quarter. Traffic decreases were partially offset by the mix of traffic and the May 1 implementation of a toll schedule revision that consists of four revisions phased in annually on May 1 of each year. The net result produced the 7.42% decrease in toll revenues. Traffic decreases were from both passenger vehicles 12.3 million, 20.5% and commercial vehicles 0.1 million, a 2.6% decline. Revenue decreased from passenger vehicles and increased from commercial vehicles due to the mix of traffic by (12.5%) and 5.0% respectively. The passenger category contributed (\$5.2) million and the commercial category contributed \$0.9 million to the overall decrease in 2020. Other income was \$0.7 million, \$0.1 million lower than prior year. The Authority booked no grants in 2020 while in 2019 it booked \$1.5 million associated with improvements at the Kingston-Rhinecliff Bridge performed in 2019 that related to the Empire State Trail.

Operating expenses increased \$10.0 million for the year as rehabilitation, reconstruction, and bridge repairs increased by \$5.0 million due to the start of the project for the replacement of the deck on the North Span of Newburgh-Beacon Bridge. Salaries decreased by \$0.1 million primarily due measures taken to control staffing costs as a response to COVID-19. Employee benefits expenses increased \$4.6 million, reflecting both an increase in the provisions associated with GASB Statement No. 68 - "Accounting and Financial Reporting for Pensions - an Amendment of GASB Statement No. 27" and an increase associated with GASB Statement No. 75 - "Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions" (see accompanying notes to financial statements). Commercial insurance increased by \$0.4 million associated with higher prevailing rates for coverage in insurance markets and a credit for workers compensation experienced in 2019. Maintenance and

NEW YORK STATE BRIDGE AUTHORITY

Management's Discussion and Analysis

repairs decreased by \$0.2 million largely from lower costs during the winter of 2020. Professional services decreased by \$0.4 million from the decreased utilization of the traffic consultant as the Authority prepared documentation in 2019 for the toll schedule revision and a reduction in legal fees compared to prior year. Electronic toll costs increased by \$0.7 million from both increased E-ZPass utilization and higher transaction processing fees.

Nonoperating revenue, which includes interest income on investments was \$1.6 million for 2020, down \$0.9 million from the prior year as interest rates and funds available to invest in longer maturities both decreased. Historically low interest rates on government obligations in which the Authority invests started to ease throughout 2020, but have kept interest income low.

Nonoperating expenses consists primarily of interest. Interest paid on the Authority's outstanding bonds totaled approximately \$2.0 million for 2020. This \$0.3 million decrease is attributable to the continuing payments of outstanding principal on the Series 2012 debt issuance. In April 2012, the Authority issued the Series 2012 General Revenue Bonds to support the Capital Program.

Statements of Cash Flows

The statements of cash flows present information on the major sources and uses of cash during the year, showing net cash provided or used in operating, capital financing and investing activities.

Net cash of \$7.8 million provided by operating activities for 2020 decreased by \$4.0 million compared to 2019. This was attributable to the decrease in revenue associated with COVID-19.

Financing activities consumed \$11.7 million of cash in 2020, consistent with 2019.

Cash flows from 2020 investing activities resulted in net a cash inflow of \$6.1 million, which includes interest earned on investments and net cash resulting from the purchase and sale of investments.

AUTHORITY BUDGET

The Authority's 2020 budget projected collections of \$63 million, a \$1.7 million increase over 2019. Actual toll revenue was below budget projections by \$7.6 million as passenger traffic decreased 20.5% compared to prior year related to COVID-19. Commercial traffic also decreased by 2.6% but due to the mix of commercial traffic the commercial revenue increased by \$0.9 million compared to prior year. Overall traffic decreased from 2019 by 12.4 million vehicles. This decrease was attributable to a 12.3 million decrease in passenger vehicle traffic and a 0.1 million decrease in commercial vehicle traffic. The decrease in traffic was offset by a change in the mix of traffic and resulted in the \$4.4 million decrease in revenue compared to 2019. The Authority budgeted \$0.7 million of other income and actual results were materially consistent. Additionally, despite interest rates on Authority investments decreased more than expected, related to prevailing market conditions, reductions in expected payments for repairs rehabilitation and reconstruction produced interest income of \$1.2 million that was higher than budget of \$0.9 million.

NEW YORK STATE BRIDGE AUTHORITY

Management's Discussion and Analysis

Operating expenses, which were budgeted to be \$84.1 million, were \$62.2 million. Repairs, rehabilitation, and reconstruction was budgeted for \$48.1 million, but actual was \$23.4 million as the rehabilitation, reconstruction, and bridge repair work was impacted by changes in expected trending of large projects. The day-to-day operating budget, which was forecasted at \$35.9 million, came in at \$38.8 million. Operating reductions compared to budget arose from several different expense types. Salaries were \$1.3 million lower due to measures to control staffing costs associated with COVID-19 with vacant positions that remained unfilled. Employee benefits were \$5.7 million higher as a result of both the impact of provisions associated with GASB Statement No. 68 - "Accounting and Financial Reporting for Pensions - an Amendment of GASB Statement No. 27" and the effects of GASB Statement No. 75 - "Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions" (see accompanying notes to financial statements). Professional services were lower by \$0.6 million as the use of the traffic consultant in 2019 for the toll schedule revision did not continue into 2020, the routine inspection cycle, and reductions in legal fees. Maintenance and repairs were lower by \$0.6 million as a result of lower costs associated with lower general repairs and maintenance, lower snow removal, and lower fuel costs than projected. Electronic toll costs were lower by \$0.5 million as the Authority projected somewhat higher E-ZPass utilization. Depreciation was lower by \$0.2 million as some equipment purchases were delayed until 2021.

The Authority's five year capital plan budgeted \$48.1 million in 2020 while actual costs totaled \$23.4 million. The \$24.7 million variance was the result of delays in several projects. The project to replace the Authority's toll system was projected at \$12.5 million in 2020 and did not materially commence until January 2021. Rehabilitation at Mid-Hudson Bridge also had a project to rehabilitate the curb and box beams that was projected at \$10 million in 2020 with the majority of the project extending into 2021. Delayed work from 2020 will be carried out in 2021.

TOTAL CAPITAL ASSETS AND LONG TERM DEBT

At December 31, 2020, the Authority's net investment in capital assets was \$104.7 million. Capital assets include bridges, roads, buildings, and equipment. In order to finance the commitment to its program of rehabilitation and improvement of the bridge facilities, in April 2012, the Authority issued \$90 million General Revenue Bonds, the Series 2012 Bonds, in support of the capital program. All Authority revenue is pledged to repay these bonds. As of December 31, 2020, \$66.5 million of debt remained outstanding and funds were in reserve to retire \$8.4 million bonds on January 1, 2021.

In 2020, Standard & Poor's maintained the Authority's A+ rating with a negative out outlook for the entire toll sector associated with COVID-19. Moody's Investors Service in 2019 affirmed the Aa3 rating on the Authorities General Revenue Bonds with a stable outlook.

MODIFIED APPROACH FOR INFRASTRUCTURE ASSETS

The Authority has adopted the modified approach in reporting its infrastructure assets. This is an alternative to depreciating its bridge facilities, which requires the Authority to maintain its infrastructure at a certain measurable standard and report the associated cost as preservation (rehabilitation, reconstruction and bridge repair) expenses.

NEW YORK STATE BRIDGE AUTHORITY

Management's Discussion and Analysis

The condition of the Authority's bridge facilities is determined through annual inspections performed in accordance with New York State Department of Transportation (NYSDOT) requirements and Federal Highway Administration guidelines. The yearly inspections by the Authority's consulting engineers, Modjeski & Masters, Inc., measures the ability of each facility to function structurally, utilizing a NYSDOT condition rating ranging between 1 and 7. The Authority's policy is to keep the overall condition rating of each vehicular bridge at a 5, meaning that the bridge shows minor deterioration but is functioning as originally designed.

ADDITIONAL INFORMATION

This report is provided for the use of the Authority's bondholders, the investment community and members of the public interested in the Authority's affairs. Questions with regard to this financial report or requests for additional information may be addressed to the Treasurer, New York State Bridge Authority, P.O. Box 1010, Highland, New York 12528.

NEW YORK STATE BRIDGE AUTHORITY

Statements of Net Position
December 31, 2020 and 2019

	<u>2020</u>	<u>2019</u>
Assets:		
Current assets:		
Cash and equivalents	\$ 13,014,037	10,793,575
Investments	75,579,850	80,084,302
Accounts receivable	2,355,198	2,727,394
Prepaid expenses	2,170,438	2,094,497
Total current assets	<u>93,119,523</u>	<u>95,699,768</u>
Noncurrent assets:		
Capital assets, net of accumulated depreciation	20,339,054	22,087,228
Bridge system	84,358,269	84,358,269
Total noncurrent assets	<u>104,697,323</u>	<u>106,445,497</u>
Total assets	<u>197,816,846</u>	<u>202,145,265</u>
Deferred outflows of resources:		
Pension	7,408,847	2,478,278
Other post employment benefits	17,422,591	12,894,128
Total deferred outflows of resources	<u>24,831,438</u>	<u>15,372,406</u>
Liabilities:		
Current liabilities:		
Accounts payable and accrued expenses	3,529,603	1,858,193
Accrued wages, payroll taxes and fringe benefits	305,547	255,994
Contracts payable	2,513,416	545,280
Accrued interest on bonds	1,429,850	1,590,950
General revenue bonds, current portion, net	9,245,709	8,920,709
Total current liabilities	<u>17,024,125</u>	<u>13,171,126</u>
Noncurrent liabilities:		
Total OPEB liability	71,128,364	59,468,998
Compensated absences	746,080	656,095
Unearned revenues	595,333	700,710
Net pension liability - proportionate share-ERS	10,517,546	2,802,812
General revenue bonds, net	62,418,546	71,664,256
Total noncurrent liabilities	<u>145,405,869</u>	<u>135,292,871</u>
Commitments and contingencies (note 13)		
Total liabilities	<u>162,429,994</u>	<u>148,463,997</u>
Deferred inflows of resources:		
Pension	347,530	1,024,626
Postemployment benefits	1,102,800	2,029,526
Total deferred inflows of resources	<u>1,450,330</u>	<u>3,054,152</u>
Net position:		
Net investment in capital assets	104,697,323	106,445,497
Restricted for:		
Debt service	19,740,342	19,496,728
Insurance	12,711,662	12,225,533
Maintenance reserve	45,959,102	54,473,406
Unrestricted (deficit)	<u>(124,340,469)</u>	<u>(126,641,642)</u>
Total net position	<u>\$ 58,767,960</u>	<u>65,999,522</u>

See accompanying notes to financial statements.

NEW YORK STATE BRIDGE AUTHORITY
Statements of Revenue, Expenses and Changes in Net Position
Years ended December 31, 2020 and 2019

	<u>2020</u>	<u>2019</u>
Operating revenue:		
Toll revenue	\$ 54,591,434	58,968,656
Grant revenue	-	1,500,000
Other income	<u>727,225</u>	<u>820,140</u>
Total operating revenue	<u>55,318,659</u>	<u>61,288,796</u>
Operating expenses:		
Salaries	11,586,818	11,712,974
Employee benefits	14,459,998	9,855,637
Utilities	608,904	688,066
Insurance	2,125,114	1,773,269
Professional services	647,705	1,060,982
Supplies and materials	298,905	315,125
Equipment expense	189,575	302,664
Maintenance and repairs	588,729	802,373
Electronic toll costs	5,052,802	4,376,913
Depreciation	2,389,969	2,240,758
Other	<u>834,798</u>	<u>698,139</u>
Total operating expenses before rehabilitation, reconstruction and bridge repairs	38,783,317	33,826,900
Rehabilitation, reconstruction and bridge repairs	<u>23,408,954</u>	<u>18,367,277</u>
Total operating expenses	<u>62,192,271</u>	<u>52,194,177</u>
Operating income	<u>(6,873,612)</u>	<u>9,094,619</u>
Nonoperating revenue (expenses):		
Interest income	1,210,506	1,822,181
Changes in fair value of investments	428,035	753,813
Interest and other expenses	<u>(1,996,491)</u>	<u>(2,318,691)</u>
Total nonoperating revenue (expenses)	<u>(357,950)</u>	<u>257,303</u>
Change in net position	(7,231,562)	9,351,922
Beginning of the year	<u>65,999,522</u>	<u>56,647,600</u>
End of the year	<u>\$ 58,767,960</u>	<u>65,999,522</u>

See accompanying notes to financial statements.

NEW YORK STATE BRIDGE AUTHORITY
Statements of Cash Flows
Years ended December 31, 2020 and 2019

	<u>2020</u>	<u>2019</u>
Cash flows from operating activities:		
Toll revenue	\$ 54,963,631	59,432,978
Payments to suppliers	(7,972,758)	(10,489,336)
Payments to contractors	(22,219,122)	(21,021,534)
Payments for wages and employee benefits	(17,596,032)	(18,226,185)
Other receipts	621,846	2,112,210
Net cash provided by operating activities	<u>7,797,565</u>	<u>11,808,133</u>
Cash flows from capital financing activities:		
Purchases of capital assets	(641,795)	(444,106)
Principal paid on bonds payable	(8,920,710)	(8,610,709)
Interest paid on bonds payable	(2,157,591)	(2,473,591)
Net cash used in capital financing activities	<u>(11,720,096)</u>	<u>(11,528,406)</u>
Cash flows from investing activities:		
Change in invested funds	4,932,487	(2,478,427)
Interest on investments	1,210,506	1,822,181
Net cash provided by (used in) investing activities	<u>6,142,993</u>	<u>(656,246)</u>
Net change in cash and equivalents	2,220,462	(376,519)
Cash and equivalents at beginning of year	<u>10,793,575</u>	<u>11,170,094</u>
Cash and equivalents at end of year	<u>\$ 13,014,037</u>	<u>10,793,575</u>
Reconciliation of operating income to net cash provided by operating activities:		
Operating income	(6,873,612)	9,094,619
Adjustments to reconcile operating loss to net cash provided by operating activities:		
Depreciation expense	2,389,969	2,240,758
Changes in:		
Accounts receivable	372,196	464,322
Prepaid expenses	(75,941)	(173,529)
Accounts payable and accrued expenses	1,671,410	(1,403,313)
Accrued wages, payroll taxes, fringe benefits, pension and OPEB changes	8,450,784	3,342,426
Contracts payable	1,968,136	(1,549,220)
Unearned revenue	(105,377)	(207,930)
Net cash provided by operating activities	<u>\$ 7,797,565</u>	<u>11,808,133</u>

See accompanying notes to financial statements.

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements

December 31, 2020 and 2019

(1) Organization

(a) Nature of Activities

The New York State Bridge Authority (the Authority) is a Public Benefit Corporation created in 1932 and existing pursuant to Title 2, of Article 3 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State of New York (the Act). The Act provides that the Authority shall continue its corporate existence and operate and maintain its bridge facilities so long as it shall have bonds or other obligations outstanding and until its existence shall be terminated by law. The Authority currently operates and maintains the Rip Van Winkle, Kingston-Rhinecliff, Mid-Hudson, Newburgh-Beacon, and Bear Mountain bridges crossing over the Hudson River. The Authority also holds and maintains the structure for the Walkway Over the Hudson pedestrian bridge. The Authority consists of a seven member Board appointed by the Governor with the advice and consent of the Senate. The Authority's financial statements are included in the New York State Comprehensive Annual Financial Report.

As part of the New York State 2020 Budget Section 527 of the Public Authorities Law was amended adding a new subdivision 3. This subdivision terminated the existing Board Members terms resulting in their replacement in August 2020. Subdivision 3 also authorized the Authority to enter into a coordination agreement with the New York State Thruway Authority to address the optimization of services to create efficiencies between the two entities.

(b) Reporting Entity

The financial reporting entity is based on criteria set forth by the Governmental Accounting Standards Board (GASB). The financial reporting entity consists of the organizations for which the Authority is financially accountable and other organizations for which the nature and significance of their relationship with the Authority are such that exclusion would cause the reporting entity's financial statements to be misleading or incomplete.

The accompanying financial statements present the activities of the Authority. The Authority is a component unit of New York State. The decision to include a potential component unit in the Authority's reporting entity is based on several criteria including legal standing, fiscal dependency and financial accountability. Based on the application of these criteria, the following entity is not included in the Authority's financial statements:

Historic Bridges of the Hudson Valley, Inc.

This organization is a private not-for-profit entity organized for the purpose of establishing a museum to educate the public regarding bridges spanning the Hudson River. The organization's board of directors includes one member of the Authority's board as well as Authority management. The Authority's Board does not appoint members of this organization's governing board.

The Authority provided a payment of \$60,400 and \$58,200 in 2020 and 2019, respectively, for services related to education and obtaining grants to fund a future museum. It is anticipated the organization will continue to run on donations and future grants from New York State and other entities.

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(2) Significant Accounting Policies

(a) Basis of Presentation, Measurement Focus and Basis of Accounting

The accompanying financial statements have been prepared on the accrual basis of accounting in conformity with accounting principles generally accepted in the United States of America. GASB is the accepted standards setting body for establishing governmental accounting and financial reporting principles.

The operations of the Authority are reported under the business-type activities model and, as such, are accounted for on a flow of economic resources measurement focus and the accrual basis of accounting. Within this measurement focus, all assets and liabilities, and deferred inflows and outflows of resources associated with operations are included in the statement of net position with revenues recorded when earned and expenses recorded when incurred. The business-type activities model requires the Authority to include a statement of net position, a statement of revenue, expenses and changes in net position and a statement of cash flows. The statements require the classification of net position into three components - invested in capital assets, net of related debt; restricted; and unrestricted. These classifications are defined as follows:

Net Investment in Capital Assets - This component of net position consists of capital assets, net of accumulated depreciation, reduced (as applicable) by the outstanding balances of any bonds, mortgages, notes, or other borrowings that are attributable to the acquisition, construction, or improvement of those assets. Substantially all of the outstanding borrowings at December 31, 2020 and 2019 are to finance the cost of rehabilitation, reconstruction and bridge repair expenses which are treated as period costs. As such, this debt is not considered for purposes of determining that portion of net position invested in capital assets.

Restricted - This component of net position consists of constraints placed on net position use through external restrictions imposed by creditors (such as through debt covenants), contributors, or laws or regulations of other governments or restrictions imposed by law through constitutional provisions or enabling legislation.

Unrestricted - This component of net position consists of net position that does not meet the definition of "restricted" or "invested in capital assets".

For internal accounting and reporting, the accounts of the Authority are maintained in conformity with fund accounting. Fund accounting facilitates the observance of statutory limitations and restrictions on the use of resources.

The following funds were established by the Authority in compliance with Article V, Section 5.02 of the General Revenue Bond Resolution ("Series 1997 Resolution") adopted December 19, 1996. These funds are grouped by fund type in accordance with generally accepted accounting principles for governmental entities. All monies are to be transferred to such funds in accordance with terms outlined below, and held in depository by the designated Trustee, with the exception of the operating fund.

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(2) Significant Accounting Policies, Continued

(a) Basis of Presentation, Measurement Focus and Basis of Accounting, Continued

(1) General Fund

(a) Revenue Fund

Established to receive daily tolls and make payments to the designated funds in accordance with the terms outlined below.

(b) Operating Fund

Established to make payments from amounts received from the revenue fund, as may be required for the reasonable and necessary operating expenditures of the Authority. Amounts to be maintained in the operating fund are limited to amounts not more than sufficient to provide for reasonable and necessary operating expenditures for the remainder of the current month and ensuing two months.

(c) General Fund

Established to hold monies not required by other Authority designated funds, for any other lawful corporate purpose of the Authority.

(2) Debt Service Funds

(a) Debt Service Fund

Established to make principal and interest payments to the Trustee or paying agent required by the Series 1997 Resolution, from amounts received from the revenue fund.

(b) Debt Service Reserve Fund

Established to receive payments from the revenue fund to the extent necessary to make the amount in such fund, as of the date of the calculation, equal to the maximum amount of principal and interest due to be paid on bonds then outstanding in the then current or any future fiscal year to which the calculation relates, excluding interest to be paid from monies held in the debt service fund.

(c) Subordinated Indebtedness Fund

Established to issue evidences of indebtedness payable out of, and which may be secured by a pledge of, such amounts in the subordinated indebtedness fund or general fund as may from time to time be available for the purpose of payment thereof.

(d) Rebate Fund

Established to hold monies for rebates of certain investment earnings.

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(2) Significant Accounting Policies, Continued

(a) Basis of Presentation, Measurement Focus and Basis of Accounting, Continued

(3) Capital Projects Fund

(a) Construction Fund

Established to hold monies paid into it from the sale of bonds to pay for costs of "The Project" or any "Additional Projects" as defined in the Series 1997 Resolution. Any remaining money upon completion or abandonment of such projects shall be transferred to other funds in accordance with the terms of the Series 1997 Resolution.

(b) Maintenance Reserve Fund

Established to make payments from amounts received from the revenue fund, for the cost of construction of additions, improvements or betterments to, or reconstruction of Authority bridge facilities, renewals or replacements of Authority facilities and for the purchase of major or extraordinary vehicles and equipment necessary to operate and/or maintain the Authority bridge facilities.

(c) Insurance Fund

Established to receive payments from the revenue fund to the extent that, together with multi-risk insurance, it shall provide for the adequate protection against the physical loss or damage of a bridge facility. Additionally, the Authority may pay into a separate account in this fund, amounts sufficient to provide coverage, in addition to, or instead of, such commercial insurance policies required by the Series 1997 Resolution.

(b) Cash Deposits and Investments

The Authority is limited under its investment guidelines to the investment of funds in obligations of the United States of America (United States Government Securities), the State of New York or certificates of deposit. All cash and funds invested in certificates of deposit in any fiduciary bank or trust company must be secured at all times by United States Government Securities or obligations of the State of New York, with a market value, combined with any FDIC coverage, at least equal to the amount of such deposits. Monies held by the trustee may also be secured by obligations guaranteed by the United States of America. Investments, consisting principally of U.S. Treasury obligations and certificates of deposit with a remaining maturity of one year or less at the time of purchase, are stated at cost plus accrued interest.

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(2) Significant Accounting Policies, Continued

(b) Cash Deposits and Investments, Continued

Fair Value Measurements and Disclosures

A framework has been established for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy are described below:

Level 1 - Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the Authority has the ability to access.

Level 2 - Inputs to the valuation methodology include:

- Quoted prices for similar assets or liabilities in active markets;
- Quoted prices for identical or similar assets or liabilities in inactive markets;
- Inputs other than quoted prices that are observable for the assets or liabilities; and
- Inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3 - Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

(c) Capital Assets

Capital assets include buildings, furniture and equipment and the Walkway Over the Hudson structure. Capital assets purchased or acquired with an original cost of \$5,000 or more are reported at historical cost or estimated historical cost. Additions, improvements and other capital outlays that significantly extend the useful life of an asset are capitalized. Other costs incurred for repairs and maintenance are expensed as incurred. Depreciation on all assets is provided on the straight line basis over the following estimated useful lives:

Buildings	30 years
Furniture and equipment	3 - 10 years
Walkway Over the Hudson structure	20 years

(d) Bridge System

The bridge system consists of five bridges (6 spans) spanning the Hudson River together with the related toll plazas and approaches. The bridge system is reported at historical cost. The Authority uses the modified approach to account for the bridge system. Under the modified approach expenditures for additions and improvements to eligible infrastructure assets, which increase capacity or efficiency of the assets rather than

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(2) Significant Accounting Policies, Continued

(d) Bridge System, Continued

preserve their lives, are capitalized. All other expenditures, including preservation costs, are expensed in the period incurred and the bridge system is not depreciated. The Authority performs condition assessments on the bridge system, makes annual estimates of the outlay necessary to maintain and preserve the assets at predetermined condition levels and documents that the assets are being maintained at the predetermined condition level.

(e) Real Property

Real property utilized by the Authority is held in the name of the State of New York. The Authority has, however, the right to possess and, with the approval of the Commissioner of Transportation, to sell, lease, exchange, or otherwise dispose of any property or rights therein, not necessary for its corporate purpose.

(f) Compensated Absences

In conformity with pronouncements of GASB, the Authority accrues vacation and other benefits as earned by its employees.

(g) Subsequent Events

Management has evaluated subsequent events through the date of the report which is the date the financial statements were available to be issued.

The United States is presently in the midst of a national health emergency related to the COVID-19 virus. The overall consequences of the COVID-19 virus on a national, regional and local level are unknown, but has the potential to result in a significant economic impact. The impact of this situation on the Authority and its future results and financial position is not presently determinable.

(h) Operating Revenue

Operating revenues consist principally of toll revenue.

(i) Unearned Revenue

The Authority provides access to fiber cables across its bridges through a contract leasing arrangement to various interested users for a term no longer than ten years. One user has paid in advance the entire amount of two separate leases, the long-term balance remaining is \$595,333 and 700,710 at December 31, 2020 and 2019, respectively.

(j) Nonoperating Revenue

Nonoperating revenues consist of interest income and changes in fair value of investments.

(k) Operations

Provisions of the Series 1997 Resolution require that revenue in excess of expenses for operation and maintenance of the bridge system be used first for the payment of interest and principal on outstanding bonds, then for debt service reserve, subordinated indebtedness (if any), insurance, maintenance reserve, construction and finally general fund requirements. It also requires that expenses for operation and maintenance of the bridge system shall not include any provisions for depreciation of the bridge facilities and equipment, other noncash operating activity (employee benefits) or any principal payment on bonds outstanding or any other debt obligation of the Authority.

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(2) Significant Accounting Policies, Continued

(k) Operations, Continued

The Authority's right to operate and collect tolls for the use of the Newburgh-Beacon Bridge is governed in part by an agreement dated December 15, 1988, between the Authority, the State of New York and the United States Department of Transportation. Consistent with the terms of Section 120(c)(2) of Public Law 100-17 and Section 402 of Title II of Public Law 101-45, the Agreement permits the use of revenues collected at that bridge only for construction and reconstruction, debt service, proper operation and maintenance of the bridges, approach roads and support facilities subject to the jurisdiction of the Authority.

(l) Deferred Outflows and Inflows of Resources

Deferred outflows of resources represents a consumption of net position that applies to a future period and so will not be recognized as an outflow of resources (expense/expenditure) until then. The Authority has three items that qualify for reporting in this category. The first item is related to pensions reported in the Statements of Net Position. This represents the effect of the net change in the Authority's proportion of the collective net pension asset or liability and difference during the measurement period between the Authority's contributions and its proportion share of total contributions to the pension systems not included in pension expense along with changes in actuarial assumptions. The second item is the Authority contributions to the pension system subsequent to the measurement date. The third item is the effect of changes in assumptions related to the total OEPB liability.

The Authority also records deferred inflows of resources, which represents acquisitions of net position that applies to future periods and so will not be recognized as inflow of resources (revenue) until that time. The amounts recorded at December 31, 2020 and 2019 represent the change in the proportion between the Authority's pension contributions and proportionate share of contributions and differences between expected and actual experience. Additionally, the Authority records changes in assumptions relating to the total OPEB liability that will be reflected in future periods.

(3) Cash and Equivalents

The carrying amount of the Authority's deposits with financial institutions at December 31, 2020 totaled \$13,014,037, the bank balance was \$3,171,564 and investment brokerage accounts were \$9,842,473. The bank balance is collateralized/secured as follows:

Amount insured by FDIC	\$ 250,000
Collateral held by a third party in the Authority's name	1,219,687
Insured investments brokerage accounts	<u>9,842,473</u>
	\$ <u>11,312,160</u>

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(4) Investments

The par and market value of investments (United States Government Securities) held by the Authority as of December 31, 2020 and 2019 are summarized as follows:

<u>Restricted</u>	<u>2020</u>		<u>2019</u>	
	<u>Par</u>	<u>Market</u>	<u>Par</u>	<u>Market</u>
Debt Service Reserve Fund -				
U.S. Treasury Notes	\$ 10,908,000	11,329,466	11,075,000	11,319,692
Insurance Fund - U.S.				
Treasury Notes	11,983,000	12,710,294	11,835,000	12,095,314
Maintenance Reserve Fund -				
U.S. Treasury Notes and Bills	<u>47,528,000</u>	<u>48,472,139</u>	<u>53,303,000</u>	<u>55,002,571</u>
Total Restricted	70,419,000	72,511,899	76,213,000	78,417,577
Revenue Fund (Unrestricted) -				
U.S. Treasury Notes	<u>3,068,000</u>	<u>3,067,951</u>	<u>1,655,000</u>	<u>1,666,725</u>
Total	\$ <u>73,487,000</u>	<u>75,579,850</u>	<u>77,868,000</u>	<u>80,084,302</u>

All Authority investment securities are held by the financial institution's trust department in the entity's name. At December 31, 2020, the Authority's investments and maturities were as follows:

<u>Investment Type</u>	<u>Fair Value</u>	<u>Less than one year</u>	<u>1 to 5 years</u>
U.S. Treasury Notes and Bills	\$ <u>75,579,850</u>	<u>54,406,048</u>	<u>21,173,802</u>

The Authority categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The Authority's policy is to record the U.S. Treasury Notes and Bills at cost plus accrued interest as it intends to hold these securities to maturity.

The Authority has the following recurring fair value measurements as of December 31, 2020:

- U.S. Treasury securities of \$75,579,850 are valued using quoted market prices (Level 1 inputs).

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(5) Funds Held For Restricted Purposes

At December 31, 2020 and 2019, funds held for restricted purposes by fund category consisted of the following:

<u>2020</u>				
	<u>Cash and Equivalents</u>	<u>United States Governmental Securities</u>	<u>Related Liabilities</u>	<u>Total</u>
Debt Service Funds:				
Debt service fund	\$ 9,839,460	-	(1,429,850)	8,409,610
Debt service reserve fund	<u>1,266</u>	<u>11,329,466</u>	<u>-</u>	<u>11,330,732</u>
Fund total	<u>9,840,726</u>	<u>11,329,466</u>	<u>(1,429,850)</u>	<u>19,740,342</u>
Capital Projects Funds:				
Insurance fund	1,368	12,710,294	-	12,711,662
Maintenance reserve fund	<u>379</u>	<u>48,472,139</u>	<u>(2,513,416)</u>	<u>45,959,102</u>
Fund total	<u>1,747</u>	<u>61,182,433</u>	<u>(2,513,416)</u>	<u>58,670,764</u>
Combined total	\$ <u>9,842,473</u>	<u>72,511,899</u>	<u>(3,943,266)</u>	<u>78,411,106</u>
<u>2019</u>				
	<u>Cash and Equivalents</u>	<u>United States Governmental Securities</u>	<u>Related Liabilities</u>	<u>Total</u>
Debt Service Funds:				
Debt service fund	\$ 9,765,330	-	(1,590,950)	8,174,380
Debt service reserve fund	<u>2,656</u>	<u>11,319,692</u>	<u>-</u>	<u>11,322,348</u>
Fund total	<u>9,767,986</u>	<u>11,319,692</u>	<u>(1,590,950)</u>	<u>19,496,728</u>
Capital Projects Funds:				
Insurance fund	130,219	12,095,314	-	12,225,533
Maintenance reserve fund	<u>16,115</u>	<u>55,002,571</u>	<u>(545,280)</u>	<u>54,473,406</u>
Fund total	<u>146,334</u>	<u>67,097,885</u>	<u>(545,280)</u>	<u>66,698,939</u>
Combined total	\$ <u>9,914,320</u>	<u>78,417,577</u>	<u>(2,136,230)</u>	<u>86,195,667</u>

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(6) Capital Assets

Capital assets at December 31, 2020 and 2019 consist of the following:

	2020			Balance December 31, 2020
	Balance December 31, 2019	Additions	Disposals	
Walkway Over The Hudson - structure	\$ 32,758,706	-	-	32,758,706
Buildings	8,286,248	-	-	8,286,248
Furniture and equipment	9,611,655	641,795	(288,744)	9,964,706
	50,656,609	641,795	(288,744)	51,009,660
Less accumulated depreciation	(28,569,381)	(2,389,969)	288,744	(30,670,606)
	\$ 22,087,228	(1,748,174)	-	20,339,054
	2019			Balance December 31, 2019
	Balance December 31, 2018	Additions	Disposals	
Construction in progress	\$ 21,077	3,034	(24,111)	-
Walkway Over The Hudson - structure	32,758,706	-	-	32,758,706
Buildings	8,262,137	24,111	-	8,286,248
Furniture and equipment	9,570,703	441,072	(400,120)	9,611,655
	50,612,623	468,217	(424,231)	50,656,609
Less accumulated depreciation	(26,728,743)	(2,240,758)	400,120	(28,569,381)
	\$ 23,883,880	(1,772,541)	(24,111)	22,087,228

Depreciation expense for the years ended December 31, 2020 and 2019 amounted to \$2,389,969 and \$2,240,758, respectively.

In 2010, the pedestrian bridge known as the Walkway Over The Hudson was transferred to the Authority at a historical cost of \$32,758,706. Additionally, the Authority received fully depreciated equipment of \$80,000.

(7) Bridge System

The bridge system consists of five bridges (six spans) spanning the Hudson River together with the related toll plazas and approaches. The bridge system is recorded at cost and consists of the following at December 31, 2020 and 2019:

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(7) Bridge System, Continued

<u>Bridge Facility</u>	<u>Opened</u>	<u>2020</u>	<u>2019</u>
Rip Van Winkle Bridge	1935	\$ 2,299,147	2,299,147
Kingston-Rhinecliff Bridge	1957	20,536,609	20,536,609
Mid-Hudson Bridge	1930	12,957,846	12,957,846
Newburgh-Beacon Bridge	1963 and 1980	44,223,796	44,223,796
Bear Mountain Bridge	1924	<u>4,340,871</u>	<u>4,340,871</u>
		\$ <u>84,358,269</u>	<u>84,358,269</u>

(8) Bonded Indebtedness

On May 22, 2012, the Authority issued \$90,325,000 in General Revenue Bonds (Series 2012) in the open market in order to provide funds to finance a portion of the costs of the 2012 Project, which consisted of certain reconstruction and rehabilitation projects for the Authority's bridge system. The proceeds were used to (a) fund the debt service reserve fund to the level required by the bond resolution and (b) pay the costs of issuance of the Series 2012 bonds.

Changes in indebtedness for the years ended December 31, 2020 and 2019 are summarized as follows:

<u>2020</u>					
	Balances at December 31, <u>2019</u>	<u>Additions</u>	<u>Deductions</u>	Balances at December 31, <u>2020</u>	<u>Due within one year</u>
Series 2012	\$ 74,525,000	-	(8,055,000)	66,470,000	8,380,000
Unamortized bond premium	<u>6,059,965</u>	<u>-</u>	<u>(865,710)</u>	<u>5,194,255</u>	<u>865,709</u>
Total revenue bonds	\$ <u>80,584,965</u>	<u>-</u>	<u>(8,920,710)</u>	<u>71,664,255</u>	<u>9,245,709</u>
<u>2019</u>					
	Balances at December 31, <u>2018</u>	<u>Additions</u>	<u>Deductions</u>	Balances at December 31, <u>2019</u>	<u>Due within one year</u>
Series 2012	\$ 82,270,000	-	(7,745,000)	74,525,000	8,055,000
Unamortized bond premium	<u>6,925,674</u>	<u>-</u>	<u>(865,709)</u>	<u>6,059,965</u>	<u>865,709</u>
Total revenue bonds	\$ <u>89,195,674</u>	<u>-</u>	<u>(8,610,709)</u>	<u>80,584,965</u>	<u>8,920,709</u>

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(8) Bond Indebtedness, Continued

The bonds have serial maturities as of December 31, 2020 as follows:

		<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2021	\$	8,380,000	2,524,500	10,904,500
2022		8,710,000	2,176,100	10,886,100
2023		9,060,000	1,813,700	10,873,700
2024		9,425,000	1,436,700	10,861,700
2025		9,800,000	946,700	10,746,700
2026 - 2027		<u>21,095,000</u>	<u>432,200</u>	<u>21,527,200</u>
		66,470,000	9,329,900	75,799,900
Plus: unamortized bond premium		<u>5,194,255</u>	<u>-</u>	<u>5,194,255</u>
	\$	<u>71,664,255</u>	<u>9,329,900</u>	<u>80,994,155</u>

The Series 2012, which bear interest at rates ranging from 2% to 5%, are general obligations of the Authority and are payable from and secured by a pledge of all monies or revenues of the Authority, including tolls and other revenues derived from the operations of the Authority's bridge facilities.

The Series 2012 Bonds maturing on or after January 1, 2023 are subject to redemption prior to maturity, at the option of the Authority, as a whole or in part at any time on or after January 1, 2022, at the redemption price of par plus accrued interest to the redemption date. The Bonds are subject to optional redemption on any date prior to maturity at the option of the Authority, as a whole or in part at the Make-Whole Redemption Price.

The Authority anticipates issuing \$90 million of 30 year long-term bonds to support the capital programs as cash requirements necessitate.

(9) Retirement Plan

(a) Plan Descriptions and Benefits Provided

Employees' Retirement System (ERS)

The Authority participates in the New York State and Local Employees' Retirement System (ERS). This is a cost-sharing multiple-employer retirement system. The System provides retirement benefits as well as death and disability benefits. The net position of the System is held in the New York State Common Retirement Authority (the Authority), which was established to hold all net assets and record changes in plan net position allocated to the System. The Comptroller of the State of New York serves as the trustee of the Authority and is the administrative head of the System. System benefits are established under the provision of the New York State Retirement and Social Security Law (RSSL). Once a public employer elects to participate in the System, the election is irrevocable. The New York State Constitution provides that pension membership is a contractual relationship and plan benefits cannot be diminished or impaired. Benefits can be changed for future members only by enactment of a State

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(9) Retirement Plan, Continued

(a) Plan Descriptions and Benefits Provided, Continued

statute. The Authority also participates in the Public Employees' Group Life Insurance Plan (GLIP), which provides death benefits in the form of life insurance. The System is included in the State's financial report as a pension trust fund. That report, including information with regard to benefits provided, may be found at www.osc.state.ny.us/retire/publications/inex.php or obtained by writing to the New York State and Local Retirement System, 110 State Street, Albany, New York 12244.

The System is noncontributory except for employees who joined after July 27, 1976, who contribute 3 percent of their salary for the first ten years of membership, and employees who joined on or after January 1, 2010 and before April 1, 2012 who generally contribute 3.0 percent of their salary for their entire length of service. In addition, employee contribution rates under ERS tier VI vary based on a sliding salary scale. The Comptroller annually certifies the actuarially determined rates expressly used in computing the employers' contributions based on salaries paid during the Systems fiscal year ending March 31.

Contributions for the current year and two preceding years were equal to 100 percent of the contributions required, and were as follows:

	<u>ERS</u>
2020	\$ 1,448,973
2019	1,445,115
2018	1,465,310

(b) Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At December 31, 2020, the Authority reported the following liability for its proportionate share of the net pension liability for ERS. The net pension liability was measured as of March 31, 2020. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation. The Authority's proportionate share of the net pension liability was based on a projection of the Authority's long-term share of contributions to the System relative to the projected contributions of all participating members, actuarially determined. This information was provided by ERS in reports provided to the Authority.

Actual valuation date	4/1/2019	4/1/2018
Measurement date	3/31/2020	3/31/2019
Net pension liability	\$10,517,546	2,802,812
Authority's proportion of the Plan's net pension liability	0.0397180%	0.0395581%
Change in proportion	0.0001599	0.0021082

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(9) Retirement Plan, Continued

(b) Pension Liabilities. Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions, Continued

For the years ended December 31, 2020 and 2019, the Authority recognized pension expense of \$3,555,078 and \$1,843,561 for ERS, respectively. At December 31, 2020 and 2019 the Authority's reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	2020		2019	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 619,000	-	551,932	188,148
Changes of assumption	211,774	182,863	704,512	-
Net difference between projected and actual earnings on pension plan , investments	5,391,805	-	-	719,356
Changes in proportion and differences between the Authority's contributions and proportionate share of contributions	99,538	164,667	137,998	117,122
Authority's contributions subsequent to the measurement date	<u>1,086,730</u>	<u>-</u>	<u>1,083,836</u>	<u>-</u>
Total	\$ <u>7,408,847</u>	<u>347,530</u>	<u>2,478,278</u>	<u>1,024,626</u>

Authority contributions subsequent to the March 31, 2020 measurement date will be recognized as a reduction of the net pension liability in the year ending December 31, 2021. Other amounts reported as deferred outflows of resources related to pensions will be recognized in pension expense as follows:

<u>Year ending</u>	<u>ERS</u>
2021	\$ 992,344
2022	1,500,985
2023	1,933,348
2024	1,547,910

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(9) Retirement Plan, Continued

(c) Actuarial Assumptions

The total pension liability as of the measurement date was determined by using an actuarial valuation as noted in the table below, with update procedures used to roll forward the total pension liability to the measurement date. The actuarial valuations used the following actuarial assumptions:

Significant actuarial assumptions used in the valuations were as follows:

Measurement date	March 31, 2020
Actuarial valuation date	April 1, 2019
Investment rate of return (net of investment expense, including inflation)	6.8%
Salary scale	4.2%
Cost-of-living adjustments	1.3%
Inflation rate	2.5%

Annuitant mortality rates are based on April 1, 2010 - March 31, 2015 System's experience with adjustments for mortality improvements based on MP-2018.

The actuarial assumptions used in the April 1, 2019 valuation are based on the results of an actuarial experience study for the period April 1, 2010 - March 31, 2015.

The long term rate of return on pension plan investments was determined using a building block method in which best estimate ranges of expected future real rates of return (expected return, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of the arithmetic real rates of return for each major asset class included in the target asset allocation are summarized below:

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(9) Retirement Plan, Continued

(c) Actuarial Assumptions, Continued

Measurement date

March 31, 2020

	<u>Target allocation</u>	<u>Long-term expected real rate of return</u>
Asset type:		
Domestic equity	36.0%	4.05%
International equity	14.0%	6.15%
Private equity	10.0%	6.75%
Real estate	10.0%	4.95%
Absolute return strategies	2.0%	3.25%
Opportunistic portfolio	3.0%	4.65%
Real assets	3.0%	5.95%
Bonds and mortgages	17.0%	0.75%
Cash	1.0%	0.00%
Inflation - indexed bonds	4.0%	0.50%

* The real rate of return is net of the long-term inflation assumption of 2.50%.

(d) Discount Rate

The discount rate used to calculate the total pension liability was 6.8%. The projection of cash flows used to determine the discount rate assumes that contributions from plan members will be made at the current contribution rates and that contributions from employers will be made at statutorily required rates, actuarially. Based upon the assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore the long term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

(e) Sensitivity of the Proportionate Share of the Net Pension Liability to the Discount Rate Assumption

The following presents the Authority's proportionate share of the net pension liability calculated using the discount rate of 6.8%, as well as what the Authority's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage point lower (5.8%) or 1-percentage point higher (7.8%) than the current rate:

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(9) Retirement Plan, Continued

(c) Sensitivity of the Proportionate Share of the Net Pension Liability to the Discount Rate Assumption, Continued

	1% Decrease (5.8%)	Current Assumption (6.8%)	1% Increase (7.8%)
Employer's proportionate share of the net pension liability	\$ <u>19,302,666</u>	<u>10,517,546</u>	<u>2,426,413</u>

(f) Pension Plan Fiduciary Net Position

The components of the current-year net pension (asset) liability of all participating employers as of the respective valuation dates, were as follows:

	(Dollars in Millions)	
Measurement date	3/31/2020	3/31/2019
Employers' total pension liability	\$ 194,596	189,803
Plan fiduciary net position	(168,115)	(182,718)
Employers' net pension liability	\$ <u>26,481</u>	<u>7,085</u>
Ratio of plan fiduciary net position to the Employers' total pension liability	86.39%	96.27%

(g) Contributions to the Pension Plan

Employer contributions are paid annually based on the System's fiscal year which ends on March 31st. Retirement contributions as of December 31, 2020 and 2019 represent the projected employer contribution for the period of April 1, 2020 through March 31, 2021 and April 1, 2019 through March 31, 2020, respectively based on paid ERS wages multiplied by the employer's contribution rate, by tier. This amount has been recorded as deferred outflows of resources in the accompanying financial statements.

(10) Postemployment Benefits

The Authority implemented GASB Statement No. 75 - Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions" effective for its fiscal year beginning January 1, 2018. With the adoption of this Statement, the method of calculating and recording the OPEB liability was changed significantly.

The Authority provides certain health care benefits for retired employees. Substantially all of the Authority's employees may become eligible for these benefits if they reach the normal retirement age, of the respective tier of the New York State Employees' Retirement System, while working for the Authority. The Authority, on an annual basis, accrues the cost which represents the present value of these benefits to be paid over the estimated lives of the retirees.

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(10) Postemployment Benefits, Continued

The number of participants as of January 1, 2020 and 2019 was as follows:

	<u>2020</u>	<u>2019</u>
Active employees	105	105
Retired employees	<u>156</u>	<u>156</u>
Total	<u>261</u>	<u>261</u>

A summary of the substantive plan used as the basis of the valuation follows:

All Retirees - Description of Benefits

Duration	Lifetime
Minimum Age	55 for eligibility for cost-sharing of health insurance premium and 65 for Medicare Part B. An employee who terminates prior to retirement and meets the service requirement may receive a retiree health benefit provided that the individual maintains coverage in a NYSHIP plan until retirement and pays the full health insurance premium of this duration.
Minimum Service	If hired before April 1, 1975, 5 years of service. Otherwise, 10 years of service.
Type of Coverage	Retiree may enroll in health and Medicare Part B insurance.
NYSBA Contribution	New York State Bridge Authority covers the total cost of enrollment in Medicare Part B and a percentage of health insurance premium based on Date of Hire.
Dependent Coverage	A survivor of a New York State Bridge Authority retiree is eligible for benefits if the survivor qualifies for a monthly survivor's pension.

Retiree Health Insurance Benefit

Benefit	Retiree health insurance coverage with NYSBA contribution toward premium.
Duration of Coverage	From the later of age 55 or retirement until death. Surviving spouses may continue coverage at 75% of the premium rate.

NYSBA Contribution:

<u>Date of Hire</u>	<u>NYSBA Contribution (Individual/Family Tiers)</u>
Prior to 4/1/1994	90% of Health Plan Premium for Individual and Family.
From 4/1/1994 to 4/1/2009	90% of Health Premium for Individual/75% of Premium difference of Family and Individual.
From 4/1/2009 to 6/19/2014	75% of Primmum for both Tiers
From 6/19/2014 to 3/31/2017	85% of Premium for Individual Tier/75% of Premium difference for Family and Individual.
After 3/31/2017	80% of Premium for Individual/75% of Premium difference of Family and Individual.

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(10) Postemployment Benefits, Continued

Medicare Part B Benefit

Duration of Coverage - From age 65 until death.

NYSBA Contribution - NYSBA reimburses 100% of premium for Employee and Spouse.

Total OPEB Liability

The Authority's total OPEB liability of \$71,128,364 and \$59,468,998 as measured as of December 31, 2020 and 2019, respectively, and was determined by an actuarial valuation as of these dates.

Actuarial Assumptions and Other Inputs

The total OPEB liability in the December 31, 2020 and 2019 actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

	<u>2020</u>	<u>2019</u>
Salary increases	2.75%	2.75%
Discount rate	2.00%	2.75%
Healthcare cost trend rates	5.5% for 2020, trending down to 3.94% over 54 years	6.0% for 2019 trending down to 4.27% over 55 years

Changes in the Total OPEB Liability

	<u>2020</u>	<u>2019</u>
Total OPEB liability as of January 1	\$ <u>59,468,998</u>	<u>41,367,368</u>
Changes for the year:		
Service cost	2,167,613	2,109,599
Interest on total OPEB liability	1,668,653	1,744,224
Differences between actual and expected experience	768,489	-
Changes in assumptions	8,971,200	16,117,661
Benefit payments	<u>(1,916,589)</u>	<u>(1,869,854)</u>
Total changes	<u>11,659,366</u>	<u>18,101,630</u>
Total OPEB liability as of December 31	\$ <u>71,128,364</u>	<u>59,468,998</u>

Sensitivity of the total OPEB liability to changes in the discount rate

The following presents the total OPEB liability of the Authority, as well as what the Authority's total OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current discount rate:

	<u>2020</u>		
	<u>1% Decrease (1.00%)</u>	<u>Discount Rate (2.00%)</u>	<u>1% Increase (3.00%)</u>
Total OPEB liability	\$ <u>86,310,542</u>	<u>71,128,364</u>	<u>59,317,558</u>

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(10) Postemployment Benefits, Continued

		2019		
		1% Decrease (1.75%)	Discount Rate (2.75%)	1% Increase (3.75%)
Total OPEB liability	\$	<u>71,809,906</u>	<u>59,468,998</u>	<u>49,833,628</u>

Sensitivity of the total OPEB liability to changes in the healthcare costs trend rates

The following presents the total OPEB liability of the Authority, as well as what the Authority's total OPEB liability would be if it were calculated using a rate that is 1-percentage point lower or 1-percentage point higher than the current trend rate:

		2020		
		1% Decrease (5.5%)	Trend Rate (6.5%)	1% Increase (7.5%)
Total OPEB liability	\$	<u>57,545,189</u>	<u>71,128,364</u>	<u>89,285,735</u>

		2019		
		1% Decrease (5.0%)	Trend Rate (6.0%)	1% Increase (7.0%)
Total OPEB liability	\$	<u>48,878,757</u>	<u>59,468,998</u>	<u>73,439,291</u>

For the year ended December 31, 2020 and 2019, the Authority recognized an OPEB expense of \$6,204,177 and \$6,150,630, respectively. At December 31, 2020 and 2019 the Authority reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	2020		2019	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 611,654	-	-	-
Changes of assumption	<u>16,810,937</u>	<u>1,102,800</u>	<u>12,894,128</u>	<u>2,029,526</u>
	<u>\$17,422,591</u>	<u>1,102,800</u>	<u>12,894,128</u>	<u>2,029,526</u>

Amounts reported as deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

<u>Year ending</u>	
2021	\$ 4,284,500
2022	5,035,152
2023	5,211,222
2024	1,788,917
2025	-
	<u>\$ 16,319,791</u>

NEW YORK STATE BRIDGE AUTHORITY

Notes to Financial Statements, Continued

(11) Administrative Services Assessment

Through the Public Authorities Law Section 2975, the State of New York (the State) established a cost recovery of central governmental services to various public authorities. This statute directs the New York State Division of the Budget to determine the amount to be assessed to each public authority. The State Treasurer imposes and collects the assessments which are deposited into the State's general fund. The administrative services assessment for the Authority for the years ended December 31, 2020 and 2019 amounted to \$369,000 each year, recorded in other expenses.

(12) Risk Management

The Authority purchases commercial insurance policies in varying amounts for general liability, vehicle liability, damage to fixed assets, and public officials and employee liability coverage. The Authority also pays unemployment claims to the State as incurred. There are no claims relating to the bridge facilities, however, the Authority has funded a reserve of \$12,711,662 at December 31, 2020 to meet its deductible should a claim arise.

(13) Commitments and Contingencies

The Authority is a defendant in a number of lawsuits. While the outcome of these lawsuits or other proceedings against the Authority cannot be predicted with certainty, the Authority does not expect that these matters will have a material adverse effect on its financial position.

(14) Accounting Standards Issued But Not Yet Implemented

GASB has issued the following pronouncements which will be implemented in the years required. The effects of the implementation of these pronouncements are not known at this time.

Statement No. 87 - Leases. Effective for fiscal years beginning after June 15, 2021.

Statement No. 89 - Accounting for Interest Cost Incurred before the End of a Construction Period. Effective for fiscal years beginning after December 15, 2020.

Statement No. 91 - Conduit Debt Obligations. Effective for fiscal years beginning after December 15, 2021.

Statement No. 92 - Omnibus 2020. Effective for fiscal years beginning after June 15, 2021.

NEW YORK STATE BRIDGE AUTHORITY
Notes to Financial Statements, Continued

(14) Accounting Standards Issued But Not Yet Implemented, Continued

Statement No. 93 - Replacement of Interbank Offered Rates. Effective for fiscal years beginning after June 15, 2021.

Statement No. 94 - Public-Private and Public-Public Partnerships and Availability Payment Arrangements. Effective for fiscal years beginning after June 15, 2022.

Statement No. 96 - Subscription-Based Information Technology Arrangements. Effective for fiscal years beginning after June 15, 2022.

Statement No. 97 - Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans. Effective for fiscal years beginning after June 15, 2021.

REQUIRED SUPPLEMENTARY INFORMATION

NEW YORK STATE BRIDGE AUTHORITY

Required Supplementary Information

Bridge System Assessments

December 31, 2020

<u>Condition Rating*</u>	Number of Bridges					
	<u>2020</u>		<u>2019</u>		<u>2018</u>	
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
New	-	-	-	-	-	-
Minor Deterioration	9	100%	9	100%	9	100%
Serious Deterioration	-	-	-	-	-	-
Totally Deteriorated	-	-	-	-	-	-
Total	<u>9</u>	<u>100%</u>	<u>9</u>	<u>100%</u>	<u>9</u>	<u>100%</u>

*The condition of the Authority's bridge system is determined using annual inspection procedures. The inspections are conducted in accordance with New York State Department of Transportation (NYSDOT) requirements and Federal Highway Administration Guidelines. The NYSDOT bridge condition rating, which is an assessment of the ability to function structurally, is determined during biennial inspections using a numerical condition scale ranging from 1.0 (totally deteriorated) to 7.0 (new condition). The complete NYSDOT numerical rating scale is as follows:

- 1 - Totally deteriorated, or in failed condition.
- 2 - Used to shade between ratings 1 and 3.
- 3 - Serious deterioration, or not functioning as originally designed.
- 4 - Used to shade between 3 and 5.
- 5 - Minor deterioration, but functioning as originally designed.
- 6 - Used to shade between 5 and 7.
- 7 - New condition, no deterioration.

The number of bridges included in the annual inspection process includes the six spans crossing the Hudson River and three overpasses. The Walkway Over the Hudson, which is a pedestrian bridge, is excluded.

It is the Authority's policy to keep the overall condition number of each bridge at a condition rating of at least 5.0. Presently, all bridges are inspected annually with three bridges receiving the more thorough biennial inspections and three receiving maintenance inspections.

NEW YORK STATE BRIDGE AUTHORITY

Required Supplemental Information

Bridge System Assessments, Continued

Estimated-to-Actual Capital Improvement Expenditures in (\$000's):

	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
Estimated	\$ 48,100	25,300	26,600	35,200	14,730	36,200
Actual	23,400	18,400	23,900	20,200	7,700	36,600

Significant variations between the estimated, or budgeted, and actual costs of capital improvements are noted in each year.

In 2015, actual capital improvement costs exceeded projections. This was a result of activities carried over from 2014. The redecking project for the Newburgh-Beacon south span was completed in 2015 on time and materially on budget.

In 2016 capital improvement costs of \$7.7 million were below budget projections of \$14.7 million. The Rip Van Winkle railing construction contract was awarded substantially lower than originally projected. In addition delays in fabrication reduced spending in 2016 on the project by over \$2.0 million. The two year railing project is expected to be completed on time and lower than original budget. Highway improvements at the Kingston-Rhinecliff Bridge that were originally projected for \$1.0 million had been pushed back to later years in the capital program due to more favorable conditions than anticipated based on annual inspections. Security camera replacements totaling \$1.0 million were initiated late in the year as technology enhancements were evaluated and will be spent in 2017. A roof replacement at the Mid-Hudson Bridge for \$0.5 million was moved to 2017 due to weather concerns.

In 2017 capital improvement costs of \$20.2 million were below the estimate of \$35.2 million as a result of two projects beginning later than expected. The first project, the redecking of an approach structure at Newburgh-Beacon, was rebid in 2017 saving the Authority \$3.5 million over the initial bid. The project is expected to commence in 2018 and run two years. The second project, repairs at the Walkway Over the Hudson, was delayed as recent inspections indicated more favorable conditions that reduced the scope of work. The revised project will begin in 2018.

In 2018 capital improvement costs of \$23.9 million were below the estimate of \$26.6 million as a result of slower construction progress on several projects due to heavy rains in the region causing construction delays.

In 2019 capital improvement costs of \$18.4 million were lower than estimated the \$25.3 million as a result of delays in construction and/or reconsideration of various projects system wide. This includes a delayed pedestrian sidewalk repair at Newburgh-Beacon Bridge that will be completed in 2020 and the reconsideration of procurements related to video analytic equipment for operations and security.

NEW YORK STATE BRIDGE AUTHORITY

Required Supplemental Information

Bridge System Assessments, Continued

In 2020 capital improvement costs of \$23.4 million were lower than the estimated \$48.1 million as a result of delays in several projects. The project to replace the Authority's toll system was projected at \$12.5 million in 2020 and did not materially commence until January 2021. Rehabilitation at Mid-Hudson Bridge also had a project to rehabilitate the curb and box beams that was projected at \$10 million in 2020 with the majority of the project extending into 2021. Delayed work from 2020 will be carried out in 2021.

NEW YORK STATE BRIDGE AUTHORITY
Required Supplementary Information
Schedule of Authority's Proportionate Share of the Net Pension Liability
Year ended December 31, 2020

	NYSERS Pension Plan				
	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>
Authority's proportion of the net pension liability	0.0397180%	0.0395581%	0.0374499%	0.0383003%	0.0375630%
Authority's proportionate share of the net pension liability	\$ 10,517,546	2,802,812	1,208,674	3,598,778	6,028,960
Authority's covered payroll	\$ 10,806,832	10,695,811	10,594,634	10,378,206	10,389,435
Authority's proportionate share of the net pension liability as a percentage of its covered payroll	97.32%	26.20%	11.41%	34.68%	58.03%
Plan fiduciary net position as a percentage of the total pension liability	86.39%	96.27%	98.20%	94.70%	90.70%
					97.95%

* The amounts presented for each fiscal year were determined as of the March 31, 2020, 2019, 2018, 2017, 2016 and 2015 measurement dates of the plans.

This schedule is presented to illustrate the requirement to show information for 10 years. However, information is presented for those years that are available.

NEW YORK STATE BRIDGE AUTHORITY
Required Supplementary Information
Schedule of Authority's Pension Contributions
Year ended December 31, 2020

NYSERS Pension Plan

	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
Contractually required contribution	\$ 1,448,973	1,445,115	1,465,310	1,520,797	1,445,031	1,678,527	1,876,986	2,050,908
Contributions in relation to the contractually required contribution	<u>1,448,973</u>	<u>1,445,115</u>	<u>1,465,310</u>	<u>1,520,797</u>	<u>1,445,031</u>	<u>1,678,527</u>	<u>1,876,986</u>	<u>2,050,908</u>
Contribution deficiency (excess)	<u>\$ -</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Authority's covered payroll	\$ 10,806,832	10,695,811	10,594,634	10,378,206	10,389,435	9,885,850	10,118,000	10,047,059
Contributions as a percentage of covered payroll	13.41%	13.51%	13.83%	14.65%	13.91%	16.98%	18.55%	20.41%

This schedule is presented to illustrate the requirement to show information for 10 years. However, information is presented for those years that are available.

NEW YORK STATE BRIDGE AUTHORITY
Required Supplementary Information
Schedule of Changes in Authority's
Total OPEB Liability and Related Ratios
Year ended December 31, 2020

	<u>2020</u>	<u>2019</u>	<u>2018</u>
Total OPEB liability:			
Service cost	\$ 2,167,613	2,109,599	1,315,442
Interest on total OPEB liability	1,668,653	1,744,224	1,557,748
Differences between actual and expected experience	768,489	-	-
Changes in assumptions	8,971,200	16,117,661	(4,809,704)
Benefit payments	<u>(1,916,589)</u>	<u>(1,869,854)</u>	<u>(1,316,984)</u>
Net change in total OPEB liability	11,659,366	18,101,630	(3,253,498)
Total OPEB liability - beginning	<u>59,468,998</u>	<u>41,367,368</u>	<u>44,620,866</u>
Total OPEB liability - ending	<u>\$ 71,128,364</u>	<u>59,468,998</u>	<u>41,367,368</u>
Covered payroll	\$ 8,031,906	7,836,006	10,799,786
Total OPEB liability as a percentage of covered payroll	885.6%	728.9%	383.0%

Notes to schedule:

Changes of assumptions - Changes of assumptions and other inputs reflect the effects of changes in the discount rate each period. The following are the discount rates used in each period:

<u>2020</u>	<u>2019</u>	<u>2018</u>
2.00%	2.75%	4.10%

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10 year trend is compiled, the Authority is presenting information for those years for which information is available.

**INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER
FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS
BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED
IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS**

The Governing Board
New York State Bridge Authority:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards issued by the Comptroller General of the United States, the financial statements of the New York State Bridge Authority (the Authority), as of and for the year ended December 31, 2020, and the related notes to financial statements, which collectively comprise the Authority's basic financial statements, and have issued our report thereon dated March 1, 2021.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Authority's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the Authority's financial statements will not be prevented, or detected and corrected, on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of the internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under Government Auditing Standards.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the Authority's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

EFPR Group, CPAs, PLLC

Williamsville, New York
March 1, 2021

**REPORT ON INVESTMENT COMPLIANCE WITH SECTION 201.3
OF TITLE TWO OF THE OFFICIAL COMPILATION OF CODES,
RULES AND REGULATIONS OF THE STATE OF NEW YORK**

The Governing Board
New York State Bridge Authority:

We have examined the New York State Bridge Authority's (the Authority), a component unit of the State of New York, compliance with Section 201.3 of Title Two of the Official Compilation of Codes, Rules and Regulations of the State of New York during the year ended December 31, 2020. Management is responsible for the Authority's compliance with those requirements. Our responsibility is to express an opinion on the Authority's compliance based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants and standards applicable to attestation engagements contained in Government Auditing Standards issued by the Comptroller General of the United States and, accordingly, included examining, on a test basis, evidence supporting the Authority's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances. We believe our examination provides a reasonable basis for our opinion.

In our opinion, the Authority complied in all material respects with the aforementioned requirements during the year ended December 31, 2020.

In accordance with Government Auditing Standards, we are required to report significant deficiencies in internal control, violations of contracts, or grant agreements, and abuse that are material to the Authority's compliance with Section 201.3 of Title Two of the Official Compilation of Codes, Rules and Regulations of the State of New York and any fraud or illegal acts that are more than inconsequential that come to our attention during our examination. We are also required to obtain views of management on those matters. We performed our examination to express an opinion on whether the Authority complied with the aforementioned requirements and not for the purpose of expressing an opinion on internal control over compliance with those requirements or other matters; accordingly, we express no such opinion. The results of our tests disclosed no matters that are required to be reported under Government Auditing Standards.

This report is intended solely for the information and use of the Authority's management, the Governing Board, the New York State Office of the State Comptroller, and the New York State Authority Budget Office and is not intended and should not be used by anyone other than those specified parties.

EFPR Group, CPAs, PLLC

Williamsville, New York
March 1, 2021

[THIS PAGE INTENTIONALLY LEFT BLANK]

Appendix D - Summary of Certain Provisions of the Resolutions

[THIS PAGE INTENTIONALLY LEFT BLANK]

SUMMARY OF CERTAIN PROVISIONS OF THE RESOLUTIONS

The Bond Resolution contains various covenants and security provisions, certain of which are summarized below. The summary does not purport to be a complete statement of the term of the Bond Resolution or the Supplemental Resolution and accordingly is qualified by reference thereto and is subject to the full and complete text thereof. Certain provisions of the Bond Resolution relative to the terms of the 2021 Bonds and various security covenants are summarized elsewhere in this Official Statement. Copies of the Bond Resolution may be obtained from the Authority or the Trustee. Capitalized terms used in this Official Statement which are not defined herein shall have the same meanings as in the Bond Resolution.

Definitions (Section 1.01 of the Bond Resolution)

"Accrued Aggregate Debt Service". As of any date of calculation, an amount equal to the sum of the amounts of accrued Debt Service with respect to all Series, calculating the accrued Debt Service with respect to each Series as an amount equal to the sum of (i) interest on the Bonds of such Series accrued and unpaid and to accrue to the end of the then current calendar month, and (ii) Principal Installments due and unpaid and that portion of the Principal Installment for such Series next due which would accrue (if deemed to accrue in the manner set forth in the definition of Debt Service) to the end of such calendar month.

"Act". The New York State Bridge Authority Act, being Chapter 870 of the Laws of 1939 of the State, as amended, constituting Title 2 of Article 3 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State.

"Additional Bond Requirement". With respect to the authentication and delivery of one or more Series of Additional Bonds or Refunding Bonds an amount equal to the greater of (A) the sum of (i) the sum of the Estimated Aggregate Debt Service and the Subordinated Indebtedness Requirement for any particular Fiscal Year which results in the largest such sum for the current or any future Fiscal Year immediately after the authentication or delivery of such Series of Bonds and (ii) Required Deposits, exclusive of the Subordinated Indebtedness Requirement, for the 12-month period immediately prior to such authentication and delivery; or (B) 1.75 times the Maximum Annual Debt Service with respect to all Bonds Outstanding immediately after such authentication and delivery of the Additional Bonds or Refunding Bonds.

"Additional Project". (i) The rehabilitation, reconstruction or replacement of or addition to any of the components of the Bridge System other than for the purpose of substantially expanding vehicle capacity of the Bridge System; (ii) the acquisition or construction of any new components of the Bridge System; (iii) the rehabilitation, reconstruction or replacement of any of the components of the Bridge System for the purpose of substantially expanding vehicle capacity of the Bridge System, including any highway connections to or with any of the Bridges, spans, approaches, structures or other components of the Bridge System designated by the Consulting Engineer as necessary or desirable to the continued efficient maintenance and operation of the Bridge System and designated by the Traffic Consultant as not materially adversely affecting the ability of the Authority to fix, charge and collect tolls for use of the Bridge System required by the Act and the Bond Resolution. All Additional Projects shall be (1) located within the corridor bordered on the west by the New York State Thruway (Interstate Route 87) and on the east by the Taconic State Parkway, and (2) immediately adjacent to an existing Bridge facility, except that the requirement stated in (2) of this paragraph may be waived by the Authority if the Traffic Consultant in

a Professional Certificate determines that any Additional Project (a) is expected to be used in connection with an existing Bridge and (b) shall be likely to reduce annual operating expenses or improve annual Net Revenues of the Authority as a result of the completion of such Additional Project.

"Aggregate Debt Service". For any period of twelve consecutive calendar months and as of any date of calculation, the sum of the amounts of Debt Service for such period with respect to all such Series of Bonds then Outstanding.

"Authorized Newspapers". "The Bond Buyer" or such other newspaper or financial journal of general circulation in the Borough of Manhattan, City and State of New York which is customarily published at least once a day for at least five days (other than legal holidays) in each calendar week, printed in the English language containing financial news.

"Authorized Officer". In the case of the Authority, the chairperson, the vice chairperson, the secretary, the treasurer, or the executive director of the Authority, and when used with reference to an act or document, also means any other person authorized by resolution of the Authority to perform such act or sign such document, and, in the case of the Trustee, means the president, any vice president or trust officer of the Trustee.

"Available Revenues". All Revenues and, simultaneously by the first authentication and delivery of the initial Series of Bonds, any amounts transferred by the Prior Trustee into the Bonds and Accounts established under this Resolution as required by the related Supplemental Resolution.

"Balloon Indebtedness". Bonds or Subordinated Indebtedness of which, 25% or more of the principal installments (a) are due, or (b) at the option of the Owner thereof may be redeemed, during any period of twelve (12) consecutive months, and are not required by the applicable authorizing documents to be amortized by payment or redemption. Unless otherwise provided in a Supplemental Resolution authorizing Balloon Indebtedness, Balloon Indebtedness shall be treated as if such Bonds or Subordinated Indebtedness, as applicable, are to be amortized, from the end of the fifth anniversary of the issuance of such Balloon Indebtedness over a period of twenty-five (25) years thereafter, on a level debt service basis at an interest rate equal to the rate borne by such Balloon Indebtedness on the date of calculation, provided that if the date of calculation is within twelve (12) months before the actual maturity of such Balloon Indebtedness, the full amount of principal payable at maturity shall be included in such calculation. Anything to the contrary in a Supplemental Resolution, or any resolution relating to the issuance of Subordinated Indebtedness notwithstanding, during the year preceding the final maturity date of such Bonds or Subordinated Indebtedness, all of the principal thereof shall be considered to be due on such maturity date unless the Authority provides to the Trustee a certificate of a Financial Advisor certifying that, in its judgment, the Authority should, given the then current market conditions, be able to refinance such Balloon Indebtedness, in which event the Balloon Indebtedness shall be amortized over the term of the Bonds or Subordinated Indebtedness, as applicable, expected to refinance such Balloon Indebtedness and shall bear the interest rate specified in the certificate of the Financial Advisor.

"Bond" or "Bonds". Any of the bonds, notes, or other evidences of indebtedness, as the case may be, of the Authority authenticated and delivered under and pursuant to this Resolution and a Supplemental Resolution and shall also mean any Parity Reimbursement Obligations, but shall not mean Subordinated Indebtedness; and provided that such term shall not include any Bond Anticipation Notes except to the extent expressly provided in a Supplemental Resolution authorizing the issuance of such Bond Anticipation Notes.

"Bondholder", "Holder", "holder", "Owner", "owner" or any similar term when used with reference to a Bond or Bonds, shall mean the registered owner of any Outstanding Bond or Bonds.

"Bond Resolution". The General Revenue Bond Resolution of the Authority with respect to the Bridge System as from time to time amended and supplemented.

"Bridge System". The Bridges and any and all incidental spans, approaches, structures, facilities, and other components including highway connections to or with any of the Bridges or approaches determined to be necessary or desirable from time to time to operate and maintain the Bridges pursuant to the Act.

"Bridges" or *"bridges"* shall have the meaning ascribed to such term, from time to time, in the Act.

"Business Day" or "business day". Any day of the year other than (i) Saturday or Sunday, (ii) any day on which banks located in New York, New York or the city in which the principal office of the Trustee or the provider of a Credit Facility or Liquidity Facility is located are required or authorized by law to remain closed, or (iii) any day on which the New York Stock Exchange is closed.

"Capital Appreciation Bonds". Any Bonds issued under the Bond Resolution as to which interest is compounded and payable only at the maturity, earlier redemption or other payment of such Bonds.

"Certificate of Determination". A certificate of an Authorized Officer of the Authority fixing terms, conditions and other details of Bonds in accordance with the delegation of power to do so under a Supplemental Resolution.

"Compounding Date". With respect to any Capital Appreciation Bond or Deferred Income Bond, each date specified in the Supplemental Resolution authorizing such Bond on which interest on such Bond is to be compounded.

"Consulting Engineer". The firm of Modjeski and Masters, Inc. or such other independent civil and structural engineers of nationally recognized standing or firms of independent civil and structural engineers of nationally recognized standing selected by the Authority and having a favorable reputation for skill and experience in engineering matters relating to bridge facilities of comparable size and character as the Bridge System.

"Costs". With respect to any Additional Project, all costs incurred in providing the payment for and financing of all or a portion of the planning, acquisition, construction, extraordinary maintenance, improvement, enlargement, repair and operation of any of the components of the Bridge System, including, but not limited to, funds for:

- (1) the cost of construction or reconstruction, the cost of acquisition of all land, rights-of-way, property, rights, easements and interests acquired by the Authority for construction or reconstruction, the cost of demolishing or removing any buildings or structures on land so acquired, including the cost of acquiring any lands to which such buildings or structures may be moved, the cost of relocating or reconstructing highways, highway interchanges, access roads to private property, including the cost of land or easements therefor, the amount of any final award or judgment in, or any settlement or compromise of, any proceeding to acquire lands, rights-of-way, easements or other interests, the payment of damages caused by construction in the manner provided by law;

- (2) the cost of any indemnity and surety bonds and premiums on insurance during construction, the costs and expenses, including discounts to the underwriters and other purchasers thereof, if any, incurred in the issuance and sale of bonds or notes, bond

insurance premium, letter of credit fees, or costs of other Credit Facilities or Liquidity Facilities, administrative expenses, legal fees, cost of audits, the cost of all machinery and equipment, initial inventories, fees and expenses of the Fiduciaries and costs of keeping accounts and making reports required by the Bond Resolution or any Supplemental Resolution;

(3) the cost of traffic estimates and of engineering, financial and legal services, environmental studies, plans, specifications, surveys, estimates of costs and revenues, and other expenses necessary or incident to determining the feasibility or practicability of constructing such Additional Project;

(4) the deposit or deposits if any, required by the Bond Resolution or any Supplemental Resolution to be paid into the various Funds and Accounts and payments when due (whether at the maturity of principal or the due date of interest or upon redemption) on any indebtedness of the Authority (other than Bonds), including Subordinated Indebtedness, incurred for any Additional Project;

(5) interest accruing in whole or in part on Bonds prior to and during construction and for such additional period as the Authority may reasonably determine to be necessary in accordance with the provisions of the Bond Resolution or any Supplemental Resolution;

(6) any other charges attributable to, and payable during the construction of, an Additional Project which could be capitalized, based on the advice of an Independent Accountant;

all to the extent applicable to such Additional Project and payable by the Authority, and such other expenses payable by the Authority not specified in the Bond Resolution as may be necessary or incidental to the construction, reconstruction or financing of such Additional Project and the placing of such Additional Project in operation. The Authority shall annually determine the labor rate, including benefits, properly allocable to force account work for Additional Projects.

"Debt". Bonds or Subordinated Indebtedness.

"Debt Service". For any period, as of any date of calculation and with respect to any Series of Bonds, an amount equal to the sum of (i) interest accruing during such period on Bonds of such Series, except to the extent that such interest is to be paid from deposits in the Debt Service Fund and made from the proceeds of Debt (including amounts, if any transferred thereto from the Construction Fund), (ii) interest on Variable Rate Bonds based on the Estimated Average Interest Rate; (iii) that portion of each Principal Installment for such Series or Bonds within a Series which would accrue during such period if such Principal Installment were deemed to accrue in equal amounts from the next preceding Principal Installment due date for such Series (or, if (x) there shall be no such preceding Principal Installment or (y) such preceding Principal Installment due date is more than one year prior to the due date of such Principal Installment, then, from a date one year preceding the due date of such Principal Installment or from the date of issuance of the Bonds of such Series, whichever date is later, such interest and Principal Installments to be calculated on the assumption that Bonds Outstanding at the date of calculation will cease to be Outstanding by reason, but only by reason, of the payment of each Principal Installment on its due date; (iv) to the extent not otherwise provided in a Supplemental Resolution, all net amounts due and payable by the Authority and all net amounts to accrue to the end of such period pursuant to a Parity Reimbursement Obligation; and (v) unless otherwise specified in the applicable Supplemental Resolution

providing for the issuance of Balloon Indebtedness, Debt Service on Balloon Indebtedness shall be calculated as provided in the definition thereof.

"Debt Service Reserve Requirement". As of any date of calculation, an amount (which may be in the form of Investment Securities or Financial Guarantees) equal to the lesser of (A) the Maximum Annual Debt Service due to be paid on Bonds then Outstanding in the then current or any future Fiscal Year to which the calculation relates, excluding interest to be paid from deposits in the Debt Service Fund made from the proceeds of Debt (including amounts, if any, transferred thereto from the Construction Fund) or (B) 125% of the average annual Estimated Aggregate Debt Service with respect to all Outstanding Bonds in the then current and all future Fiscal Years; provided, however, that the amount required to be deposited in the Debt Service Reserve Fund as a condition to the issuance of any Series of Additional Bonds shall not exceed 10% of the stated principal amount of such Series of Bonds when issued, or, to the extent such Series consisted of Bonds that when issued, had more than a de minimis amount of original issue discount or premium, the issue price (net of pre-issuance accrued interest) of such bonds; and provided further that in any event the Debt Service Reserve Requirement with respect to all of the Outstanding Bonds shall not exceed the maximum amount that may be held in the Debt Service Reserve Fund, in the opinion of nationally recognized bond counsel, with respect to the Bonds intended to be Tax-Exempt without adversely affecting the Tax-Exempt status of such Bonds; and further provided that if at any time the Authority at its option shall have established one or more Reserve Deposits in connection with the issuance of any Series of Bonds, the Debt Service Reserve Requirement as of any date of calculation shall be reduced by an amount equal to the sum of all Reserve Deposits not due and payable in such current or future Fiscal Year to which the calculation relates; and provided further that a different Debt Service Reserve Requirement for Bonds issued as Variable Rate Debt may be established in the Supplemental Resolution authorizing such Series; and provided further that on conversion of Variable Rate Debt to a fixed rate, the Debt Service Reserve Requirement for such Debt shall be increased to the level otherwise required by this Resolution.

"Defeasance Obligations".

- (i) Investment Securities as specified in clause (i) of the definition thereof, which is not redeemable at the option of the issuer thereof, or
- (ii) any other Investment Securities designated in a Supplemental Resolution as a Defeasance Obligation for purposes of defeasing the Bonds authorized by such Supplemental Resolution, which is not redeemable at the option of the issuer thereof and which shall be rated at the time of the investment in the highest long-term Rating Category by each Rating Agency.

"Defeased Municipal Obligations". Pre-refunded municipal obligations rated "AAA" by Standard & Poor's and "Aaa" by Moody's Investor's Service, and meeting the following requirements:

- (i) the municipal obligations are (x) not subject to redemption prior to maturity, or (ii) the Authority, the Trustee, or the Paying Agent has been given irrevocable instructions concerning their call and redemption and the issuer of the municipal obligations has covenanted not to redeem such municipal obligations other than as set forth in such instructions; and
- (ii) the municipal obligations are fully secured by cash or Government Obligations which may be applied only to payment of the principal of and interest and premium, if any, on such municipal obligations.

"Deferred Income Bonds". Any Bonds issued under this Resolution as to which interest accruing prior to the Current Interest Commencement Date is (i) compounded on each Compounding Date and (ii) payable only at the maturity, earlier redemption or other payment of such Bonds pursuant to this Resolution or the Supplemental Resolution authorizing such Bonds.

"Estimated Aggregate Debt Service". For any period and as of any date of calculation, the sum of the amounts of Debt Service for such period with respect to all Series of Bonds then Outstanding; provided, however, that in computing such Estimated Aggregate Debt Service, any particular Variable Rate Bonds shall be deemed to bear at all times, to the maturity date thereof, the Estimated Average Interest Rate applicable thereto.

"Estimated Average Interest Rate". With respect to any Variable Rate Bonds the interest rate that would have been borne by such Bonds if such Bonds had been sold as fixed interest rate Bonds of the Authority (i) without benefit of any credit enhancement, and (ii) with the same final maturity or maturities (without giving effect to puts or tenders) as the Variable Interest Rate Bonds actually sold, as estimated by the Authority on the date of sale of such Bonds.

"Estimated Net Revenue Requirement". With respect to any period of time an amount equal to the greater of (i) the sum of the Estimated Aggregate Debt Service and the Required Deposits for such period, or (ii) 1.75 times the Estimated Aggregate Debt Service for such period.

"Financial Guarantee" or "Financial Guarantees". Any or all of a surety bond, an insurance policy, a letter of credit or other form of guarantee for the benefit of the holders of Bonds issued by an institution having credit ratings at either of the two highest rating categories by the Rating Agencies and meeting the requirements established by Section 2.03 of the Bond Resolution.

"Fiscal Year". The calendar year or such other period of twelve calendar months designated by the Authority as its fiscal year.

"Fitch Ratings". Fitch Ratings, Inc., a corporation organized and existing under the laws of the state of Delaware, and if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, "Fitch Ratings" shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority.

"Government Direct Subsidy". Any direct federal or State subsidy payment of all or a portion of the Debt Service with respect to Government Direct Subsidy Bonds by the Authority.

"Government Direct Subsidy Bonds". Any Bonds or Subordinated Indebtedness issued by the Authority for which the United States Treasury Department or the State Treasury will make a Government Direct Subsidy to the Authority.

"Government Obligations". (i) direct obligations of, or obligations the principal of and the interest on which are unconditionally guaranteed by, the United States of America and entitled to the full faith and credit thereof; (ii) certificates, depositary receipts or other instruments which evidence a direct ownership interest in obligations described in clause (i) above or in any specific interest or principal payments due in respect thereof.

"Investment Securities". Any of the following securities, to the extent the same (i) are at the time legal investments by the Authority of the funds to be invested therein and (ii) conform to the policies set forth in any investment guidelines adopted by the Authority and in effect at the time of making such investment:

- (i) Government Obligations;
- (ii) Defeased Municipal Obligations;
- (iii) bonds, debentures, notes or other obligations issued or guaranteed by any of the following: Federal National Mortgage Association, the Federal Financing Bank, the Federal Home Loan Mortgage Corporation, the Federal Housing Administration, the Farmers Home Administration, the Government National Mortgage Association, or any other agency controlled by or supervised by and acting as an instrumentality of the United States government;
- (iv) [intentionally omitted]
- (v) obligations of state or local government municipal bond issuers which at the time of their purchase are rated in one of the two highest rating categories of the Rating Agencies;
- (vi) certificates of deposit issued by, and time deposits in, and bankers' acceptances of, any bank (including any Paying Agent or Trustee), any branch of any bank, national banking association or federally chartered savings and loan association, provided that (x) if the long term unsecured indebtedness of such institution is rated less than AA by a Rating Agency, such deposits are insured by the Federal Deposit Insurance Corporation for the full face amount thereof or, to the extent not so insured, collateralized by direct obligations of the United States having a market value equal at all times to the face amount of the deposit, which collateral shall be held by the Trustee or a Depositary, as custodian;
- (vii) obligations of state or local government municipal bond issuers, the principal of and interest on which, when due and payable, have been insured by an insurance policy or guaranteed by a letter of credit and which are rated in one of the two highest rating categories by the Rating Agencies;
- (viii) repurchase agreements for Government Obligations with any dealer or bank which is a member of the Securities Investors Protective Corporation, each of which is a primary reporting dealer in government securities as determined by the Federal Reserve Bank, or other comparable standard as the Authority shall implement pursuant to a Supplemental Resolution, which agreement is secured by any one or more of the securities described in clauses (i), (ii) or (iii) above, which securities shall (A) at all times have a market value of not less than the full amount held or invested pursuant to the agreement and the collateral must be free of third party claims, and (B) be delivered to the Trustee or a Depositary, that is independent from the dealer or bank with whom the repurchase agreement is executed;
- (ix) interests in a money market mutual fund registered under the Investment Company Act of 1940, 15 U.S.C. §§ 80-1, et seq., as from time to time amended, the portfolio of which is limited to obligations described in clause (i), (ii), (iii) or (v) above, provided that such fund has total assets of at least 100,000,000 and is rated in either of the two highest Rating Categories by S&P and Moody's; and
- (x) any other investment in which the Authority is authorized from time to time to invest under applicable law with respect to which an Authorized Officer has, on or before the date thereof, delivered to the Trustee (A) a certificate to the Trustee

designating the additional investment as an Authorized Investment and (B) Rating Confirmation.

Any investment in any of the foregoing obligations may be made in the form of an entry made on the records of the issuer of the particular obligations or of a recognized securities depository. Obligations of the Trustee or an affiliate thereof may be Investment Securities, provided that they otherwise qualify.

"Kroll Bond Rating Agency, Inc.". Kroll Bond Rating Agency, Inc., a corporation organized and existing under the laws of the State of New York, and if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, "Kroll Bond Rating Agency, Inc." shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority.

"Licensed Professional Engineer". A person licensed to practice engineering by the Department of Education of the State of New York.

"Maximum Annual Debt Service". The maximum amount of Estimated Aggregate Debt Service for the then current or any Fiscal Year.

"Maximum Interest Rate". With respect to any particular Variable Rate Bonds, a numerical rate of interest, which shall be set forth in the Supplemental Resolution authorizing such Bonds, that shall be the maximum rate of interest such Bonds may at any time bear, provided, however, that should the Authority obtain insurance or other coverage which provides that any increase in the variable interest rate above a threshold rate will be reimbursed or paid by the insurer or provider of such coverage, such threshold rate will be deemed to be the Maximum Interest Rate. The insurer or other provider of such coverage shall be an insurer or bank whose claims paying ability or the general obligations of which are rated in the either of the two highest rating categories by Standard & Poor's and Moody's Investor's Service, or their successors.

"Moody's Investor's Service" or "Moody's". Moody's Investor's Service, a corporation organized and existing under the laws of the state of Delaware, and if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, "Moody's Investor's Service" shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority.

"Net Revenue Requirement". With respect to any period of time, an amount equal to the greater of (i) the sum of the Aggregate Debt Service and the Required Deposits for such period, or (ii) 1.75 times the Aggregate Debt Service for such period.

"Net Revenues". The Available Revenues during such period less all Operating Expenses for such period.

"Operating Expenses". The Authority's reasonable and necessary current expenses of operation, maintenance, and repair and shall include, without limitation, all ordinary and usual expenses of maintenance, repair and operation, which may include expenses not annually recurring, all administrative expenses, planning expenses, environmental compliance expenses, accounting and auditing expenses, insurance premiums, legal and engineering expenses, any payments to pension, retirement, health and hospitalization funds or other employee benefit funds, rental payments in connection with operating leases in the ordinary course of business, and any other current expenses or obligations required to be paid by the Authority under the provisions of the Resolution or by law to the extent properly attributable to the operation of the Bridge System, and the expenses and compensation of the Fiduciaries required to be paid

under the Resolution, and periodic Credit Facility fees. Any Operating Expenses shall not include any allowance for depreciation on the Bridge System or the Authority's buildings and equipment, or any principal payments on the Bonds or any other debt obligations of the Authority, or reserves for replacements or any Costs of an Additional Project, or accruals for pension and other post-employment benefits not reflecting current expenses. Operating Expenses shall not include Costs of any Additional Project whether paid from the Maintenance Reserve Fund or from the Construction Fund.

"Option Bond". Any Bond which by its terms may be tendered by and at the option of the holder thereof for purchase or payment prior to the stated maturity thereof, or the maturities of which may be extended by and at the option of the holder thereof. Option Bonds may (but need not) be Variable Rate Bonds.

"Outstanding". (a) When used with reference to Subordinated indebtedness, "Outstanding" as such term is defined in the resolution, indenture or other instrument of the Authority authorizing the issuance of such Subordinated Indebtedness or not otherwise paid or deemed to be paid in accordance with the terms of such Subordinated Indebtedness; and (b) when used with reference to Bonds (or a Series of Bonds), as of any date, all Bonds (or all Bonds of such Series), theretofore or thereupon being authenticated and delivered under the Bond Resolution; except:

- (1) Any Bonds, canceled by the Trustee, at or prior to such date;
- (2) Bonds (or portions of Bonds), for the payment or redemption of which moneys, equal to the principal amount or Redemption Price thereof, as the case may be, with accrued interest to the date of maturity or redemption date, shall be held in trust under the Bond Resolution and set aside for such payment or redemption (whether at or prior to the maturity or redemption date); provided that if such Bonds (or portions of Bonds) are to be redeemed, notice of such redemption shall have been given as in Article IV provided or provision satisfactory to the Trustee shall have been made for the giving of such notice;
- (3) Bonds, in lieu of or in substitution for which other Bonds shall have been authenticated and delivered pursuant to Sections 3.04, 3.06, 3.07, 3.08, 3.09, 4.06 or 12.06 of the Bond Resolution;
- (4) Bonds deemed to have been paid as provided in subsection (b) of Section 15.01 of the Bond Resolution; and
- (5) Option Bonds deemed tendered in accordance with the provisions of the Supplemental Resolution authorizing such Bonds on the applicable adjustment or conversion date, if interest thereon shall have been paid through such applicable date and the purchase price thereof shall have been paid or amounts are available for such payment as provided in such Supplemental Resolution;

"Parity Reimbursement Obligation". A reimbursement obligation the payment of which is secured on a parity with the lien created by the Bond Resolution.

"Principal Installment". As of any date of calculation and with respect to any Series, so long as any Bonds thereof are Outstanding, (i) the principal amount of Bonds (including (x) the principal amount of any Option Bonds which may be tendered to the Authority for purchase or payment prior to the stated maturity thereof in accordance with the terms of the Supplemental Resolution authorizing such Option Bonds, unless such amount is secured by a Credit Facility which is not in default and (y) the principal amount of any Parity Reimbursement Obligation) of such Series due (or which may be so tendered for

purchase or payment) on a certain future date for which no Sinking Fund Installments have been established, or (ii) the unsatisfied balance (determined as provided in Section 5.04 of the Bond Resolution) of any Sinking Fund Installments due on a certain future date for Bonds of such Series, plus the amount of the sinking fund redemption premiums, if any, which would be applicable upon redemption of such Bonds on such future date in a principal amount equal to said unsatisfied balance of such Sinking Fund Installments, or (iii) if such future dates coincide as to different Bonds of such Series, the sum of such principal amount of Bonds and of such unsatisfied balance of Sinking Fund Installments due on such future date plus such applicable redemption premiums, if any.

"Professional Certificate". Either a certificate signed by the Consulting Engineer, a Licensed Professional Engineer or the Traffic Consultant, as the context may indicate.

"Project". Those individual construction, reconstruction and rehabilitation projects to be financed from the sale of the Series 1997 Bonds as provided in the First Supplemental Resolution.

"Rating Agency" or "Rating Agencies." Standard & Poor's, Moody's Investor's Service, Fitch Ratings, or Kroll Bond Rating Agency, Inc., to the extent they then maintain a rating on the Bonds at the request of the Authority.

"Rating Confirmation". Written evidence that no rating then in effect from a Rating Agency will be withdrawn or reduced solely as the result of an action to be taken under the Resolution; provided, however, that no action shall be undertaken on the basis of a Rating Confirmation unless at least one Rating Agency at that time maintains a rating on the Bonds.

"Record Date". With respect to a particular Series of Bonds, the fifteenth (15th) day of the calendar month (whether or not a business day), if the interest payment date for such Series is the first day of the month, or the first (1st) day of the calendar month (whether or not a business day), if the interest payment date for such Series is the fifteenth day of the month, next preceding each interest payment date for such Series, unless otherwise provided by the Supplemental Resolution authorizing such Series.

"Required Deposits". For any period, amounts of Net Revenues payable into the Debt Service Reserve Fund, the Subordinated Indebtedness Fund, and the Insurance Fund, in accordance with the Bond Resolution.

"Reserve Deposit". In respect of any Series of Bonds, an amount which shall be deposited monthly into the Debt Service Reserve Fund for such Series of Bonds equal to the product of a fraction, the numerator of which shall be one and the denominator of which shall equal the number of months (which shall be not greater than twelve (12) months), designated by the Authority in the Supplemental Resolution authorizing the issuance of such Series of Bonds, in which the Reserve Deposit for such Series of Bonds is to be paid, times the excess of the Debt Service Reserve Requirement on such date on all Bonds Outstanding including such Series of Bonds, over the Debt Service Reserve Requirement on all Bonds Outstanding excluding such Series of Bonds, such excess to be reduced by (i) the amount, if any, by which the amount on deposit in the Debt Service Reserve Fund on the date of issuance of such Series of Bonds exceeds the Debt Service Reserve Requirement on all Bonds Outstanding excluding such Series of Bonds being issued, and (ii) the amount of proceeds of the Series of Bonds being issued or other funds, if any, deposited in the Debt Service Reserve Fund on the date of issuance of the Series of Bonds being issued; provided, however, that the Reserve Deposit may be reduced whenever any additional deposit allocable to the Reserve Deposits for such Series is made into the Debt Service Reserve Fund.

"Revenues". (i) all tolls, revenues, rates, fees, charges, rents and other income and receipts, in each case derived by or for the account of the Authority from the operation of the Bridge System, including any amounts received by the Authority as a Government Direct Subsidy; (ii) proceeds of any insurance coverage on and condemnation awards in respect of the Bridge System and allocable to losses of operating revenues, income or receipts of the types referred to in this definition (including, without limitation, the proceeds of any business interruption or use and occupancy insurance and any portions of any net condemnation awards made in respect of lost revenues or disruptions in the receipt thereof); (iii) proceeds of the investment of any of the foregoing; and (iv) the investment proceeds of any and all amounts in the Funds and Accounts held by the Trustee pursuant to the Resolution, other than the Subordinated Indebtedness Fund and the Rebate Fund, to the extent available for application as Revenues under the terms hereof. Revenues shall include the proceeds of any gifts, grants or other income to the Authority from the government of the United States, the State or any public instrumentality of the State or any other individual or entity, to the extent (i) the Authority is not precluded by law, the grant or other operative contract or instrument from pledging or applying such amounts as Revenues, (ii) such amounts have been realized by the Authority or are reasonably expected by the Authority to be realized in the amounts and at the times taken into account pursuant to law or a legal obligation of the other party, and (iii) such amount are not proceeds of an obligation deposited in Series Reserve.

"Securities Depository". The Depository Trust Company (Municipal Calls Department); Midwest Securities Trust Company (Capital Structures - Call Notification Department); Pacific Securities Depository Trust Company; Philadelphia Depository Trust Company (Reorganization Department); and any other similar or successor securities depository registered under the Securities Exchange Act of 1934.

"Series Reserve". A reserve established with respect to a specific Series of Bonds pursuant to a Supplemental Resolution from moneys other than Revenues

"Standard & Poor's" or "S&P". S&P Global Ratings, a corporation organized and existing under the laws of the State of New York, and if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, "Standard & Poor's" shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority.

"Subordinated Indebtedness". Any bonds, notes or other evidences of indebtedness of the Authority issued pursuant to and complying with the provisions of Section 5.08 of the Bond Resolution.

"Subordinated Indebtedness Requirement". With respect to any period of time, the amount required to be deposited into the Subordinated Indebtedness Fund pursuant to the resolutions, indentures or other instruments of the Authority adopted by the Authority in accordance with Section 5.09 of the Bond Resolution and providing for all payments with respect to Subordinated Indebtedness.

"Substantially Equal Debt Service". With respect to any period of years for any Subordinated Indebtedness, that the greatest Debt Service for any Fiscal Year in such period is not in excess of one hundred and ten per cent of the smallest Debt Service for any year in such period.

"Traffic Consultant". Such independent traffic consultant or firm of independent traffic consultants of recognized standing selected by the Authority and appointed pursuant to a resolution of the Authority and having a favorable reputation for skill and experience in traffic engineering or consulting matters relating to bridge facilities of comparable size and character as the Bridge System.

“Variable Rate Bonds”. Any Bond not bearing interest throughout its term at a specified rate or specified rates determined at the time of issuance of the series of instruments of which it is one. Variable Rate Bonds may (but need not) be Option Bonds.

Resolution to Constitute Contract (Section 1.04 of the Bond Resolution)

In consideration of the purchase and acceptance of any and all of the Bonds authorized to be issued under the Bond Resolution by those who shall hold the same from time to time, the Bond Resolution shall be deemed to be and shall constitute a contract between the Authority and the holders from time to time of the Bonds; and the pledge made in the Bond Resolution and the covenants and agreements therein set forth to be performed on behalf of the Authority shall be for the equal benefit, protection and security of the holders of any and all of the Bonds, all of which, regardless of the time or times of their authentication and delivery or maturity, shall be of equal rank without preference, priority or distinction of any of the Bonds over any other thereof except as expressly provided in or permitted by the Bond Resolution.

Authorization of Bonds (Section 2.01 of the Bond Resolution)

The aggregate principal amount of the Bonds which may be executed, authenticated and delivered under the Bond Resolution is not limited except as provided in the Bond Resolution or as limited by the Act.

The issuance of Bonds of a Series shall be authorized pursuant to a Supplemental Resolution adopted pursuant to the Bond Resolution. Each Supplemental Resolution shall, to the extent then permitted by the Act and subject to the express limitations of the Bond Resolution specify the following items or delegate the determination of such items to an Authorized Officer:

- (i) the authorized principal amount and Series designation of such Series and the Credit Facility, if any, related thereto;
- (ii) the purpose or purposes for which such Series is being issued;
- (iii) the date, maturity dates and amounts of each maturity, the Sinking Fund Installment payment dates, if any, the amount of each Sinking Fund Installment, if applicable, and the first and all subsequent interest payment dates of the Bonds of such Series or the manner of determining the same;
- (iv) if such Bonds are interest bearing bonds, the interest rate or rates of the Bonds of such Series or the manner of determining such rate or rates and the interest payment dates therefor, and in the case of Variable Rate Bonds, the limitation, if any, on the numerical rate or rate of interest which such Bonds may bear at any time and the assumptions to be used in the calculation of, or the method of calculating, interest on such Bonds for purposes of the definition of Debt Service herein;
- (v) minimum denomination or the manner of dating, numbering and lettering the Bonds of such Series, provided, that all such Bonds shall be in denominations equal to the minimum denomination or any multiple thereof, as authorized by such Supplemental Resolution and provided further that Capital Appreciation Bonds and Deferred Income Bonds shall be denominated in terms of the minimum amount due at maturity thereof or any multiple thereof, as authorized by such Supplemental Resolution;

(vi) the Redemption Price or Redemption Prices, if any, and the redemption terms, if any, of the Bonds of such Series and the place or places of payment of the principal or Redemption Price, if any, of and interest on the Bonds of such Series;

(vii) direction for the application and disbursement of the proceeds of the Bonds of such Series;

(viii) provisions for the sale of the Bonds of such Series;

(ix) a description of the Additional Project, if any, to be financed by the Bonds of such Series;

(x) the forms of the Bonds of such Series and the form of the Trustee's certificate of authentication;

(xi) with regard to Option Bonds, provisions regarding tender and payment thereof and authorization of the Credit Facility, if any, related thereto;

(xii) with regard to Capital Appreciation Bonds or Deferred Income Bonds, the Compounding Date for such Bonds;

(xiii) the amount (or the method of determining the amount), if any, to be deposited from the proceeds of such Series of Bonds in the Debt Service Fund;

(xiv) the amount, if any, to be deposited in the Debt Service Reserve Fund, and, if the Authority desires to establish a Reserve Deposit in respect of such Series of Bonds, the number of months over which such Reserve Deposit shall be paid and the amount of such Reserve Deposit;

(xv) the amount, if any, to be deposited from the proceeds of such Series of Bonds in the Insurance Fund, the Maintenance Reserve Fund and the General Fund and any other Funds or Accounts established by the Bond Resolution or by the Supplemental Resolution for such Series; and

(xvi) any other provisions deemed advisable by the Authority, in addition to, in lieu of or in substitution for the provisions of the Bond Resolution, which may include variations of the form of Bonds to be issued under the Supplemental Resolution and such modifications as may be necessary to provide for the issuance of Bonds without certificates and evidenced in book-entry form.

All the Bonds of each Series or subseries of like maturity shall be identical in all respects, except as to denominations, numbers and letters. After the original issuance of Bonds of any Series, no Bonds of such Series shall be issued except in lieu of or in substitution for other Bonds of such Series pursuant to the Bond Resolution.

The Pledge Effected by the Bond Resolution (Section 5.01 of the Bond Resolution)

The Authority pledges for the payment of the principal and Redemption Price of, and interest on the Bonds in accordance with their terms and the provisions of the Bond Resolution, subject only to the provisions of the Bond Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Bond Resolution, (i) the proceeds of sale of the Bonds, (ii) all Net Revenues, and (iii) all Funds and Accounts, other than the Operating Fund, the Subordinated

Indebtedness Fund and the Rebate Fund, established by the Bond Resolution. Pursuant to the Supplemental Resolution, the Authority has amended the Bond Resolution to further provide as follows:

(a) The Bond Resolution creates a valid and binding pledge in the collateral set forth in clauses (i) through (iii) above, subject to further provisions of the Resolution, in favor of the Bondholders as security for the payment of the Bonds, enforceable by the Trustee or the Holders of the Bonds in accordance with the terms thereof.

(b) Under the laws of the State of New York, such pledge is and shall be prior to any judicial lien hereafter imposed on such collateral to enforce a judgment against the Authority on a simple contract. By the date of issuance of the 2021 Bonds, the Authority will have filed all financing statements describing, and transferred such possession and control over, such collateral (and for so long as any Bond is Outstanding the Authority will file, continue, and amend all such financing statements and transfer such possession and control) as may be necessary to establish and maintain such priority in the State of New York and in each other jurisdiction in which the Authority's collateral may be located or that may otherwise be applicable pursuant to Uniform Commercial Code Section 9.301-9.306 of such jurisdiction.

(c) The Authority has not heretofore made a pledge of, granted a lien on or security interest in, or made an assignment or sale of such collateral that ranks on a parity with or prior to the pledge granted hereby, except for the pledge granted to secure the Series 2012 Bonds on a parity with the 2021 Bonds and any Additional Bonds issued on a parity therewith under the Resolution. The Authority has not described such collateral in a Uniform Commercial Code financing statement that will remain effective when the Bonds are issued, except in connection with the foregoing pledge. The Authority shall not hereafter make or suffer to exist any pledge or assignment of, lien on or security interest in such collateral that ranks prior to or on a parity with the pledge granted hereby, or file any financing statement describing any such pledge, except as expressly permitted by the Bond Resolution.

Establishment of Funds (Section 5.02 of the Bond Resolution)

The following Funds are established by the Bond Resolution:

- (a) Revenue Fund;
- (b) Operating Fund;
- (c) Debt Service Fund;
- (d) Debt Service Reserve Fund;
- (e) Subordinated Indebtedness Fund;
- (f) Insurance Fund;
- (g) Maintenance Reserve Fund;
- (h) Construction Fund;
- (i) General Fund; and
- (j) Rebate Fund.

All of the Funds shall be held by the Trustee, except the Operating Fund, which shall be held by the Authority.

Disposition of Revenues (Section 5.03 of the Bond Resolution)

From and after the time of delivery by the Trustee of the first Bond authenticated and delivered under the Bond Resolution, all Revenues (except the proceeds of the investment of amounts in certain Funds and Accounts) received by the Authority shall be deposited promptly and shall be credited by the Trustee to the Revenue Fund.

After the tenth (10th) and on or before the last day of the month the Trustee shall pay from the Revenue Fund to the Authority to be credited to the Operating Fund an amount certified by an Authorized Officer of the Authority as not more than sufficient, with the amounts then in the Operating Fund, to provide for the reasonable and necessary Operating Expenses for the remainder of the current month and the ensuing two months.

The Trustee shall, on or before the tenth (10th) day of each month, and except as otherwise provided, transfer and allocate the entire balance of moneys in the Revenue Fund to the following Funds in the following order of priority:

First: To the Debt Service Fund, if and to the extent required so that the balance in the Debt Service Fund shall equal the Accrued Aggregate Debt Service for all Bonds Outstanding on said date;

Second: To the Debt Service Reserve Fund, if and to the extent required so that the balance in said Fund shall equal the Debt Service Reserve Requirement for all Bonds Outstanding on said date;

Third: To the Subordinated Indebtedness Fund, the amount, if any, equal to the Subordinated Indebtedness Requirement theretofore accrued and unpaid and not met from any other source and to accrue and become payable during the succeeding calendar month and not met from any other source;

Fourth: To the Insurance Fund, if and to the extent required so that the amount in the Insurance Fund shall equal such amount as set forth in a certificate, filed with the Trustee, of an Authorized Officer of the Authority as the amount determined by a resolution of the Authority as necessary to comply with the insurance requirement of the Bond Resolution;

Fifth: To the Maintenance Reserve Fund, if and to the extent required, so that the amount in the Maintenance Reserve Fund shall equal the amount set forth in a certificate, filed annually with the Trustee, of an Authorized Officer of the Authority as the amount determined by resolution of the Authority as that amount necessary to enable the Authority to comply with the Authority covenant to operate and maintain the Bridge System, and which shall not be less than in the amount recommended by the Consulting Engineer in an accompanying Professional's Certificate;

Sixth: To the Construction Fund, such amounts as set forth in a certificate, filed with the Trustee, of an Authorized Officer of the Authority; and

Seventh: To the General Fund, any remaining balance of such moneys withdrawn from the Revenue Fund.

Debt Service Fund (Section 5.04 of the Bond Resolution)

The Trustee shall pay out of the Debt Service Fund (i) before each interest payment date for any of the Bonds the amount required for the interest payable on such date; (ii) on or before each interest payment date, an amount equal to the Principal Installment, if any, due on such date by reason of maturity or by reason of the payment of any Sinking Fund Installment; and (iii) on or before any redemption date for the Bonds, the amount required for the payment of the Redemption Price and interest on the Bonds then to be redeemed.

Debt Service Reserve Fund (Section 5.05 of the Bond Resolution)

If on the day preceding any interest payment date the amount in the Debt Service Fund shall be less than the Accrued Aggregate Debt Service for all Bonds Outstanding that are secured by the Debt Service Reserve Fund, the Trustee shall apply amounts from the Debt Service Reserve Fund to the extent necessary to satisfy the deficiency.

Whenever the moneys on deposit in the Debt Service Reserve Fund shall exceed the Debt Service Reserve Requirement, the Trustee, at the written direction of an Authorized Officer of the Authority, shall withdraw the amount of such excess and deposit such excess to the credit of the Revenue Fund.

Whenever the amount in the Debt Service Reserve Fund, together with the amount in the Debt Service Fund, is sufficient to pay in full all Outstanding Bonds secured by the Debt Service Reserve Fund in accordance with their terms, the funds on deposit in the Debt Service Reserve Fund shall be transferred to the Debt Service Fund. Prior to said transfer, all investments held in the Debt Service Reserve Fund shall be liquidated by the Trustee to the extent necessary to provide for timely payment of the principal or Redemption Price of and interest on Bonds.

In the event of refunding of any Bonds, the Authority may withdraw from the Debt Service Reserve Fund all or any portion of the amounts accumulated therein with respect to the Bonds being refunded and deposit such amounts with the Trustee to be held for the payment of the principal of or Redemption Price, if applicable, and interest on the Bonds being refunded; provided that such withdrawal shall not be made unless (i) upon such refunding, the Bonds being refunded shall be deemed to have been paid within the meaning and with the effect provided in the Resolution, and (ii) the amount remaining in the Debt Service Reserve Fund, after giving effect to any Credit Facility deposited in such Fund pursuant to the Resolution, shall not be less than the Debt Service Reserve Requirement and provided further that, at the time of such withdrawal, there shall exist no deficiency in the Debt Service Fund.

The Authority may determine by Supplemental Resolution that a Series of Bonds shall not be secured by the Debt Service Reserve Fund, in which case no amounts shall be required from the proceeds of such Series of Bonds for deposit in the Debt Service Reserve Fund and no amounts shall be payable from the Debt Service Reserve Fund to pay amounts due or payable with respect to such Bonds.

Maintenance Reserve Fund (Section 5.06 of the Bond Resolution)

Moneys credited to the Maintenance Reserve Fund may be applied to the Cost of additions, improvements or betterments to, or the reconstruction of the Bridge System, emergency repairs of the Bridge System, extraordinary repairs, renewals or replacements of the Bridge System, and for the

purchases of vehicles and equipment necessary to operate and maintain the Bridge System upon receipt by the Trustee of a Professional Certificate of the Consulting Engineer or of a Licensed Professional Engineer setting forth the Cost and stating that the expenditure is necessary (i) to restore or prevent physical damage to the Bridge System or any part thereof, (ii) for the safe and efficient operation of the Bridge System or (iii) to prevent loss of Revenues.

General Fund (Section 5.07 of the Bond Resolution)

The Trustee shall transfer from the General Fund (i) to the Debt Service Fund and the Debt Service Reserve Fund the amount necessary (or all the moneys in the General Fund if less than the amount necessary) to satisfy any deficiencies in payments to said Funds; (ii) in the event of any transfer of moneys from the Debt Service Reserve Fund to the Debt Service Fund, to the Debt Service Reserve Fund the amount of any resulting deficiency in such Fund; (iii) provided that all transfers referred to in clauses (i) and (ii) of this paragraph shall have heretofore been made, to the Subordinated Indebtedness Fund the amount, if any, necessary to satisfy any deficiency in the Subordinated Indebtedness Requirement; (iv) such amount as the Authority may, in its discretion in a written direction to the Trustee by an Authorized Officer of the Authority, determine to set aside in reserve for meeting the deficiencies referred to in clauses (i) through (iii) of this paragraph; (v) provided that all transfers and reserves therefore referred to in clauses (i) through (iv) of this subsection (a) shall have heretofore been made, to the Maintenance Reserve Fund the amount, if any, to satisfy the deficiency in such Fund. Amounts in the General Fund not required to meet a deficiency referred to in this paragraph shall be applied by the Trustee pursuant to a written direction of an Authorized Officer of the Authority to any other lawful corporate purpose of the Authority.

Subordinated Indebtedness (Section 5.08 of the Bond Resolution)

The Authority may, now or hereafter, at any time or from time to time, issue evidences of indebtedness payable out of, and which may be secured by a pledge of, such amounts in the Subordinated Indebtedness Fund or the General Fund as may from time to time be available for the purpose of payment thereof. The Authority may, by resolution, provide for various priorities in the liens and pledges securing Subordinated Indebtedness, and nothing in the Bond Resolution shall be construed so as to require that the payment of, or pledges securing, Subordinated Indebtedness be on a parity *inter se*.

The Authority may also, at any time or from time to time, issue Subordinated Indebtedness to refund any Subordinated Indebtedness issued as provided in this Section or to refund Outstanding Bonds of one or more Series or one or more maturities within a Series. Such Subordinated Indebtedness issued for refunding purposes may be payable out of, and may be secured by a pledge of, such amounts in the Subordinated Indebtedness Fund for the General Fund as may from time to time be available therefor.

Construction Fund (Section 5.10 of the Bond Resolution)

There shall be paid into the Construction Fund the amounts required to be so paid by the provisions of the Bond Resolution or any Supplemental Resolution or Certificate of Determination, and there may be paid into the Construction Fund, at the option of the Authority, any moneys received for or in connection with the Bridge System by the Authority from any other source.

Moneys in the Construction Fund shall be invested by the Trustee upon instructions from the Authority to the fullest extent practicable in Investment Securities maturing in such amounts and at such times as may be necessary to provide funds when needed to pay Costs or such other costs as may be required to be paid from such moneys. The Trustee may, and to the extent required for payments from the Construction Fund shall, sell any such Investment Securities at any time, and the proceeds of such sale,

and of all payments at maturity and upon redemption of such investments, shall be held in the applicable account in the Construction Fund. Interest received on moneys or securities in any separate account in such Fund may be held in such account or may be transferred to any other account within the Construction Fund as the Authority shall direct the Trustee in written instructions of an Authorized Officer of the Authority.

The completion, substantial completion or abandonment of construction of the Project or any Additional Project shall be evidenced by a certificate of a Licensed Professional Engineer, which shall be filed promptly with the Authority and the Trustee, stating the date of such completion, anticipated completion or abandonment and the amount, if any, required in the opinion of the signer for the payment of any remaining part of the Cost of such Project, or Additional Project, and, if such Project or Additional Project has been completed, further stating that it has been constructed in accordance with the plans and specifications applicable thereto. Upon the filing of such certificate and upon instructions from the Authority, the balance in the separate account in the Construction Fund established therefor in excess of the amount, if any, stated in such certificate shall be deposited by the Trustee in any other account in the Construction Fund or in the Debt Service Reserve Fund, if and to the extent necessary to make the amount in such Fund equal to the Debt Service Reserve Requirement. Any balance remaining after such payment and deposit shall be returned by the Depository to the Trustee for deposit into the Revenue Fund, if so directed by the Authority, and otherwise into the Maintenance Reserve Fund.

Valuation of Funds and Accounts (Section 5.11 of the Bond Resolution)

The Trustee, or a Depository, if any Fund or Account is held by a Depository, shall, as of the close of business on the last day of each month, compute in the manner set forth in the Bond Resolution the value of the moneys and Investment Securities in all of the Funds and Accounts held by the Trustee or the Depository, as the case may be, and shall as promptly as practicable thereafter notify the Authority as to the result of such computation and the amount of deficiency or surplus in such Fund or Account as of such date.

Depositories (Section 6.01 of the Bond Resolution)

All moneys held by the Trustee under the provisions of the Bond Resolution shall be deposited with the Trustee or with one or more Depositories in trust for the Trustee. All moneys held by the Authority under the Bond Resolution shall be deposited with one or more Depositories in the name of the Authority. Each Depository shall be a commercial bank or trust company organized under the laws of any state of the United States or a national banking association, each having capital stock, surplus and undivided earnings of [[45,000,000]] or more and willing and able to accept such office on reasonable and customary terms and authorized by law to act in accordance with the provisions of the Bond Resolution.

Investment of Certain Funds (Section 6.03 of the Bond Resolution)

Moneys held in the Debt Service Fund and the Debt Service Reserve Fund shall be invested and reinvested by the Trustee at the direction of the Authority to the fullest extent practicable in Investment Securities maturing or redeemable at the option of the holder thereof no later than necessary to provide moneys when needed for payments to be made from such Funds; provided, however, that moneys in the Debt Service Fund and the Debt Service Reserve Fund shall only be invested in Investment Securities of the types described in clauses (i) and (ii) of the definition thereof and shall not be invested in any Investment Security maturing or redeemable at the option of the holder thereof later than five years from the date of purchase. Moneys in the Revenue Fund may be invested and reinvested by the Trustee, in Investment Securities which mature not later than such times as shall be necessary to provide moneys when needed for payments to be made from such Fund. Moneys in the General Fund and the Maintenance

Reserve Fund may be invested by the Trustee in Investment Securities which mature not later than necessary to provide moneys when needed for payments from such Funds. The Trustee, or the Depositary, shall make all such investments of moneys held by it in accordance with oral instructions, immediately confirmed by written instructions received from any Authorized Officer of the Authority.

Notwithstanding anything herein to the contrary, investments in all Funds and Accounts shall be subject to rebate to the United States Treasury Department as provided in the Bond Resolution and the Supplemental Resolution.

Indebtedness and Liens (Section 7.07 of the Bond Resolution)

So long as the Bonds of any Series shall be Outstanding, the Authority shall not issue any bonds or other evidences of indebtedness, other than the Bonds and Subordinated Indebtedness, which are payable from or secured by a pledge of the Revenues or of the moneys, securities or funds held or set aside by the Authority or by the Trustee under the Bond Resolution, and shall not create or cause to be created any lien or charge on the Revenues or such moneys, securities or funds ranking prior to or on a parity with the lien and pledge created by the Bond Resolution and with any applicable Supplemental Resolution; provided, however that nothing contained in the Bond Resolution shall prevent the Authority from entering into or issuing (i) evidences of indebtedness payable from, or secured by the pledge of, Revenues to be derived on and after such date as the pledge of Net Revenues provided in the Bond Resolution shall be discharged and satisfied as provided in the Bond Resolution, or (ii) all such indebtedness and any pledge securing the same as shall be, and as shall be expressed to be, subordinate in all respects to the Bonds and the pledge created by the Bond Resolution.

Limitations on Operating Expenses (Section 7.11 of the Bond Resolution)

The Authority shall not pay Operating Expenses in any year in excess of the reasonable and necessary amount thereof, and shall not expend any amount for Operating Expenses for such year in excess of the amounts provided in the report of financial condition in accordance with the Bond Resolution, unless the Authority pursuant to a resolution shall adopt and file with the Trustee an amended report of financial condition. The amount which the Authority may expend for Operating Expenses is not limited in any year provided any amounts expended therefor in excess of such annual report of financial condition or such amended report of financial condition shall be received by the Authority from a source other than Revenues and the Authority shall not make or receive any reimbursement therefor out of Revenues.

Toll and Charges (Section 7.13 of the Bond Resolution)

The Authority shall at all times fix, charge and collect tolls and other charges for the use of the Bridge System at rates not less than those set forth in any schedule of tolls and other charges then in effect.

The Authority shall at all times fix, charge and collect such tolls and other charges for the use of the Bridge System as shall be required by the Act and as shall be required in order that in each Fiscal Year Net Revenues less investment earnings on amounts held in the General Fund and the Construction Fund included therein shall at least equal the Net Revenue Requirement for such year.

The Authority shall, on or before the sixtieth day preceding the first day of each Fiscal Year, complete a review of its financial condition for the purpose of estimating whether Net Revenues less investment earnings on amounts held in the General Fund and the Construction Fund included therein for such year and for the next succeeding year will be sufficient to comply with the covenant described in the

immediately preceding paragraph and shall by resolution make a determination with respect thereto (computing interest on Variable Rate Bonds using the actual interest rate to the date of such review and the Estimated Average Interest Rate for the following year). A copy of such resolution, certified by an Authorized Officer of the Authority, together with a certificate of such Authorized Officer of the Authority setting forth a reasonably detailed statement of the actual and estimated Revenues, Operating Expenses and any other estimates or assumptions upon which such determination was based, shall be filed with the Trustee on or before the sixtieth day preceding the first day of each Fiscal Year. If the Authority determines that the Net Revenues less investment earnings on amounts held in the General Fund and the Construction Fund included therein may not be so sufficient, it shall (1) promptly cause the Traffic Consultant to make a study for the purpose of recommending a schedule of tolls and other charges for the Bridge System which, in the opinion of the Traffic Consultant, will cause sufficient Revenues to be collected in the following Fiscal Year to comply with said covenant and will cause additional Revenues to be collected in such following and later Fiscal Years sufficient to restore the amount of any deficiency at the earliest practicable time, and (2) as promptly as practicable but no later than the first day of the fourth month of the next Fiscal Year, adopt and place in effect the schedule of tolls and other charges recommended by the Traffic Consultant.

Failure to comply with the toll covenant shall not constitute an Event of Default and if the Authority shall comply with the preceding paragraph. If the Traffic Consultant certifies that a schedule of tolls or charges which would meet such requirements is impracticable or would result in a reduction of Net Revenues, the Authority may fix such schedule as recommended by the Traffic Consultant, and such failure to comply with the toll covenant shall not constitute an Event of Default.

Reconstruction; Application of Insurance Proceeds (Section 7.15 of the Bond Resolution)

The proceeds of any insurance paid on account of damage or destruction of any portion of the Bridge System, other than the proceeds of any use or occupancy insurance, shall be applied to the reconstruction or replacement thereof. The proceeds of any insurance not so applied within 18 months after receipt shall be paid to the Trustee for deposit to the credit of the Revenue Fund.

If the proceeds of insurance authorized to be applied to the reconstruction or replacement of any portion of the Bridge System are insufficient for such purpose, the deficiency may be supplied out of moneys in the Maintenance Reserve Fund to the extent, as shown by a certificate of the Consulting Engineer filed with the Trustee, not needed to be reserved for the purposes of such Fund.

The proceeds of insurance against physical loss of or damage to any Project, or Additional Project, or of contractors' performance bonds with respect to any Project, or Additional Project, received during the period of construction thereof, shall be paid to the Authority and applied toward the payment of the costs of such Project or Additional Project.

Accounts and Reports (Section 7.16 of the Bond Resolution)

The Authority shall keep or cause to be kept proper books, records and accounts (separate from all other books, records and accounts) in which complete and correct entries shall be made of its transactions relating to the Bridge System, the Funds and Accounts held by the Authority, which are established by the Bond Resolution or any Supplemental Resolution, and which, together with all other books and papers of the Authority, including insurance policies, shall at all times be subject to the inspection of the Trustee and the Holders of not less than 25% in principal amount of any Series of Bonds then Outstanding or their representatives duly authorized in writing. The Authority further covenants that it will keep an accurate record of the total Cost of the Bridge System, of the Revenues collected and of the application of such Revenues and the Available Revenues.

The Authority shall annually, within 100 days after the close of each Fiscal Year, cause its said books of record and accounts to be audited and shall file with the Trustee a copy of an annual report for such year, accompanied by an Independent Accountant's certificate or letter (or, if the Authority so elects, a certificate or letter of the Comptroller of the State of New York in substantially like form), relating to the Bridge System.

Tax Covenants (Section 7.17 of the Bond Resolution)

The Authority agrees that it will make no use of proceeds of the Bonds, or of amounts which may be treated as proceeds thereof, which would cause any Bonds which, when initially issued and sold, were the subject of an Opinion of Bond Counsel to the effect that interest thereon (including, for this purpose, earned discount on discount Bonds) was not includable in the gross income of the Holders thereof for Federal income tax purposes pursuant to Section 103(a) of the Code, to be "arbitrage bonds" within the meaning of Section 148 of the Code and the applicable Treasury Regulations promulgated thereunder.

The Authority covenants that it will not take any action or fail to take any action with respect to the proceeds of the Bonds or any property financed with such proceeds, or take or fail to take any other action, that would result in loss of the exclusion from the gross income of the Holders thereof pursuant to Section 103(a) of the Code of interest paid on Outstanding Bonds which, when initially issued and sold, were the subject of an Opinion of Bond Counsel to the effect that interest thereon (including, for this purpose, earned discount on discount Bonds) was so excludable.

Events of Default and Remedies of Bondholder (Sections 8.01 through 8.06 of the Bond Resolution)

If one or more of the following events (in the Bond Resolution called "Events of Default") shall happen, that is to say:

(a) If a default shall occur in the due and punctual payment of the principal or Redemption Price of any Bond or the payment of the purchase price of any Option Bonds when and as the same shall become due and payable, whether at maturity or by call for redemption, or otherwise;

(b) If a default shall occur in the due and punctual payment of any installment of interest on any Bond when and as such become due and payable;

(c) If a default shall occur in the performance or observance by the Authority of any other of the covenants, agreements or conditions in the Bond Resolution, the applicable Supplemental Resolution or in the Bonds of any Series contained, and such default shall continue for a period of 60 days after written notice thereof to the Authority by the Trustee or to the Authority and to the Trustee by the Holders of not less than a majority in principal amount of the Bonds of such Series Outstanding; or

(d) Certain events of bankruptcy or insolvency;

then, and in each and every such case, so long as such Event of Default shall not have been remedied, unless the principal of all the Bonds shall have already become due and payable, the Trustee may, and upon the written request of the holders of not less than a majority of all Series of Bonds then Outstanding shall, proceed to enforce by such proceedings at law or in equity as it deems most effectual the rights of Bondholders, and either the Trustee (by notice in writing to the Authority), or the Holders of not less than a majority in principal amount of the Bonds Outstanding (by notice in writing to the Authority and the Trustee), may declare the principal of all the Bonds then Outstanding, and the interest accrued thereon, to

be due and payable immediately, and upon any such declaration the same shall become and be immediately due and payable subject, however, to rescission of such declaration and annulment of the default upon remedying thereof.

The Authority covenants that if an Event of Default shall have happened and shall not have been remedied, the books of record and account of the Authority and all other records related to the Bridge System shall at all times be subject to the inspection and use of the Trustee and of its agents and attorneys and the Authority, upon demand of the Trustee, will account, as if it were the trustee of an express trust, for all Available Revenues and other moneys, securities and funds pledged or held under the Bond Resolution for such period as shall be stated in such demand and the Authority, upon demand of the Trustee, shall pay over or cause to be paid over to the Trustee (i) forthwith, all moneys, securities and funds then held by the Authority in any Fund or Account under the Bond Resolution, and (ii) all Available Revenues as promptly as practicable after receipt thereof.

During the continuance of an Event of Default, the Trustee shall apply such moneys, securities, funds and Available Revenues and the income therefrom as follows and in the following order:

(1) to the payment of the reasonable and proper charges, expenses and liabilities of the Trustee (including the fees and expenses of its attorneys, agents and employees) and of any engineer or firm of engineers selected by the Trustee pursuant to this Article;

(2) to the payment of the amounts required for reasonable and necessary Operating Expenses and for the reasonable renewals, repairs and replacements of the Bridge System necessary to prevent loss of Revenues;

(3) to the payment of the interest and principal or Redemption Price then due on all Series of Bonds, as follows:

(a) unless the principal of all the Bonds shall have become or have been declared due and payable:

FIRST: To the payment to the persons entitled thereto of all installments of interest then due to the order of the maturity of such installments, together with accrued and unpaid interest on the Bonds theretofore called for redemption, and, if the amount available shall not be sufficient to pay in full any installment or installments maturing on the same date, then to the payment thereof ratably, according to the amounts due thereon, to the persons entitled thereto, without any discrimination or preference; and

SECOND: To the payment to the persons entitled thereto of the unpaid principal or Redemption Price of any bonds which shall have become due, whether at maturity or by call for redemption, in the order of their due dates, and, if the amount available shall not be sufficient to pay in full all Bonds then Outstanding due on any date, then to the payment thereof ratably, according to the amounts of principal or Redemption Price due on such date, to the persons entitled thereto, without any discrimination or preference;

(b) if the principal of all Bonds then Outstanding shall have become or have been declared due and payable, to the payment of the principal and interest due and unpaid upon such Bonds without preference or priority of principal over interest or of interest over principal, or of any Bond over any other Bond ratably according to the

amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or preference.

If an Event of Default shall happen and shall not have been remedied, then and in every such case, the Trustee, by its agents and attorneys, may proceed, and upon written request of the holders of not less than a majority in principal amount of the Bonds Outstanding shall proceed, to protect and enforce its rights and the rights of the Holders of the Bonds under the Bond Resolution forthwith by a suit or suits in equity or at law.

Regardless of the happening of an Event of Default, the Trustee shall have power, but unless requested in writing by the Holders of a majority in principal amount of the Bonds then Outstanding, and furnished with reasonable security and indemnity, shall be under no obligation, to institute and maintain such suits and proceedings as may be necessary or expedient to prevent any impairment of the security under the Bond Resolution and to preserve or protect its interests and the interests of the Bondholders.

No Holder of any Bond shall have any right to institute any suit for the enforcement of any provision of the Bond Resolution or the execution of any trust under the Bond Resolution or for any remedy under the Bond Resolution, unless such Holder shall have previously given to the Trustee written notice of the happening of an Event of Default unless the Holders of at least a majority in principal amount of the Bonds then Outstanding shall have filed a written request with the Trustee, have offered adequate security and the Trustee shall have failed to comply with such request in the manner provided in the Bond Resolution.

No remedy by the terms of the Bond Resolution conferred upon or reserved to the Trustee or the Bondholders is intended to be exclusive of any other remedy, but each remedy shall be cumulative and shall be in addition to every other remedy given under the Bond Resolution or existing at law or in equity or by statute on or after the date of adoption of the Bond Resolution.

Trustee to Exercise Powers of Statutory Trustee (Section 8.08 of the Bond Resolution)

The Trustee is vested with all of the rights, powers and duties of a trustee appointed by Bondholders pursuant to Section 537 of the Act except to the extent that such rights, powers and duties would be inconsistent with the terms hereof or with the provisions of a Supplemental Resolution or Certificate of Determination authorized by the Resolution. The right of the Bondholders to appoint a trustee pursuant to Section 537 of the Act is expressly abrogated in accordance with the provisions of the Act.

Notice of Default (Section 8.09 of the Bond Resolution)

The Trustee shall promptly mail to Holders of Bonds written notice of the occurrence of any Event of Default of which the Trustee has knowledge.

Supplemental Resolutions; Powers of Amendment (Sections 10.01, 10.03, 10.04, 11.02 and 12.02 of the Bond Resolution)

The Authority may adopt at any time or from time to time a Supplemental Resolution to authorize the issue of a specific Series of Bonds as described above under the subheading "Authorization of Bonds". A copy of each such Supplemental Resolution, together with a copy of the Bond Resolution, each certified by an Authorized Officer of the Authority, shall be filed with the Trustee.

A Supplemental Resolution for any one or more of the following purposes shall be fully effective in accordance with its terms and upon the filing with the Trustee of a copy thereof certified by an Authorized Officer of the Authority: (a) to close the Bond Resolution against, or impose additional limitations or restrictions on, the issuance of other notes, bonds, obligations or evidences of indebtedness; (b) to impose additional covenants or agreements to be observed by the Authority which are not contrary to or inconsistent with the Bond Resolution; (c) to impose other limitations or restrictions upon the Authority; (d) to surrender any right, power or privilege reserved to or conferred upon the Authority by the Bond Resolution; (e) to specify and determine the matters and things referred to above under the subdivision "Authorization of Bonds", and any other matters and things relative to such Bonds which are not contrary to or inconsistent with the Bond Resolution as theretofore in effect, or to amend, modify or rescind any such authorization, specification or determination at any time prior to the first authentication and delivery of such Bonds including, without limiting the generality of the foregoing, provisions amending or modifying the Bond Resolution to provide for the issuance of Bonds in book-entry form; (f) to confirm, as further assurance, any pledge of or lien upon the Revenues or any other moneys, securities or funds.

A Supplemental Resolution for any one or more of the following purposes shall be fully effective in accordance with its terms upon (i) the filing with the Trustee of a copy thereof certified by an Authorized Officer of the Authority and (ii) the filing with the Trustee and the Authority of the Trustee's written consent thereto: (a) to cure any ambiguity, omission or defect in the Bond Resolution; (b) to modify or amend any of the terms or provisions of the Bond Resolution if no Bonds are Outstanding at the time such written consent is filed; (c) to modify or amend any of the terms or provisions of the Bond Resolution, provided that such modification by its terms shall not take effect until all Bonds Outstanding on the date of adoption of such Supplemental Resolution shall have ceased to be Outstanding; (d) to modify or amend the Bond Resolution in any manner which will not materially adversely affect or diminish the rights of any Bondholders; (e) to modify or amend the Bond Resolution to comply with applicable Federal securities laws; and (f) to make any other modification or amendment of the Bond Resolution with a Rating Confirmation.

Any modification or amendment of the Bond Resolution and of the rights and obligations of the Authority and of the Holders of the Bonds thereunder, in any particular, may be made by Supplemental Resolution of the Authority, with the written consent of the Holders of at least a majority in principal amount of the Bonds outstanding at the time such consent is given, or in case less than all of the Bonds then Outstanding are affected, or the Holders of at least a majority in principal amount of the Bonds so affected, and Outstanding at the time such consent is given, and in case the modification or amendment changes the terms of any Sinking Fund Installment, of the Holders of one hundred per centum (100%) in principal amount of the Bonds of the particular maturity entitled to such Sinking Fund Installment and Outstanding at the time such consent is given; provided, however, that if such modification or amendment will, by its terms, not take effect so long as any Bonds of any specified like maturity remain Outstanding, the consent of the Holders of such Bonds shall not be required and such Bonds shall not be deemed to be Outstanding for the purpose of any calculation of Outstanding Bonds under this Section. No such modification or amendment shall permit a change in the terms of redemption or maturity of the principal of any Outstanding Bonds, or of any installment of interest thereon or a reduction in the principal amount or the Redemption Price thereof or in the rate of interest thereon without the consent of the Holder of such Bond, or shall reduce the percentages or otherwise affect the classes of Bonds the consent of the Holders of which is required to effect any such modification or amendment of the Bond Resolution if the same adversely affects or diminishes the rights of the Holders of such Bonds. The Trustee may in reliance on an opinion of Bond Counsel determine whether the rights of the Holders of any particular Bonds would be materially adversely affected or diminished by any such modification or amendment, and its determination shall be binding and conclusive on the Authority and all Holders of Bonds.

For the purposes of such consents, notwithstanding anything herein to the contrary, the consent of Owners of any Series of Additional Bonds to be issued hereunder shall be deemed given if the underwriters or initial purchasers for resale thereof consent in writing to any modification or amendment effected thereby, and such modification or amendment, as well as such consent, is disclosed in the official statement or other offering document pursuant to which such Series of Additional Bonds is offered and sold.

Obligations of the Authority Unconditional (Section 12.01 of the Bond Resolution)

Nothing contained in the Bond Resolution or in any Bond is intended to or shall impair, as between the Authority and the Holders of the Bonds, the obligation of the Authority, which is absolute and unconditional, to pay to the Holders of the Bonds the principal and interest on the Bonds as and when the same shall become due and payable in accordance with their terms, or is intended to or shall affect the relative rights of the Holders of the Bonds and creditors of the Authority, nor shall anything therein prevent the Trustee or the Holder of any Bond from exercising all remedies otherwise permitted by applicable law upon default under the Bond Resolution, in respect of cash or property of the Authority received upon the exercise of any such remedy.

Defeasance (Section 13.01 of the Bond Resolution)

If the Authority shall pay or cause to be paid, or there shall otherwise be paid, to the holders of all Bonds of a Series the principal or Redemption Price, if applicable, and interest due or to become due thereon, and all other sums payable by the Authority pursuant to the Bond Resolution and the applicable Supplemental Resolution, at the times and in the manner stipulated therein and in the Bond Resolution and applicable Supplemental Resolution, then the pledge of any Revenues, and other moneys and securities pledged under the Bond Resolution and applicable Supplemental Resolution and all covenants, agreements and other obligations of the Authority to such Bondholders, shall thereupon be released, discharged and satisfied. In such event, the Trustee, upon request of the Authority, shall cause an accounting and all other sums payable by the Authority pursuant to the Bond Resolution and the applicable Supplemental Resolution to be prepared and filed with the Authority, and shall execute and deliver to the Authority all such instruments as may be desirable to evidence such discharge and satisfaction, and the Fiduciaries shall pay over or deliver to the Authority all moneys and securities held by them pursuant to the Bond Resolution and applicable Supplemental Resolution which are not required for the payment of Bonds not theretofore surrendered for such payment or redemption. If the Authority shall pay or cause to be paid, or there shall otherwise be paid, to the Holders of all Outstanding Bonds of a particular Series, the principal or Redemption Price, if applicable, and interest due or to become due thereon, at the times and in the manner stipulated therein and in the Bond Resolution and applicable Supplemental Resolution, such Bonds shall cease to be entitled to any lien, benefit or security under the Bond Resolution and applicable Supplemental Resolution, and all covenants, agreements and obligations of the Authority to the Holders of such Bonds shall thereupon be discharged and satisfied.

Bonds or interest installments for the payment or redemption of which moneys shall have been set aside and shall be held in trust by the Trustee and/or the Paying Agents at the maturity or redemption date thereof shall be deemed to have been paid within the meaning and with the effect expressed in the immediately preceding paragraph. Any Outstanding Bonds shall prior to the maturity or redemption date thereof be deemed to have been paid within the meaning and with the effect expressed in the immediately preceding paragraph if the Authority shall have delivered to or deposited with the Trustee (i) irrevocable instructions to pay or redeem all of said Bonds in specified amounts no less than the respective amounts, and on specified dates no later than the respective due dates, of their Principal Installments, (ii) irrevocable instructions to mail to the holders thereof notice of redemption of any Bonds to be so redeemed, (iii) either moneys in an amount which shall be sufficient, or

Defeasance Obligations the principal of or the principal of and the interest on which, when due will provide moneys which, together with the moneys, if any, deposited with the Trustee at the same time, shall be sufficient to pay when due the principal or Redemption Price, if applicable, and interest due and to become due on said Bonds on and prior to each specified redemption date or maturity date thereof, as the case may be, and (iv) if any of said Bonds are not to be redeemed within the next succeeding 60 days, irrevocable instructions to mail, as soon as practicable, a notice to the holders of such Bonds that the deposit of moneys referred to in clause (iii) hereof has been made with the Trustee and that said Bonds are deemed to have been paid in accordance with Section 13.01 of the Bond Resolution and stating the maturity or redemption date upon which moneys are to be available for the payment of the principal or Redemption Price, if applicable, of said Bonds. Any notice of redemption pursuant to the immediately preceding sentence with respect to Bonds which constitute less than all of the Outstanding Bonds of any maturity within a Series shall specify the letter and number or other distinguishing marks of each such Bond. The Defeasance Obligations and moneys deposited with the Trustee pursuant to this paragraph shall be held in trust for the payment of the principal or Redemption Price, if applicable, and interest on said Bonds. No payments of principal of any such Defeasance Obligations shall be withdrawn or used for any purpose other than payment of such principal or Redemption Price of, or interest on, said Bonds. Payments of interest on any such Defeasance Obligations shall be withdrawn and used for the purpose of payment of any principal, Redemption Price or interest to the full extent necessary to accomplish such purpose. To the extent that payments of interest on any such Defeasance Obligations are not needed for such purpose, such payments may be applied, and may be pledged by the Authority, to secure the payment of any bonds or other obligations of the Authority whose proceeds shall have been used, in whole or in part, to acquire such Defeasance Obligations. Any cash received from any such interest payments not needed for any of the said purposes shall, to the extent practicable, be reinvested in Defeasance Obligations maturing at times and in amounts sufficient to pay when due the principal or Redemption Price, if applicable, and interest to become due on said Bonds on and prior to such redemption date or maturity date thereof, as the case may be, and interest earned from such reinvestments shall be paid over to the Authority, as received by the Trustee, free and clear of any trust, lien or pledge.

Amounts deposited with the Trustee for the payment of Principal Installments of and interest on any Bonds deemed to be paid pursuant to the Bond Resolution, if so directed by the Authority, shall be applied by the Trustee to the purchase of such Bonds in accordance with the Bond Resolution. Bonds for which a redemption date has been established may be purchased on or prior to the 60th day preceding the redemption date of Bonds so purchased. Bonds which mature on a single future date may be purchased at any time prior to the maturity date. All such purchases shall be made at prices not exceeding the applicable principal amount or Redemption Price established pursuant to the prior paragraph, plus accrued interest thereon, and such purchases shall be made in such manner as the Trustee shall determine. No purchase shall be made by the Trustee pursuant to this paragraph if such purchase would result in the Trustee holding less than the moneys required to be held for the payment of all other Bonds deemed to be paid pursuant to the Bond Resolution.

The Authority may purchase with any available funds any Bonds determined to be paid pursuant to the Bond Resolution. Bonds for which a redemption date has been established may be purchased by the Authority on or prior to the 60th day preceding the redemption date. On or prior to the 60th day preceding the redemption date the Authority shall give notice to the Trustee of its intention to surrender such Bonds on the redemption date. The Trustee shall proceed to call for redemption the remainder of the Bonds due to the redemption date and shall pay to the Authority on the redemption date the Redemption Price of and interest on such Bonds upon surrender of such Bonds to the Trustee. Bonds which mature on a single future date may be purchased at any time prior to the maturity date. The Trustee shall pay to the Authority the principal amount of and interest on such Bonds upon surrender of such Bonds on the maturity date.

Option Bonds shall be deemed to have been paid within the meaning and effect expressed in the Bond Resolution only if, in addition to satisfying the requirements thereof, the requirements of the Supplemental Resolution authorizing the issuance of such Option Bonds have been satisfied.

Variable Rate Bonds shall be deemed to have been paid prior to the maturity or redemption date thereof, as the case may be, within the meaning and effect expressed in the Bond Resolution only if, in addition to satisfying the requirements thereof, the requirements of the Supplemental Resolution authorizing the issuance of such Variable Rate Bonds shall have been satisfied.

[THIS PAGE INTENTIONALLY LEFT BLANK]

Appendix E – Book-Entry Only System

Unless otherwise noted, the information contained in the following paragraphs of this Appendix E, “Book-Entry-Only System” has been extracted from information given by DTC. None of the Authority, the Trustee or the Underwriters makes any representation as to the completeness or accuracy of such information or as to the absence of material adverse changes in such information subsequent to the date hereof.

1. DTC will act as securities depository for the Bonds. The Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC’s partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully registered Bond certificate will be issued for each maturity of the Bonds, each in the aggregate principal amount of such maturity, and will be deposited with DTC. If, however, the aggregate principal amount of any maturity exceeds \$500 million, one certificate will be issued with respect to each \$500 million of principal amount and an additional certificate will be issued with respect to any remaining principal amount of such maturity.

2. DTC, the world’s largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a “banking organization” within the meaning of the New York Banking Law, a member of the Federal Reserve System, a “clearing corporation” within the meaning of the New York Uniform Commercial Code, and a “clearing agency” registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC’s participants (“Direct Participants”) deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants’ accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation (“DTCC”). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly (“Indirect Participants”). DTC has S&P’s highest rating: AAA. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com and www.dtc.org.

3. Purchases of Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Bonds on DTC’s records. The ownership interest of each actual purchaser of each Bond (“Beneficial Owner”) is in turn to be recorded on the Direct and Indirect Participants’ records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Bonds, except in the event that use of the book-entry system for the Bonds is discontinued.

4. To facilitate subsequent transfers, all Bonds deposited by Direct Participants with DTC are registered in the name of DTC’s partnership nominee, Cede & Co., or such other name as may be

requested by an authorized representative of DTC. The deposit of any Series of Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Securities are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

5. Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. [Beneficial Owners of Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Bonds, such as redemptions, tenders, defaults, and proposed amendments to the Bond documents. For example, Beneficial Owners of Bonds may wish to ascertain that the nominee holding the Bonds for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the registrar and request that copies of notices be provided directly to them.]

6. Redemption notices shall be sent to DTC. If less than all of the Bonds within a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such maturity to be redeemed.

7. Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the issuer as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

8. Redemption proceeds, distributions, and dividend payments on the Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the Authority or Trustee or any paying agent, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, Trustee, paying agent or the Authority, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds, distributions, and dividend payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the Authority or Trustee, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

9. A Beneficial Owner shall give notice to elect to have its Bonds purchased or tendered, through its Participant, to any tender agent or remarketing agent, and shall effect delivery of such Bonds by causing the Direct Participant to transfer the Participant's interest in the Bonds, on DTC's records, to any tender agent or remarketing agent for a Series. The requirement for physical delivery of Bonds in connection with an optional tender or a mandatory purchase will be deemed satisfied when the ownership rights in the Bonds are transferred by Direct Participants on DTC's records and followed by a book-entry credit of tendered Bonds to the tender agent or remarketing agent's DTC account.

10. DTC may discontinue providing its services as depository with respect to the Bonds at any time by giving reasonable notice to the Authority or the Trustee. Under such circumstances, in the event that a successor depository is not obtained, Bond certificates are required to be printed and delivered.

11. The Authority may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Bond certificates will be printed and delivered to DTC.

12. The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that Issuer believes to be reliable, but Issuer takes no responsibility for the accuracy thereof.

NONE OF THE AUTHORITY, THE TRUSTEE OR THE UNDERWRITERS WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO SUCH DTC PARTICIPANTS, INDIRECT PARTICIPANTS OR TO THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE PAYMENTS OR THE PROVIDING OF NOTICE FOR SUCH DTC PARTICIPANTS, INDIRECT PARTICIPANT OR THE BENEFICIAL OWNERS.

[THIS PAGE INTENTIONALLY LEFT BLANK]

Appendix F-1 – Form of Approving Opinion of Bond Counsel—Series 2021 New Money Bonds

Upon delivery of the Series 2021 New Money Bonds in definitive form, Rodenhausen Chale & Polidoro LLP, Bond Counsel to the Authority, proposes to render its approving opinion in substantially the following form:

July 29, 2021

New York State Bridge Authority
P.O. Box 1010
Highland, New York 12528

Re: \$73,300,000 New York State Bridge Authority
General Revenue Bonds, Series 2021A

Ladies and Gentlemen:

We have acted as bond counsel to the New York State Bridge Authority (the "Authority") in connection with the issuance by the Authority of its General Revenue Bonds, Series 2021A dated as of the date hereof in the aggregate original principal amount of \$73,300,000 (the "Series 2021A Bonds"). In such capacity, we have examined such law and such certified proceedings and other documents as we have deemed necessary to render this opinion.

The Series 2021A Bonds are issued under and pursuant to the New York State Bridge Authority Act, Title 2 of Article 3 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State of New York, as amended (the "Act"), the General Revenue Bond Resolution adopted by the Authority on December 19, 1996, as amended and supplemented (the "Bond Resolution") and a Fifth Supplemental Bond Resolution (the "Supplemental Resolution") adopted by the Authority on May 27, 2021 (the Bond Resolution and the Supplemental Resolution are collectively referred to herein as the "Resolutions"), and other proceedings duly had and taken in accordance therewith. Capitalized terms used herein and not otherwise defined have the meanings set forth in the Resolutions.

The Series 2021A Bonds are issued as fully registered bonds without coupons, and mature on January 1 of each of the years and bear interest payable semiannually on January 1 and July 1 of each year, commencing January 1, 2022, at the respective rates per annum as set forth in the Certificate of Determination of the Authority dated July 14, 2021. The Series 2021A Bonds are subject to redemption as set forth in the Resolutions and the Certificate of Determination. The Series 2021A Bonds are issued for the purposes described in the Resolutions.

The Authority has the right to issue additional series of Bonds pursuant to the Bond Resolution, ranking equally as to security and payment with the Series 2021A Bonds, upon the terms and conditions and for the purposes stated in the Resolutions.

The Internal Revenue Code of 1986, as amended (the "Code"), establishes certain requirements that must be met subsequent to the issuance and delivery of the Series 2021A Bonds in order that interest on the Series 2021A Bonds be and remain not included in gross income for Federal income tax purposes pursuant to Section 103 of the Code. Included among these requirements are restrictions on the investment and use of proceeds of the Series 2021A Bonds and the rebate of certain earnings in respect of such investments to the United States. Noncompliance may cause interest on the Series 2021A Bonds to become subject to Federal income taxes retroactive to the date of issue of the Series 2021A Bonds, irrespective of the date on which such noncompliance occurs or is ascertained. We have examined the Arbitrage and Use of Proceeds Certificate dated the date hereof in which the Authority has made representations, warranties and covenants relating to such requirements for non-inclusion in gross income. The Bond Resolutions and the Arbitrage and Use of Proceeds Certificate obligate the Authority to do and perform all acts and things necessary or desirable to assure that interest on the Series 2021A Bonds is not included in gross income pursuant to Section 103 of the Code. Our opinion in paragraph (F) assumes continuing compliance with such covenants and warranties and the accuracy, in all material respects, of such representations and certifications.

In our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity with the original documents of all documents submitted to us as copies, and the material accuracy of the representations, statements of intention and reasonable expectation and certifications of fact contained in certificates furnished to us in connection with the Series 2021A Bonds. Furthermore, in rendering the following opinions, we have assumed that all documents executed by a person or persons other than the Authority were duly executed and delivered by said other person or persons and that said documents constitute legal, valid and binding obligations of said person or persons enforceable against said person or persons in accordance with their terms.

Based upon our examination of the foregoing and in reliance upon the matters and subject to the limitations contained herein, we are of the opinion, as of the date hereof and under existing law, as follows:

(A) The Authority was duly created and is validly existing under the Act as a public benefit corporation of the State of New York with the corporate power to adopt and perform its obligations under the Resolutions and to issue the Series 2021A Bonds.

(B) The Resolutions have been duly adopted by the Authority and are valid and binding upon the Authority and enforceable in accordance with their terms, except as specified below.

(C) The Series 2021A Bonds have been duly authorized, executed and delivered by the Authority and are the valid and binding direct general obligations of the Authority payable as provided under the Resolutions and the full faith and credit of the Authority are pledged to the payment thereof. The Series 2021A Bonds are enforceable in accordance with their terms and the terms of the Resolutions and are entitled to the benefit of the Act and the Resolutions, except as specified below. All conditions precedent to the delivery of the Series 2021A Bonds have been fulfilled.

(D) The Resolutions create the valid pledge they purport to create of the proceeds of sale of the Series 2021A Bonds, the Net Revenues, and the Funds and Accounts established by the Bond Resolution (other than the Operating Fund, the Rebate Fund and the Subordinated Indebtedness Fund) and subject to the provisions of the Resolutions and the Act permitting the application thereof for or to the purposes and on the terms and conditions therein set forth.

(E) The Series 2021A Bonds are payable solely from the sources described in the Resolutions and do not constitute a debt or liability of the State of New York or any political subdivision of the State.

(F) Under existing statutes and court decisions, interest on the Series 2021A Bonds is not included in gross income for federal income tax purposes pursuant to Section 103 of the Code. In addition, such interest will not be treated as a preference item to be included in calculating alternative minimum taxable income for purposes of the alternative minimum tax imposed with respect to individuals and corporations. Under the Code, however, such interest is included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax that may be imposed with respect to such corporations. We express no opinion regarding other federal tax consequences arising with respect to the Series 2021A Bonds.

(G) The interest on the Series 2021A Bonds is exempt from personal income taxes imposed by the State of New York and its political subdivisions, including the City of New York and the City of Yonkers.

We have examined the executed Series 2021A Bond numbered R-1 in fully registered form and, in our opinion, the form of such Series 2021A Bond and the execution thereof are regular and proper.

It is to be understood that the enforceability of the Series 2021A Bonds and the Resolutions may be limited by bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance or other laws relating to or affecting the rights of creditors in general and general principles of equity (regardless of whether such enforceability is considered in a proceeding in equity or at law). No opinion is expressed as to the availability of any particular remedy provided for in the Resolutions.

We express no opinion with respect to the laws of any jurisdiction other than the State of New York and other than the securities and tax laws of the United States of America. The scope of our engagement as bond counsel in relation to the issuance of the Series 2021A Bonds has extended solely to rendering the opinions expressed herein, and the opinions expressed herein are not intended and should not be construed to express or imply any conclusion that the Net Revenues of the Authority, if any, will be sufficient to enable the Authority to pay the principal of, premium, if any, or interest on the Series 2021A Bonds as the same respectively become due and payable.

This opinion is rendered as of the date hereof, and no opinion is expressed as to matters referred to herein on any subsequent date. Certain requirements and procedures contained or referred to in the Resolutions may be changed, and certain actions may be taken, under the circumstances and subject to the terms and conditions set forth in such documents, upon the advice or with the approving opinion of bond counsel. We express no opinion as to the Series 2021A Bonds or the interest thereon if any change occurs or action is taken upon the advice or approval of bond counsel other than Rodenhausen Chale & Polidoro LLP.

[THIS PAGE INTENTIONALLY LEFT BLANK]

Appendix F-2 – Form of Approving Opinion of Bond Counsel—Series 2021 Refunding Bonds

Upon delivery of the Series 2021 Refunding Bonds in definitive form, Rodenhausen Chale & Polidoro LLP, Bond Counsel to the Authority, proposes to render its approving opinion in substantially the following form:

_____, 2021

New York State Bridge Authority
P.O. Box 1010
Highland, New York 12528

Re: \$40,935,000 New York State Bridge Authority
General Revenue Refunding Bonds, Series 2021B (Forward Delivery)

Ladies and Gentlemen:

We have acted as bond counsel to the New York State Bridge Authority (the "Authority") in connection with the issuance by the Authority of its General Revenue Refunding Bonds, Series 2021B (Forward Delivery) dated as of the date hereof in the aggregate original principal amount of \$40,935,000 (the "Series 2021 Refunding Bonds"). In such capacity, we have examined such law and such certified proceedings and other documents as we have deemed necessary to render this opinion.

The Series 2021 Refunding Bonds are issued under and pursuant to the New York State Bridge Authority Act, Title 2 of Article 3 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State of New York, as amended (the "Act"), the General Revenue Bond Resolution adopted by the Authority on December 19, 1996, as amended and supplemented including by a Fifth Supplemental Resolution adopted May 27, 2021 (the "Bond Resolution") and a Sixth Supplemental Bond Resolution (the "Supplemental Resolution") adopted by the Authority on May 27, 2021 (the Bond Resolution and the Supplemental Resolution are collectively referred to herein as the "Resolutions"), and other proceedings duly had and taken in accordance therewith. Capitalized terms used herein and not otherwise defined have the meanings set forth in the Resolutions.

The Series 2021 Refunding Bonds are issued as fully registered bonds without coupons, and mature on January 1 of each of the years and bear interest payable semiannually on January 1 and July 1 of each year, commencing January 1, 2022, at the respective rates per annum as set forth in the Certificate of Determination of the Authority dated July 14, 2021. The Series 2021 Refunding Bonds are subject to redemption as set forth in the Resolutions and the Certificate of Determination. The Series 2021 Refunding Bonds are issued for the purposes described in the Resolutions.

The Authority has the right to issue additional series of Bonds pursuant to the Bond Resolution, ranking equally as to security and payment with the Series 2021 Refunding Bonds, upon the terms and conditions and for the purposes stated in the Resolutions.

The Internal Revenue Code of 1986, as amended (the "Code"), establishes certain requirements that must be met subsequent to the issuance and delivery of the Series 2021 Refunding Bonds in order

that interest on the Series 2021 Refunding Bonds be and remain not included in gross income for Federal income tax purposes pursuant to Section 103 of the Code. Included among these requirements are restrictions on the investment and use of proceeds of the Series 2021 Refunding Bonds and the rebate of certain earnings in respect of such investments to the United States. Noncompliance may cause interest on the Series 2021 Refunding Bonds to become subject to Federal income taxes retroactive to the date of issue of the Series 2021 Refunding Bonds, irrespective of the date on which such noncompliance occurs or is ascertained. We have examined the Arbitrage and Use of Proceeds Certificate dated the date hereof in which the Authority has made representations, warranties and covenants relating to such requirements for non-inclusion in gross income. The Bond Resolutions and the Arbitrage and Use of Proceeds Certificate obligate the Authority to do and perform all acts and things necessary or desirable to assure that interest on the Series 2021 Refunding Bonds is not included in gross income pursuant to Section 103 of the Code. Our opinion in paragraph (F) assumes continuing compliance with such covenants and warranties and the accuracy, in all material respects, of such representations and certifications.

In our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity with the original documents of all documents submitted to us as copies, and the material accuracy of the representations, statements of intention and reasonable expectation and certifications of fact contained in certificates furnished to us in connection with the Series 2021 Refunding Bonds. Furthermore, in rendering the following opinions, we have assumed that all documents executed by a person or persons other than the Authority were duly executed and delivered by said other person or persons and that said documents constitute legal, valid and binding obligations of said person or persons enforceable against said person or persons in accordance with their terms.

Based upon our examination of the foregoing and in reliance upon the matters and subject to the limitations contained herein, we are of the opinion, as of the date hereof and under existing law, as follows:

(A) The Authority was duly created and is validly existing under the Act as a public benefit corporation of the State of New York with the corporate power to adopt and perform its obligations under the Resolutions and to issue the Series 2021 Refunding Bonds.

(B) The Resolutions have been duly adopted by the Authority and are valid and binding upon the Authority and enforceable in accordance with their terms, except as specified below.

(C) The Series 2021 Refunding Bonds have been duly authorized, executed and delivered by the Authority and are the valid and binding direct general obligations of the Authority payable as provided under the Resolutions and the full faith and credit of the Authority are pledged to the payment thereof. The Series 2021 Refunding Bonds are enforceable in accordance with their terms and the terms of the Resolutions and are entitled to the benefit of the Act and the Resolutions, except as specified below. All conditions precedent to the delivery of the Series 2021 Refunding Bonds have been fulfilled.

(D) The Resolutions create the valid pledge they purport to create of the proceeds of sale of the Series 2021 Refunding Bonds, the Net Revenues, and the Funds and Accounts established by the Bond Resolution (other than the Operating Fund, the Rebate Fund and the Subordinated Indebtedness Fund) and subject to the provisions of the Resolutions and the Act permitting the application thereof for or to the purposes and on the terms and conditions therein set forth.

(E) The Series 2021 Refunding Bonds are payable solely from the sources described in the Resolutions and do not constitute a debt or liability of the State of New York or any political subdivision of the State.

(F) Under existing statutes and court decisions, interest on the Series 2021 Refunding Bonds is not included in gross income for federal income tax purposes pursuant to Section 103 of the Code. In addition, such interest will not be treated as a preference item to be included in calculating alternative minimum taxable income for purposes of the alternative minimum tax imposed with respect to individuals and corporations. Under the Code, however, such interest is included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax that may be imposed with respect to such corporations. We express no opinion regarding other federal tax consequences arising with respect to the Series 2021 Refunding Bonds.

(G) The interest on the Series 2021 Refunding Bonds is exempt from personal income taxes imposed by the State of New York and its political subdivisions, including the City of New York and the City of Yonkers.

We have examined the executed Series 2021 Refunding Bond numbered R-1 in fully registered form and, in our opinion, the form of such Series 2021 Refunding Bond and the execution thereof are regular and proper.

It is to be understood that the enforceability of the Series 2021 Refunding Bonds and the Resolutions may be limited by bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance or other laws relating to or affecting the rights of creditors in general and general principles of equity (regardless of whether such enforceability is considered in a proceeding in equity or at law). No opinion is expressed as to the availability of any particular remedy provided for in the Resolutions.

We express no opinion with respect to the laws of any jurisdiction other than the State of New York and other than the securities and tax laws of the United States of America. The scope of our engagement as bond counsel in relation to the issuance of the Series 2021 Refunding Bonds has extended solely to rendering the opinions expressed herein, and the opinions expressed herein are not intended and should not be construed to express or imply any conclusion that the Net Revenues of the Authority, if any, will be sufficient to enable the Authority to pay the principal of, premium, if any, or interest on the Series 2021 Refunding Bonds as the same respectively become due and payable.

This opinion is rendered as of the date hereof, and no opinion is expressed as to matters referred to herein on any subsequent date. Certain requirements and procedures contained or referred to in the Resolutions may be changed, and certain actions may be taken, under the circumstances and subject to the terms and conditions set forth in such documents, upon the advice or with the approving opinion of bond counsel. We express no opinion as to the Series 2021 Refunding Bonds or the interest thereon if any change occurs or action is taken upon the advice or approval of bond counsel other than Rodenhausen Chale & Polidoro LLP

[THIS PAGE INTENTIONALLY LEFT BLANK]

Appendix G—Form of Delayed Delivery Contract

FORM OF DELAYED DELIVERY CONTRACT

July ____, 2021

RBC Capital Markets, LLC
as Underwriter of the General Revenue Refunding Bonds, Series 2021B

Re: \$40,935,000 New York State Bridge Authority General Revenue Refunding Bonds,
Series 2021B (the “Bonds”)

Ladies and Gentlemen:

The undersigned (the “Purchaser”) hereby agrees to purchase from RBC Capital Markets, LLC, as Underwriter set forth in the Forward Delivery Agreement (defined below) (the “Underwriter”) when, as, and if issued and delivered to the Underwriter by the New York State Bridge Authority (the “Authority”), and the Underwriter agrees to sell to the Purchaser:

<u>Par Amount</u>	<u>Maturity Date</u>	<u>Interest Date</u>	<u>CUSIP Number</u>	<u>Yield</u>	<u>Price</u>
-------------------	----------------------	----------------------	---------------------	--------------	--------------

of the above-referenced Bonds (the “Purchased Obligations”) offered by Authority under the Preliminary Official Statement dated July 6, 2021, and the Official Statement relating to the Purchased Obligations dated July 14, 2021 (the “Official Statement”), at the purchase price and with the interest rates, principal amounts, and maturity dates shown above, and on the further terms and conditions set forth in this Delayed Delivery Contract. The Purchased Obligations are being purchased by the Underwriter pursuant to a Forward Delivery Bond Purchase Agreement dated July 14, 2021 by and between the Authority and the Underwriter (the “Forward Delivery Agreement”). Capitalized terms used but not defined herein shall have the meanings ascribed thereto in the Forward Delivery Agreement or the Official Statement.

The Purchaser hereby confirms that it has reviewed the Preliminary Official Statement and the Official Statement (including without limitation the section entitled “DESCRIPTION OF THE SERIES 2021 BONDS - Delayed Delivery of the Series 2021 Refunding Bonds” therein), has considered the risks associated with purchasing the Purchased Obligations and is duly authorized to purchase the Purchased Obligations. The Purchaser further acknowledges and agrees that the Purchased Obligations are being sold on a “forward” basis, and the Purchaser hereby purchases and agrees to accept delivery of such Purchased Obligations from the Underwriter on or about October 6, 2021 (the “Date of Delivery”) as they may be issued and delivered in accordance with the Forward Delivery Agreement.

Payment for the Purchased Obligations shall be made to the Underwriter or upon its order on the Date of Delivery upon delivery to the Purchaser of the Purchased Obligations through the book-entry system of The Depository Trust Company. The Purchaser agrees that in no event shall the Underwriter be responsible or liable for any claim or loss, whether direct or consequential, which the Purchaser may suffer in the event the Authority does not for any reason issue and deliver the Purchased Obligations.

The obligation of the Purchaser to take delivery of the Purchased Obligations hereunder shall be unconditional. The Purchaser may terminate its obligation to purchase the Purchased Obligations in the event that between Initial Closing and the Date of Delivery (the “Delayed Delivery Period”), one of the following events shall have occurred after Initial Closing and the Purchaser has notified the Underwriter in writing as provided herein:

1. any Change in Law (defined below) shall have occurred;
2. there shall occur any event which, in the reasonable judgment of the Underwriter, either (A) makes untrue or incorrect in any material respect any statement or information contained in the Official Statement, as amended (if applicable), between the date of the Official Statement to and including the Date of Delivery (other than any statement or information provided by the Underwriter) or (B) is not reflected in the Official Statement but should be reflected therein in order to make the statements and information contained therein not misleading in any material respect and, in either such event, the Authority refuses to permit the Official Statement to be supplemented to correct or supply such statement or information, or the effect of the Official Statement as so corrected or supplemented is, in the reasonable judgment of the Underwriter, to materially adversely affect the market for the Purchased Obligations or the sale, at the contemplated offering price or prices (or yield or yields), by the Underwriter of the Purchased Obligations;
3. there shall occur any outbreak of hostilities or any national or international calamity or crisis or a financial crisis or an escalation of any such hostilities, calamity or crisis, the effect of which on the financial markets of the United States is, in the reasonable judgment of the Underwriter, to materially adversely affect the market for the Purchased Obligations or the sale, at the contemplated offering price or prices (or yield or yields), by the Underwriter of the Purchased Obligations;
4. any rating of the Purchased Obligations by a national rating agency rating the Purchased Obligations has been withdrawn or suspended;
5. a general suspension of trading on the New York Stock Exchange shall have occurred and be in force or minimum or maximum prices for trading shall have been fixed and be in force or maximum ranges for prices for securities shall have been required and be in force on the New York Stock Exchange, whether by virtue of a determination by such Exchange or by order of the Securities and Exchange Commission or any other governmental authority the effect of which on the financial markets of the United States is, in the reasonable judgment of the Underwriter, to materially adversely affect the market for the Purchased Obligations or the sale, at the contemplated offering price or prices (or yield or yields), by the Underwriter of the Purchased Obligations;
6. a general banking moratorium shall have been declared by either federal or State authorities and be in force or a material disruption in commercial banking and securities settlement and clearance services shall have occurred, the effect of which on the financial markets of the United States is, in the reasonable judgment of the Underwriter, to materially adversely affect the market for the Purchased Obligations or the sale, at the contemplated offering price or prices (or yield or yields), by the Underwriter of the Purchased Obligations; or
7. a material disruption in commercial banking or securities settlement, payment or clearance services in the United States shall have occurred;
8. the issuance, offering or sale of the Purchased Obligations as contemplated by the Official Statement is or would be in violation of any provision of the federal or state securities laws, including the Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, or the Trust Indenture Act of 1939, as amended; or
9. Bond Counsel cannot deliver opinions substantially in the form attached as Appendix F-2 to the Official Statement.

A "Change in Law" means (i) any change in or addition to applicable federal or state law, whether statutory or as interpreted by the courts, including any changes in or new rules, regulations or other pronouncements or interpretations by federal or state agencies, (ii) any legislation enacted by the

Congress of the United States or introduced therein or recommended for passage by the President of the United States (if such enacted, introduced or recommended legislation has a proposed effective date that is on or before the Date of Delivery), (iii) any law, rule or regulation proposed or enacted by any governmental body, department or agency (if such proposed or enacted law, rule or regulation has a proposed effective date that is on or before the Date of Delivery) or (iv) any judgment, ruling or order issued by any court or administrative body, which in the case of any of (i), (ii), (iii) or (iv) would, (A) as to the Underwriter, prohibit (or have the retroactive effect of prohibiting, if enacted, adopted, passed or finalized) the Underwriter from purchasing the Purchased Obligations as provided in the Forward Delivery Agreement or selling the Purchased Obligations or beneficial ownership interests therein to the public; (B) as to the Authority, would make the issuance, sale or delivery of the Purchased Obligations illegal (or have the retroactive effect of making such issuance, sale or delivery illegal, if enacted, adopted, passed or finalized); or (C) eliminate the exclusion from gross income for federal income tax purposes of interest on the Purchased Obligations (or have the retroactive effect of eliminating such exclusion if enacted, adopted, passed, or finalized) provided, however, that such change in or addition to law, legislation, rule or regulation or judgment, ruling or order shall have become effective, been enacted, introduced or recommended, been proposed or enacted or been issued as the case may be, after the date of the Forward Delivery Agreement.

If the Change of Law involves the enactment of legislation which only diminishes the value of, as opposed to eliminating the exclusion from gross income for federal income tax purposes of interest payable on "state or local bonds," the Authority may, nonetheless, be able to satisfy the requirements for the delivery of the Purchased Obligations. In such event, the Underwriter would be obligated to purchase the Purchased Obligations from the Authority and the Purchaser would be required to accept delivery of the Purchased Obligations from the Underwriter.

The Purchaser acknowledges and agrees that the Purchased Obligations are being sold on a "forward" or "delayed delivery" basis for delivery on the Date of Delivery and that the Purchaser is obligated to take up and pay for the Purchased Obligations on the Date of Delivery unless the Underwriter terminates the Forward Delivery Agreement or the Purchaser terminates its obligation to purchase the Purchased Obligations as described herein. To effect a termination by the Purchaser, the Purchaser acknowledges and agrees that it must give written notice of termination of this Delayed Delivery Contract to the Underwriter before the Date of Delivery. The Purchaser understands and agrees that no termination of the obligation of the Purchaser may occur after the Date of Delivery. The Purchaser is not a third party beneficiary under the Forward Delivery Agreement and has no rights to enforce, or cause the Underwriter to enforce, any of the terms thereof. The Purchaser acknowledges that it will not be able to withdraw its order except as described herein, and will not otherwise be excused from performance of its obligations to take up and pay for the Purchased Obligations on the Date of Delivery because of market or credit changes, including specifically, but not limited to (a) changes in the ratings assigned to the Purchased Obligations or changes in the credit associated with the Purchased Obligations generally, and (b) changes in the financial condition and operations of the Authority. The Purchaser acknowledges and agrees that it will remain obligated to purchase the Purchased Obligations in accordance with the terms hereof, even if the Purchaser decides to sell such Purchased Obligations following the date hereof, unless the Purchaser sells Purchased Obligations to another entity with the prior written consent of the Underwriter and such entity provides a written acknowledgment of confirmation of purchase order and a delayed delivery contract in the same respective forms as that executed by the Purchaser.

The Purchaser represents and warrants that, as of the date of this Delayed Delivery Contract, the Purchaser is not prohibited from purchasing the Purchased Obligations hereby agreed to be purchased by it under the laws of the jurisdiction to which the Purchaser is subject.

This Delayed Delivery Contract will inure to the benefit of and be binding upon the parties hereto and their respective successors, but will not be assignable by either party without the prior written consent of the other.

The Purchaser acknowledges that the Underwriter is entering into the Forward Delivery Agreement with the Authority to purchase the Purchased Obligations in reliance in part on the performance by the Purchaser of its obligations hereunder.

This Delayed Delivery Contract may be executed by either of the parties hereto in any number of counterparts, each of which shall be deemed to be an original, but all such counterparts shall together constitute one and the same instrument under the laws of the State of New York.

It is understood that the acceptance by the Underwriter of any Delayed Delivery Contract (including this one) is in the Underwriter's sole discretion and that, without limiting the foregoing, acceptances of such contracts need not be on a "first-come, first-served" basis. If this Delayed Delivery Contract is acceptable to the Underwriter, it is requested that the Underwriter sign the form of acceptance below and mail or deliver one of the counterparts hereof to the Purchaser at its address set forth below. This will become a binding contract between the Underwriter and the Purchaser when such counterpart is so mailed or delivered by the Underwriter. This Delayed Delivery Contract does not constitute a customer confirmation pursuant to Rule G-15 of the Municipal Securities Rulemaking Board.

This Delayed Delivery Contract shall be construed and administered under the laws of the State of New York.

Purchaser

Address

Telephone

By: _____
Name: _____
Title: _____

Accepted: RBC Capital Markets, LLC, as Underwriter,

Name: _____
Title: _____

