NEW ISSUE – Book-Entry Only **See "RATINGS" herein**

Interest on the Series 2021 B Bonds is included in gross income for federal income tax purposes pursuant to the Internal Revenue Code of 1986, as amended. *In the opinion of McManimon, Scotland & Baumann, LLC, Bond Counsel, based upon existing law, interest on the Series 2021 B Bonds and any gain on the sale thereof are not included in gross income under the New Jersey Gross Income Tax Act. For a more complete discussion, see "TAX MATTERS" herein.*

$995,235,000
NEW JERSEY TURNPIKE AUTHORITY
Turnpike Revenue Bonds, Series 2021 B
(Federally Taxable)

Dated: Date of Delivery **Due: January 1, as shown on the inside front cover**

This Official Statement has been prepared to provide information relating to the issuance by the New Jersey Turnpike Authority (the "Authority") of its $995,235,000 aggregate principal amount of Turnpike Revenue Bonds, Series 2021 B (Federally Taxable) (the "Series 2021 B Bonds"). The Bank of New York Mellon, Woodland Park, New Jersey, will serve as the Trustee, Paying Agent and Registrar for the Series 2021 B Bonds.

Simultaneously with the issuance of the Series 2021 B Bonds, the Authority will be issuing its Turnpike Revenue Bonds, Series 2021 A (the "Series 2021 A Bonds") for the primary purpose paying the costs of construction of various projects which are part of the Authority's ongoing capital improvement programs. **The Series 2021 A Bonds are not being offered pursuant to this Official Statement.**

The Series 2021 B Bonds will be issued in fully registered form without coupons, and, when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC"). DTC will act as securities depository for the Series 2021 B Bonds, as more fully described herein. Individual purchases of the Series 2021 B Bonds will be made in book-entry form only in denominations of $5,000 or any integral multiples thereof. Purchasers of the Series 2021 B Bonds will not receive certificates representing their interest therein.

Interest on the Series 2021 B Bonds will accrue from their Date of Delivery, and will be payable semiannually on each January 1 and July 1, commencing on July 1, 2021, until prior redemption or maturity, and will be calculated on the basis of a 360-day year of twelve 30-day months. The Series 2021 B Bonds will bear interest at the interest rates per annum set forth on the inside front cover page of this Official Statement.

The Series 2021 B Bonds are being issued pursuant to the New Jersey Turnpike Authority Act of 1948 (Chapter 454 of the Laws of New Jersey of 1948), as amended and supplemented (the "Act"), the Turnpike Revenue Bond Resolution adopted by the Authority on August 20, 1991, as amended, restated and supplemented (the "General Bond Resolution"), including as supplemented by the Series 2020 Turnpike Revenue Bond Resolution adopted by the Authority on January 28, 2020 (the "Series 2020 Resolution"), and a Certificate of Determination to be executed by the Executive Director of the Authority prior to the issuance of the Series 2021 B Bonds (the "Certificate of Determination" and, together with the General Bond Resolution and the Series 2020 Resolution, the "Resolution"). The Series 2021 B Bonds will be payable from and secured by a lien on and pledge of the Pledged Revenues of the Turnpike System on a parity with all Bonds Outstanding under the Resolution from time to time, and the Authority's reimbursement and payment obligations under certain Credit Facilities and Qualified Swaps (as such terms are defined in the Resolution).

The Series 2021 B Bonds are subject to redemption prior to maturity at such prices and pursuant to such terms as are described herein. See "THE SERIES 2021 B BONDS – Redemption Prior to Maturity" herein.

The Series 2021 B Bonds are being issued by the Authority to (i) advance refund, redeem and legally defease all or a portion of the Authority's Outstanding Turnpike Revenue Bonds, Series 2012 B, Turnpike Revenue Bonds, Series 2013 A, Turnpike Revenue Bonds, Series 2013 F, Turnpike Revenue Bonds, Series 2014 A and Turnpike Revenue Bonds, Series 2014 C, and (ii) pay the costs of issuance of the Series 2021 B Bonds, all as more fully described herein.

THE SERIES 2021 B BONDS ARE REVENUE OBLIGATIONS OF THE AUTHORITY. THE SERIES 2021 B BONDS ARE NOT A DEBT OR LIABILITY OF THE STATE OF NEW JERSEY OR OF ANY POLITICAL SUBDIVISION THEREOF (OTHER THAN THE AUTHORITY), AND NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OF NEW JERSEY OR OF ANY POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF THE SERIES 2021 B BONDS. THE AUTHORITY HAS NO TAXING POWER.

Selected information is presented on this cover page for the convenience of the user in brief or summary form. To make an informed decision regarding the Series 2021 B Bonds, a prospective purchaser should read this Official Statement in its entirety.

The Series 2021 B Bonds are offered when, as and if issued by the Authority and received by the Underwriters and subject to the approval of legality thereof by McManimon, Scotland & Baumann, LLC, Roseland, New Jersey, Bond Counsel to the Authority. Certain legal matters will be passed upon for the Authority by Ann Christine Monica, Esq., Acting Director of Law of the Authority. Certain legal matters will be passed upon for the Underwriters by their counsel, Wilentz, Goldman & Spitzer, P.A., Woodbridge, New Jersey. Hilltop Securities, New York, New York is acting as Financial Advisor to the Authority. It is expected that the Series 2021 B Bonds will be available for delivery through DTC on or about February 4, 2021.

CITIGROUP

J.P. Morgan **Morgan Stanley** **RBC Capital Markets** **Wells Fargo Securities**

Janney Montgomery Scott **PNC Capital Markets LLC**

Dated: January 21, 2021

$995,235,000
NEW JERSEY TURNPIKE AUTHORITY
Turnpike Revenue Bonds, Series 2021 B
(Federally Taxable)

$852,640,000 Serial Bonds

Maturity (January 1)	Principal Amount	Interest Rate	CUSIP[1]	ISIN[1]	Common Code[2]
2023	$ 2,000,000	0.473%	646140DL4	US646140DL45	229528882
2024	48,970,000	0.638	646140DM2	US646140DM28	229528904
2025	83,210,000	0.897	646140DN0	US646140DN01	229528912
2026	134,625,000	1.047	646140DP5	US646140DP58	229528947
2027	85,365,000	1.283	646140DQ3	US646140DQ32	229529099
2028	154,905,000	1.483	646140DR1	US646140DR15	229528963
2029	85,330,000	1.713	646140DS9	US646140DS97	229528971
2030	86,795,000	1.813	646140DT7	US646140DT70	229528980
2031	122,795,000	1.863	646140DU4	US646140DU44	229528998
2032	11,850,000	1.963	646140DV2	US646140DV27	229529005
2033	17,490,000	2.113	646140DW0	US646140DW00	229529013
2034	8,130,000	2.213	646140DX8	US646140DX82	229529021
2035	8,565,000	2.313	646140DY6	US646140DY65	229529056
2036	2,610,000	2.463	646140DZ3	US646140DZ31	229529064

Price of all Serial Bonds - 100%

$142,595,000 2.782% Term Bond Due January 1, 2040 Price - 100%
CUSIP: 646140EA7[1]; ISIN: US646140EA70[1]; Common Code: 229529072[2]

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(1) CUSIP is a registered trademark of the American Bankers Association. CUSIP and ISIN numbers have been provided by CUSIP Global Services, which is operated on behalf of the American Bankers Association by S&P Global Market Intelligence. The CUSIP and ISIN numbers are being provided solely for the convenience of the holders of the Series 2021 B Bonds only and the Authority does not make any representation with respect to such numbers or undertake any responsibility for their accuracy. The CUSIP and ISIN numbers are subject to being changed after the issuance of the Series 2021 B Bonds as a result of various subsequent actions including, but not limited to, a refunding in whole or in part of the Series 2021 B Bonds.

(2) The Common Codes are provided herein by Euroclear Bank S.A./N.V. The Common Codes are being provided solely for the convenience of the holders of the Series 2021 B Bonds only and the Authority does not make any representation with respect to such numbers or undertake any responsibility for their accuracy.

NEW JERSEY TURNPIKE AUTHORITY

COMMISSIONERS

DIANE GUTIERREZ-SCACCETTI, *Chair*

ULISES E. DIAZ, *Vice Chairman*

MICHAEL R. DuPONT, *Treasurer*

RAYMOND M. POCINO

RONALD GRAVINO

JOHN D. MINELLA

RAPHAEL SALERMO

EXECUTIVE STAFF

JOHN M. KELLER, *Executive Director*

JAMES CARONE, *Deputy Executive Director*

DONNA MANUELLI, *Chief Financial Officer*

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

No dealer, broker, salesman, or any other person has been authorized by the Authority to give any information or to make any representations, other than those contained in this Official Statement, and if given or made, such other information must not be relied upon as having been authorized by the Authority. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of the Series 2021 B Bonds by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale.

The Series 2021 B Bonds have not been registered under the Securities Act of 1933, as amended, and the Resolution has not been qualified under the Trust Indenture Act of 1939, as amended, in reliance upon certain exemptions contained in such Federal laws. In making an investment decision, investors must rely upon their own examination of the Series 2021 B Bonds and the security therefor, including an analysis of the risks involved. The Series 2021 B Bonds have not been recommended by any Federal or state securities commission or regulatory authority. The registration, qualification or exemption of the Series 2021 B Bonds in accordance with applicable provisions of securities laws of the various jurisdictions in which the Series 2021 B Bonds have been registered, qualified or exempted cannot be regarded as a recommendation thereof. Neither such jurisdictions nor any of their agencies have passed upon the merits of the Series 2021 B Bonds or the adequacy, accuracy or completeness of this Official Statement. Any representation to the contrary may be a criminal offense.

References in this Official Statement to statutes, laws, rules, regulations, resolutions, agreements, reports and documents do not purport to be comprehensive or definitive, and all such references are qualified in their entirety by reference to the particular document, the full text of which may contain qualifications of and exceptions to statements made herein. This Official Statement is distributed in connection with the sale of the Series 2021 B Bonds referred to herein and may not be reproduced or used, in whole or in part, for any other purpose.

The order and placement of materials in this Official Statement, including the Appendices, are not to be deemed to be a determination of relevance, materiality or importance, and this Official Statement, including the Appendices, must be considered in its entirety. The offering of the Series 2021 B Bonds is made only by means of this entire Official Statement.

The information and expressions of opinion herein are subject to change without notice and neither the delivery of this Official Statement nor any sale made hereunder shall, under any circumstance, create any implication that there has been no change in the affairs of the Authority since the date hereof.

Certain statements included or incorporated by reference in this Official Statement constitute projections or estimates of future events, generally known as forward-looking statements. These statements are generally identifiable by the terminology used such as “anticipate” “plan,” “expect,” “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 which may cause actual results, performance or achievements to be materially different from any future results, performance or achievements described in or expressed or implied by such forward-looking statements. Other than as may be required by law, the Authority does not plan to issue any updates or revisions to any such forward-looking statements if or when its expectations are realized or not realized, or when the events, conditions or circumstances on which such statements are based, occur.

The Underwriters have provided the following sentence for inclusion in this Official Statement, as well as certain information attributed to the Underwriters in the "UNDERWRITING" section of this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with, and as a part of, their responsibilities to investors under the Federal securities laws as applied to the facts and circumstances of this transaction, but, except for the information attributed to the Underwriters in the "UNDERWRITING" section of this Official Statement, the Underwriters do not guarantee the accuracy or completeness of such information.

INFORMATION CONCERNING OFFERING RESTRICTIONS IN CERTAIN JURISDICTIONS OUTSIDE THE UNITED STATES

REFERENCES TO "BONDS" OR "SECURITIES" MEAN THE SERIES 2021 B BONDS, AS DEFINED HEREIN AND OFFERED HEREBY.

THE UNDERWRITERS HAVE PROVIDED THE INFORMATION SET FORTH ON THIS AND THE FOLLOWING FOUR PAGES FOR INCLUSION IN THIS OFFICIAL STATEMENT.

MINIMUM UNIT SALES

THE BONDS WILL TRADE AND SETTLE ON A UNIT BASIS (ONE UNIT EQUALING ONE BOND OF $5,000 PRINCIPAL AMOUNT). FOR ANY SALES MADE OUTSIDE THE UNITED STATES, THE MINIMUM PURCHASE AND TRADING AMOUNT IS 30 UNITS (BEING 30 BONDS IN AN AGGREGATE PRINCIPAL AMOUNT OF $150,000).

NOTICE TO INVESTORS IN THE EUROPEAN ECONOMIC AREA ("EEA")

THIS OFFICIAL STATEMENT IS NOT A PROSPECTUS FOR THE PURPOSES OF EUROPEAN COMMISSION REGULATION 809/2004 OR EUROPEAN COMMISSION DIRECTIVE 2003/71/EC (AS AMENDED, INCLUDING BY EUROPEAN COMMISSION DIRECTIVE 2010/73/EU, AS APPLICABLE) (THE "PROSPECTUS DIRECTIVE"). IT HAS BEEN PREPARED ON THE BASIS THAT ALL OFFERS OF THE BONDS WILL BE MADE PURSUANT TO AN EXEMPTION UNDER ARTICLE 3 OF THE PROSPECTUS DIRECTIVE, AS IMPLEMENTED IN MEMBER STATES OF THE EEA, FROM THE REQUIREMENT TO PRODUCE A PROSPECTUS FOR SUCH OFFERS. THIS OFFICIAL STATEMENT IS ONLY ADDRESSED TO AND DIRECTED AT PERSONS IN MEMBER STATES OF THE EEA WHO ARE "QUALIFIED INVESTORS" WITHIN THE MEANING OF ARTICLE 2(1)(E) OF THE PROSPECTUS DIRECTIVE AND ANY RELEVANT IMPLEMENTING MEASURE IN EACH MEMBER STATE OF THE EEA ("QUALIFIED INVESTORS"). THIS OFFICIAL STATEMENT MUST NOT BE ACTED ON OR RELIED ON IN ANY SUCH MEMBER STATE OF THE EEA BY PERSONS WHO ARE NOT QUALIFIED INVESTORS. ANY INVESTMENT OR INVESTMENT ACTIVITY TO WHICH THIS OFFICIAL STATEMENT RELATES IS AVAILABLE ONLY TO QUALIFIED INVESTORS IN ANY MEMBER STATE OF THE EEA AND WILL NOT BE ENGAGED IN WITH ANY OTHER PERSONS.

NOTICE TO PROSPECTIVE INVESTORS IN THE UNITED KINGDOM

THIS OFFICIAL STATEMENT HAS NOT BEEN APPROVED FOR THE PURPOSES OF SECTION 21 OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 ("FSMA") AND DOES NOT CONSTITUTE AN OFFER TO THE PUBLIC IN ACCORDANCE WITH THE PROVISIONS OF SECTION 85 OF THE FSMA. THIS OFFICIAL STATEMENT IS FOR DISTRIBUTION ONLY TO, AND IS DIRECTED SOLELY AT, PERSONS IN THE UNITED KINGDOM THAT ARE QUALIFIED INVESTORS WITHIN THE MEANING OF ARTICLE 2(1)(E) OF THE PROSPECTUS DIRECTIVE WHO ARE ALSO (I) INVESTMENT PROFESSIONALS, AS SUCH TERM IS DEFINED IN ARTICLE 19(5) OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (FINANCIAL PROMOTION) ORDER 2005, AS AMENDED (THE "FINANCIAL PROMOTION ORDER") OR (I) HIGH NET WORTH ENTITIES, AND OTHER PERSONS TO WHOM IT MAY LAWFULLY BE COMMUNICATED, FALLING WITHIN ARTICLE 49(2)(A) TO (D) OF THE FINANCIAL PROMOTION ORDER (ALL SUCH PERSONS TOGETHER BEING REFERRED TO AS "RELEVANT PERSONS"). THIS OFFICIAL STATEMENT IS DIRECTED ONLY AT RELEVANT PERSONS AND MUST NOT BE ACTED ON OR RELIED ON BY PERSONS WHO ARE NOT RELEVANT PERSONS, INCLUDING IN CIRCUMSTANCES IN WHICH SECTION 21(1) OF THE FSMA APPLIES TO THE AUTHORITY. THIS OFFICIAL STATEMENT AND ITS CONTENTS ARE CONFIDENTIAL AND SHOULD NOT BE DISTRIBUTED, PUBLISHED OR REPRODUCED (IN

WHOLE OR IN PART) OR DISCLOSED BY RECIPIENTS TO ANY OTHER PERSONS IN THE UNITED KINGDOM. IN THE UNITED KINGDOM, ANY INVESTMENT OR INVESTMENT ACTIVITY TO WHICH THIS OFFICIAL STATEMENT RELATES IS AVAILABLE ONLY TO RELEVANT PERSONS AND WILL BE ENGAGED IN ONLY WITH RELEVANT PERSONS. ANY PERSON WHO IS NOT A RELEVANT PERSON SHOULD NOT ACT OR RELY ON THIS OFFICIAL STATEMENT OR ANY OF ITS CONTENTS.

NOTICE TO PROSPECTIVE INVESTORS IN HONG KONG

THE BONDS (EXCEPT FOR BONDS WHICH ARE A "STRUCTURED PRODUCT" AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE (CAP. 571 OF THE LAWS OF HONG KONG) ("SECURITIES AND FUTURES ORDINANCE")) MAY NOT BE OFFERED OR SOLD IN HONG KONG BY MEANS OF ANY DOCUMENT OTHER THAN (I) IN CIRCUMSTANCES WHICH DO NOT CONSTITUTE AN OFFER TO THE PUBLIC WITHIN THE MEANING OF THE COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE (CAP. 32 OF THE LAWS OF HONG KONG) ("COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE") OR (II) TO "PROFESSIONAL INVESTORS" AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE AND ANY RULES MADE THEREUNDER, OR (III) IN OTHER CIRCUMSTANCES WHICH DO NOT RESULT IN THE DOCUMENT BEING A "PROSPECTUS" AS DEFINED IN THE COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE, AND NO ADVERTISEMENT, INVITATION OR DOCUMENT RELATING TO THE BONDS MAY BE ISSUED OR MAY BE IN THE POSSESSION OF ANY PERSON FOR THE PURPOSE OF ISSUE (IN EACH CASE WHETHER IN HONG KONG OR ELSEWHERE), WHICH IS DIRECTED AT, OR THE CONTENTS OF WHICH ARE LIKELY TO BE ACCESSED OR READ BY, THE PUBLIC OF HONG KONG (EXCEPT IF PERMITTED TO DO SO UNDER THE SECURITIES LAWS OF HONG KONG) OTHER THAN WITH RESPECT TO BONDS WHICH ARE OR ARE INTENDED TO BE DISPOSED OF ONLY TO PERSONS OUTSIDE HONG KONG OR ONLY TO "PROFESSIONAL INVESTORS" AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE AND ANY RULES MADE THEREUNDER.

NOTICE TO INVESTORS IN SWITZERLAND

THE BONDS MAY NOT BE PUBLICLY OFFERED IN SWITZERLAND AND WILL NOT BE LISTED ON THE SIX SWISS EXCHANGE ("SIX") OR ON ANY OTHER STOCK EXCHANGE OR REGULATED TRADING FACILITY IN SWITZERLAND. THIS OFFICIAL STATEMENT HAS BEEN PREPARED WITHOUT REGARD TO THE DISCLOSURE STANDARDS FOR ISSUANCE PROSPECTUSES UNDER ART. 652A OR ART. 1156 OF THE SWISS CODE OF OBLIGATIONS OR THE DISCLOSURE STANDARDS FOR LISTING PROSPECTUSES UNDER ART. 27 FF. OF THE SIX LISTING RULES OR THE LISTING RULES OF ANY OTHER STOCK EXCHANGE OR REGULATED TRADING FACILITY IN SWITZERLAND. NEITHER THIS OFFICIAL STATEMENT NOR ANY OTHER OFFERING OR MARKETING MATERIAL RELATING TO THE BONDS OR THE OFFERING MAY BE PUBLICLY DISTRIBUTED OR OTHERWISE MADE PUBLICLY AVAILABLE IN SWITZERLAND.

NONE OF THIS OFFICIAL STATEMENT OR ANY OTHER OFFERING OR MARKETING MATERIAL RELATING TO THE OFFERING, THE AUTHORITY OR THE BONDS HAVE BEEN OR WILL BE FILED WITH OR APPROVED BY ANY SWISS REGULATORY AUTHORITY. IN PARTICULAR, THIS OFFICIAL STATEMENT WILL NOT BE FILED WITH, AND THE OFFER OF THE BONDS WILL NOT BE SUPERVISED BY, THE SWISS FINANCIAL MARKET SUPERVISORY AUTHORITY ("FINMA"), AND THE OFFER OF BONDS HAS NOT BEEN AND WILL NOT BE AUTHORIZED UNDER THE SWISS FEDERAL ACT ON COLLECTIVE INVESTMENT SCHEMES ("CISA"). ACCORDINGLY, INVESTORS DO NOT HAVE THE BENEFIT OF THE SPECIFIC INVESTOR PROTECTION PROVIDED UNDER THE CISA.

NOTICE TO INVESTORS IN SINGAPORE

THIS OFFICIAL STATEMENT HAS NOT BEEN AND WILL NOT BE REGISTERED AS A PROSPECTUS WITH THE MONETARY AUTHORITY OF SINGAPORE. ACCORDINGLY, THIS OFFICIAL STATEMENT AND ANY OTHER DOCUMENT OR MATERIAL USED IN CONNECTION WITH THE OFFER OR SALE, OR INVITATION FOR SUBSCRIPTION OR PURCHASE, OF THE BONDS MAY NOT BE CIRCULATED OR DISTRIBUTED, NOR MAY THE BONDS BE OFFERED OR SOLD, OR BE MADE THE SUBJECT OF AN INVITATION FOR SUBSCRIPTION OR PURCHASE, WHETHER DIRECTLY OR INDIRECTLY, TO PERSONS IN SINGAPORE OTHER THAN (I) TO AN INSTITUTIONAL INVESTOR AS DEFINED IN SECTION 4A OF THE SECURITIES AND FUTURES ACT (CHAPTER 289) OF SINGAPORE, AS MODIFIED OR AMENDED FROM TIME TO TIME (THE "SFA") PURSUANT TO SECTION 274 OF THE SFA, (II) TO A RELEVANT PERSON PURSUANT (AS DEFINED IN SECTION 275(2) OF THE SFA) TO SECTION 275(1), OR ANY PERSON PURSUANT TO SECTION 275(1A), AND IN ACCORDANCE WITH THE CONDITIONS SPECIFIED IN SECTION 275, OF THE SFA; OR (III) OTHERWISE PURSUANT TO, AND IN ACCORDANCE WITH THE CONDITIONS OF, ANY OTHER APPLICABLE PROVISION OF THE SFA. WHERE THE BONDS ARE SUBSCRIBED OR PURCHASED UNDER SECTION 275 OF THE SFA BY A RELEVANT PERSON THAT IS: (A) A CORPORATION (WHICH IS NOT AN ACCREDITED INVESTOR (AS DEFINED IN SECTION 4A OF THE SFA)) THE SOLE BUSINESS OF WHICH IS TO HOLD INVESTMENTS AND THE ENTIRE SHARE CAPITAL OF WHICH IS OWNED BY ONE OR MORE INDIVIDUALS, EACH OF WHOM IS AN ACCREDITED INVESTOR; OR (B) A TRUST (WHERE THE TRUSTEE IS NOT AN ACCREDITED INVESTOR) WHOSE SOLE PURPOSE IS TO HOLD INVESTMENTS AND EACH BENEFICIARY OF THE TRUST IS AN INDIVIDUAL WHO IS AN ACCREDITED INVESTOR, SECURITIES OR SECURITIES-BASED DERIVATIVES CONTRACTS (EACH AS DEFINED IN SECTION 2(1) OF THE SFA) OF THAT CORPORATION OR THE BENEFICIARIES' RIGHTS AND INTEREST (HOWSOEVER DESCRIBED) IN THAT TRUST SHALL NOT BE TRANSFERRED WITHIN 6 MONTHS AFTER THAT CORPORATION OR THAT TRUST HAS ACQUIRED THE BONDS PURSUANT TO AN OFFER MADE UNDER SECTION 275 OF THE SFA EXCEPT: (I) TO AN INSTITUTIONAL INVESTOR OR TO A RELEVANT PERSON, OR TO ANY PERSON ARISING FROM AN OFFER REFERRED TO IN SECTION 275(1A) OR SECTION 276(4)(I)(B) OF THE SFA; (II) WHERE NO CONSIDERATION IS OR WILL BE GIVEN FOR THE TRANSFER; (III) WHERE THE TRANSFER IS BY OPERATION OF LAW; (IV) AS SPECIFIED IN SECTION 276(7) OF THE SFA; OR (V) AS SPECIFIED IN REGULATION 37A OF THE SECURITIES AND FUTURES (OFFERS OF INVESTMENTS) (SECURITIES AND SECURITIES-BASED DERIVATIVE CONTRACTS) REGULATIONS 2018 OF SINGAPORE.

Notification under Section 309B(1)(C) of the SFA

IN CONNECTION WITH SECTION 309B OF THE SFA AND THE SECURITIES AND FUTURES (CAPITAL MARKETS PRODUCTS) REGULATIONS 2018 OF SINGAPORE (THE "CMP REGULATIONS 2018"), THE AUTHORITY HAS DETERMINED, AND HEREBY NOTIFIES ALL RELEVANT PERSONS (AS DEFINED IN SECTION 309A(1) OF THE SFA), THAT THE BONDS ARE 'PRESCRIBED CAPITAL MARKETS PRODUCTS'(AS DEFINED IN THE CMP REGULATIONS 2018) AND ARE EXCLUDED INVESTMENT PRODUCTS (AS DEFINED IN MAS NOTICE SFA 04-N12: NOTICE ON THE SALE OF INVESTMENT PRODUCTS AND MAS NOTICE FAA-N16: NOTICE ON RECOMMENDATIONS ON INVESTMENT PRODUCTS).

NOTICE TO PROSPECTIVE INVESTORS IN TAIWAN

THE OFFER OF THE BONDS HAS NOT BEEN AND WILL NOT BE REGISTERED OR FILED WITH, OR APPROVED BY, THE FINANCIAL SUPERVISORY COMMISSION OF TAIWAN AND/OR OTHER REGULATORY AUTHORITY OF TAIWAN PURSUANT TO RELEVANT

SECURITIES LAWS AND REGULATIONS, AND THE BONDS MAY NOT BE OFFERED, ISSUED OR SOLD IN TAIWAN THROUGH A PUBLIC OFFERING OR IN CIRCUMSTANCES WHICH CONSTITUTE AN OFFER WITHIN THE MEANING OF THE SECURITIES AND EXCHANGE ACT OF TAIWAN THAT REQUIRES THE REGISTRATION OR FILING WITH OR APPROVAL OF THE FINANCIAL SUPERVISORY COMMISSION OF TAIWAN. THE BONDS MAY BE MADE AVAILABLE OUTSIDE TAIWAN FOR PURCHASE BY INVESTORS RESIDING IN TAIWAN (EITHER DIRECTLY OR THROUGH PROPERLY LICENSED TAIWAN INTERMEDIARIES), BUT MAY NOT BE OFFERED OR SOLD IN TAIWAN EXCEPT TO QUALIFIED INVESTORS VIA A TAIWAN LICENSED INTERMEDIARY. ANY SUBSCRIPTIONS OF BONDS SHALL ONLY BECOME EFFECTIVE UPON ACCEPTANCE BY THE AUTHORITY OR THE RELEVANT DEALER OUTSIDE TAIWAN AND SHALL BE DEEMED A CONTRACT ENTERED INTO IN THE JURISDICTION OF INCORPORATION OF THE AUTHORITY OR RELEVANT DEALER, AS THE CASE MAY BE, UNLESS OTHERWISE SPECIFIED IN THE SUBSCRIPTION DOCUMENTS RELATING TO THE BONDS SIGNED BY THE INVESTORS.

NOTICE TO INVESTORS IN JAPAN

THE BONDS HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER THE FINANCIAL INSTRUMENTS AND EXCHANGE ACT OF JAPAN (NO. 25 OF 1948, AS AMENDED, THE "FIEA"). NEITHER THE BONDS NOR ANY INTEREST THEREIN MAY BE OFFERED OR SOLD, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO, OR FOR THE BENEFIT OF, ANY "RESIDENT" OF JAPAN (AS DEFINED UNDER ITEM 5, PARAGRAPH 1, ARTICLE G OF THE FOREIGN EXCHANGE AND FOREIGN TRADE ACT (ACT NO. 228 OF 1949, AS AMENDED)), OR TO OTHERS FOR RE-OFFERING OR RESALE, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO, OR FOR THE BENEFIT OF, ANY RESIDENT OF JAPAN, EXCEPT PURSUANT TO AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF, AND OTHERWISE IN COMPLIANCE WITH, THE FIEA AND ANY OTHER APPLICABLE LAWS, REGULATIONS AND MINISTERIAL GUIDELINES OF JAPAN.

THE PRIMARY OFFERING OF THE BONDS AND THE SOLICITATION OF AN OFFER FOR ACQUISITION THEREOF HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER PARAGRAPH 1, ARTICLE 4 OF THE FIEA. AS IT IS A PRIMARY OFFERING, IN JAPAN, THE BONDS MAY ONLY BE OFFERED, SOLD, RESOLD OR OTHERWISE TRANSFERRED, DIRECTLY OR INDIRECTLY TO, OR FOR THE BENEFIT OF CERTAIN QUALIFIED INSTITUTIONAL INVESTORS AS DEFINED IN THE FIEA ("QIIS"). A QII WHO PURCHASED OR OTHERWISE OBTAINED THE BONDS CANNOT RESELL OR OTHERWISE TRANSFER THE BONDS IN JAPAN TO ANY PERSON EXCEPT ANOTHER QII.

NOTICE TO INVESTORS IN CANADA

THE BONDS MAY BE SOLD IN CANADA ONLY TO PURCHASERS PURCHASING, OR DEEMED TO BE PURCHASING, AS PRINCIPAL THAT ARE ACCREDITED INVESTORS, AS DEFINED IN NATIONAL INSTRUMENT 45-106 PROSPECTUS EXEMPTIONS OR SUBSECTION 73.3(1) OF THE SECURITIES ACT (ONTARIO), AND ARE PERMITTED CLIENTS, AS DEFINED IN NATIONAL INSTRUMENT 31-103 REGISTRATION REQUIREMENTS, EXEMPTIONS AND ONGOING REGISTRANT OBLIGATIONS. ANY RESALE OF THE BONDS MUST BE MADE IN ACCORDANCE WITH AN EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE PROSPECTUS REQUIREMENTS OF APPLICABLE SECURITIES LAWS.

SECURITIES LEGISLATION IN CERTAIN PROVINCES OR TERRITORIES OF CANADA MAY PROVIDE A PURCHASER WITH REMEDIES FOR RESCISSION OR DAMAGES IF THIS OFFICIAL STATEMENT (INCLUDING ANY AMENDMENT THERETO) CONTAINS A MISREPRESENTATION, PROVIDED THAT THE REMEDIES FOR RESCISSION OR DAMAGES

ARE EXERCISED BY THE PURCHASER WITHIN THE TIME LIMIT PRESCRIBED BY THE SECURITIES LEGISLATION OF THE PURCHASER'S PROVINCE OR TERRITORY. THE PURCHASER SHOULD REFER TO ANY APPLICABLE PROVISIONS OF THE SECURITIES LEGISLATION OF THE PURCHASER'S PROVINCE OR TERRITORY FOR PARTICULARS OF THESE RIGHTS OR CONSULT WITH A LEGAL ADVISOR.

PURSUANT TO SECTION 3A.4 OF NATIONAL INSTRUMENT 33-105 UNDERWRITING CONFLICTS ("NI 33-105"), THE UNDERWRITERS ARE NOT REQUIRED TO COMPLY WITH THE DISCLOSURE REQUIREMENTS OF NI 33-105 REGARDING UNDERWRITERS CONFLICTS OF INTEREST IN CONNECTION WITH THIS OFFERING.

NOTICE TO INVESTORS IN KOREA

THE BONDS HAVE NOT BEEN AND WILL NOT BE REGISTERED WITH THE FINANCIAL SERVICES COMMISSION OF KOREA FOR PUBLIC OFFERING IN KOREA UNDER THE FINANCIAL INVESTMENT SERVICES AND CAPITAL MARKETS ACT AND ITS SUBORDINATE DECREES AND REGULATIONS (COLLECTIVELY THE “FSCMA”). THE BONDS MAY NOT BE OFFERED, SOLD OR DELIVERED, DIRECTLY OR INDIRECTLY, OR OFFERED OR SOLD TO ANY PERSON FOR REOFFERING OR RESALE, DIRECTLY OR INDIRECTLY, IN KOREA OR TO ANY RESIDENT OF KOREA EXCEPT AS OTHERWISE PERMITTED UNDER THE APPLICABLE LAWS AND REGULATIONS OF KOREA, INCLUDING THE FSCMA AND THE FOREIGN EXCHANGE TRANSACTION LAW AND ITS SUBORDINATE DECREES AND REGULATIONS (COLLECTIVELY, THE “FETL”). WITHOUT PREJUDICE TO THE FOREGOING, THE NUMBER OF BONDS OFFERED IN KOREA OR TO A RESIDENT IN KOREA SHALL BE LESS THAN FIFTY AND FOR A PERIOD OF ONE YEAR FROM THE ISSUE DATE OF THE BONDS, NONE OF THE BONDS MAY BE DIVIDED RESULTING IN AN INCREASED NUMBER OF THE BONDS. FURTHERMORE, THE BONDS MAY NOT BE RESOLD TO KOREAN RESIDENTS UNLESS THE PURCHASER OF THE BONDS COMPLIES WITH ALL APPLICABLE REGULATORY REQUIREMENTS (INCLUDING BUT NOT LIMITED TO GOVERNMENT REPORTING REQUIREMENTS UNDER THE FETL) IN CONNECTION WITH THE PURCHASE OF THE BONDS.

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OFFICIAL STATEMENT

of the

NEW JERSEY TURNPIKE AUTHORITY

relating to

$995,235,000
Turnpike Revenue Bonds,
Series 2021 B
(Federally Taxable)

INTRODUCTION

This Official Statement has been prepared to provide information relating to the issuance by the New Jersey Turnpike Authority (the "Authority") of its $995,235,000 Turnpike Revenue Bonds, Series 2021 B (Federally Taxable) (the "Series 2021 B Bonds"). The Bank of New York Mellon, Woodland Park, New Jersey, will serve as Trustee, Paying Agent and Registrar (the "Trustee", "Registrar" and "Paying Agent") for the Series 2021 B Bonds.

Simultaneously with the issuance of the Series 2021 B Bonds, the Authority will be issuing its Turnpike Revenue Bonds, Series 2021 A (the "Series 2021 A Bonds") in the aggregate principal amount of $502,500,000 for the primary purpose of paying the costs of construction of various projects which are part of the Authority's ongoing capital improvement programs. **The Series 2021 A Bonds are not being offered pursuant to this Official Statement.**

The Authority is a body corporate and politic of the State of New Jersey (the "State") organized and existing by virtue of the New Jersey Turnpike Act of 1948, constituting Chapter 454 of the Laws of New Jersey of 1948, as amended and supplemented (the "Act"). Pursuant to the Act, the Authority has owned and operated the New Jersey Turnpike (the "Turnpike") since the time the Turnpike opened for traffic in 1951. In July 2003, the New Jersey Highway Authority (the "Highway Authority") was abolished and the Authority assumed all of the powers, rights, obligations, assets, debts, liabilities and statutory responsibilities and duties of the Highway Authority, including the ownership and operation of the Garden State Parkway (the "Parkway" and, together with the Turnpike, the "Turnpike System"). As a result, the assets and liabilities of the Authority and the Highway Authority and the ongoing operations, expenses and revenues of the Turnpike and the Parkway are now combined under the ownership and operation of the Authority. See "THE AUTHORITY" herein.

The Series 2021 B Bonds will be issued under and pursuant to the Act and the Turnpike Revenue Bond Resolution adopted by the Authority on August 20, 1991, as amended, restated and supplemented (the "General Bond Resolution"), including as supplemented by the Series 2020 Turnpike Revenue Bond Resolution adopted by the Authority on January 28, 2020 (the "Series 2020 Resolution"), and a Certificate of Determination to be executed by the Executive Director of the Authority prior to the issuance of the Series 2021 B Bonds (collectively, the "Certificate of Determination" and, together with the General Bond Resolution and the Series 2020 Resolution, the "Resolution"). The Series 2021 B Bonds and any other Outstanding Bonds (as hereinafter defined) under the Resolution are referred to herein as the "Bonds". All capitalized terms used herein and not otherwise defined in this Official Statement will have the meanings ascribed to them in the Resolution.

The Series 2021 B Bonds will be payable from and secured by a lien on and pledge of the Pledged Revenues of the Turnpike System on a parity with all Bonds Outstanding under the Resolution from time to time, and the Authority's reimbursement and payment obligations under certain Credit Facilities and Qualified Swaps. See "SECURITY FOR THE BONDS" herein.

The proceeds of the Series 2021 B Bonds will be used by the Authority, together with other available moneys, to (i) advance refund, redeem and legally defease all or a portion of the Authority's Outstanding Turnpike Revenue Bonds, Series 2012 B, Turnpike Revenue Bonds, Series 2013 A, Turnpike Revenue Bonds, Series 2013 F, Turnpike Revenue Bonds, Series 2014 A and Turnpike Revenue Bonds, Series 2014 C, all as more fully described in APPENDIX G to this Official Statement (collectively, the "Refunded Bonds"), and (ii) pay the costs of issuance of the Series 2021 B Bonds. See "THE SERIES 2021 B BONDS", "THE REFUNDING PLAN" and "ESTIMATED SOURCES AND USES OF FUNDS" herein.

In October 2008, the Authority adopted a ten year, $7 billion capital improvement program (the "2008 CIP"), which includes numerous projects focused on major capacity and other roadway improvements to both the Turnpike and the Parkway, bridge construction and improvements, interchange improvements and other facilities improvements. In September 2018, the Authority amended the 2008 CIP to extend its end date to December 31, 2020. Savings resulting from lower than anticipated construction costs allowed the Authority to increase the number of projects included in the 2008 CIP to 39 from an originally authorized amount of 34 projects. As of the date of this Official Statement, the 2008 CIP is approximately 96% completed and approximately 99% of the amounts budgeted for the projects that are part of the 2008 CIP have been spent or committed. See "THE AUTHORITY – Capital Improvement Programs" herein.

In April 2019, the Authority adopted a capital improvement program (the "2019 CIP") which consists of the design, supervision and construction of multiple capital improvement projects on both the Turnpike and the Parkway. The projects in the 2019 CIP originally included several bridge deck improvements on the Turnpike and the Parkway, shoulder expansion and reconstruction on a portion of the Parkway, and the replacement of the hybrid changeable message signs on the Turnpike. Recently, the size of the 2019 CIP was increased from $500 million to $673 million, due in part to increased spending on projects originally approved in 2019, as well as the addition of the remaining costs of the repair and rehabilitation of major bridges crossing the Passaic River on both the Turnpike and the Parkway, and various improvements to service areas located on both the Turnpike and the Parkway. Those projects were previously funded by the Authority from its revenues. See "THE AUTHORITY – Capital Improvement Programs" herein.

In May 2020, the Board of Commissioners of the Authority adopted a long-range capital plan (the "2020 Long-Range Capital Plan") which contains projects geared toward enhancing safety, repairing degraded infrastructure and ensuring roadway resiliency and sustainability to enhance mobility. The costs of the projects listed in the 2020 Long-Range Capital Plan are estimated at $24 billion and the projects are estimated to be completed over the next 15 to 20 years. Based upon the 2020 Long-Range Capital Plan, the Authority has developed a capital improvement program (the "2021-2025 CIP") which includes projects focused primarily on capacity enhancements on both the Turnpike and the Parkway, bridge preservation and security, and drainage, roadway lighting and other improvements, including non-roadway technology improvements. The 2021-2025 CIP is intended to be the first of a series of 5-year rolling capital improvement programs which the Authority anticipates adopting in order to complete the 2020 Long-Range Capital Plan. See "THE AUTHORITY – Capital Improvement Programs" herein.

The Authority increased toll rates by 36% on the Turnpike and 27% on the Parkway effective as of September 13, 2020, which were the first toll increases on the Turnpike or the Parkway since 2012. The Authority's resolution approving those toll increases also contains an annual indexing provision providing that, commencing on January 1, 2022 and continuing annually thereafter, the tolls on the Turnpike and the Parkway shall be further increased in an amount to be determined annually, provided that any such increase shall not exceed three percent (3%) per year. The increased toll rates that became effective on the Turnpike and the Parkway on September 13, 2020, together with the annual indexing provision, are designed to provide the Authority with sufficient Net Revenues to permit the Authority to issue additional Bonds under the Resolution to fund the 2020 Long-Range Capital Plan. The projected toll revenues in the Report of the Traffic Engineer included in Appendix B to this Official Statement, the

Authority's Long-Range Financial Plan (through 2025) set forth in the Authority's 2021 Annual Budget and the table of Projected Revenues, Expenditures and Debt Service on page 75 of this Official Statement assume that, commencing on January 1, 2022, the tolls on the Turnpike and the Parkway will be increased annually by 3% pursuant to the annual indexing provision of the above-mentioned resolution. See "SECURITY FOR THE BONDS – Toll Covenant", "THE AUTHORITY – Certain Powers", "THE AUTHORITY – Capital Improvement Programs" and "THE AUTHORITY – Existing Toll Rates and Schedule" herein and APPENDIX B – "2020 DRAW DOWN LETTER AND SUPPLEMENT, AND REPORT OF TRAFFIC ENGINEER" attached hereto.

As a result of the COVID-19 pandemic and several governmental orders issued in response thereto, beginning in March 2020 and continuing since then, the Authority has experienced a decrease in toll transactions and a loss of revenues from tolls collected on the Turnpike and the Parkway. Since the low point in April 2020, the number of toll transactions on both roadways has recovered substantially and toll revenue from the Turnpike and the Parkway has increased. After taking into account the impact of COVID-19 and the toll increases on the Turnpike and Parkway that became effective on September 13, 2020, the amount of toll revenue received by the Authority during the three month period of September through November of 2020 is higher than the amount of toll revenue received during the same three month period of 2019. The financial impacts of the COVID-19 pandemic on the Authority were partially offset by lower than expected operating expenses in 2020 and by the Authority's completion of a refunding and restructuring of its debt service coming due in the last six months of 2020. CDM Smith, Inc. ("CDM Smith"), the Traffic Engineer for the Authority, has projected that COVID-19 will have a negative impact on the Authority's toll revenues through 2025. See "SECURITY FOR THE BONDS – Toll Covenant", "THE AUTHORITY – Certain Powers", "THE AUTHORITY – Existing Toll Rates and Schedule", "THE AUTHORITY – Management's Discussion of Unaudited Interim Results for the Eleven Months Ended November 30, 2020" and "RISK FACTORS – COVID-19" herein and APPENDIX B – "2020 DRAW DOWN LETTER AND SUPPLEMENT, AND REPORT OF TRAFFIC ENGINEER" attached hereto.

The Series 2021 B Bonds will be issued in fully registered form without coupons, and, when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC"). DTC will act as securities depository for the Series 2021 B Bonds, as more fully described herein. Individual purchases of the Series 2021 B Bonds will be made in book-entry form only, in denominations of $5,000 or any integral multiples thereof. Purchasers of the Series 2021 B Bonds will not receive certificates representing their interest therein. See "BOOK-ENTRY ONLY SYSTEM" herein.

For a complete description of the Series 2021 B Bonds, including the redemption provisions thereof, see "THE SERIES 2021 B BONDS" herein.

THE SERIES 2021 B BONDS

General

The Series 2021 B Bonds shall be dated their Date of Delivery and shall bear interest from such date, payable on January 1 and July 1 of each year, commencing on July 1, 2021 (each, an "Interest Payment Date"), until their maturity date or prior redemption. Interest shall be calculated on the basis of a 360-day year consisting of twelve (12) 30-day months. The Series 2021 B Bonds will bear interest at the interest rates per annum set forth on the inside cover page of this Official Statement.

The Series 2021 B Bonds will mature on the dates, in the years and in the amounts shown on the inside front cover page of this Official Statement. The Series 2021 B Bonds are subject to optional and mandatory sinking fund redemption prior to maturity. See "THE SERIES 2021 B BONDS – Redemption Prior to Maturity" herein.

The Series 2021 B Bonds are being initially issued and delivered in fully registered form only, in the denomination of $5,000 or any integral multiples thereof (the "Authorized Denominations"), and will be registered in the name of Cede & Co., as nominee of DTC. DTC will act as securities depository for the Series 2021 B Bonds. So long as the Series 2021 B Bonds are held in DTC's book-entry only system, DTC (or a successor securities depository) or its nominee will be the registered owner of the Series 2021 B Bonds for all purposes of the Resolution, the Series 2021 B Bonds and this Official Statement, and payments of principal and interest with respect to the Series 2021 B Bonds will be made solely through the facilities of DTC. See "BOOK-ENTRY ONLY SYSTEM" herein.

Principal of the Series 2021 B Bonds is payable upon surrender of the Series 2021 B Bonds at the corporate trust office of the Paying Agent. Interest on the Series 2021 B Bonds will be paid by check or draft mailed by the Paying Agent to the registered holders at their addresses as they appear in the registry books of the Trustee as of the regular record date, which shall be the fifteenth (15^{th}) day (whether or not a Business Day) of the calendar month next preceding an Interest Payment Date. Any interest not paid on an Interest Payment Date shall be paid to the persons in whose names Series 2021 B Bonds are registered as of a special record date established by notice mailed by or on behalf of the Authority not less than ten (10) days prior to such date to the persons in whose names Series 2021 B Bonds are registered at the close of business on the fifth day prior to such mailing.

The Series 2021 B Bonds are transferable in accordance with the provisions of the Resolution. The Trustee may charge an amount sufficient to reimburse it for any tax, fee or other governmental charge required to be paid in connection with any such transfer, registration, conversion or exchange.

The Resolution and all provisions thereof are incorporated by reference in the text of the Series 2021 B Bonds, and the Series 2021 B Bonds provide that each registered owner, beneficial owner, DTC Participant or Indirect Participant (as such terms are hereinafter defined) in DTC, by acceptance of a Series 2021 B Bond (including receipt of a book-entry credit evidencing an interest therein) assents to all of such provisions as an explicit and material portion of the consideration running to the Authority to induce it to issue such Series 2021 B Bond.

Redemption Prior to Maturity

Optional Redemption

The Series 2021 B Bonds maturing on or after January 1, 2032 are subject to optional redemption by the Authority, in whole or in part, on any date on or after January 1, 2031, at a Redemption Price equal to the principal amount of the Series 2021 B Bonds being redeemed, without premium, plus accrued interest to the redemption date.

Mandatory Sinking Fund Redemption

The Series 2021 B Bonds maturing on January 1, 2040 are subject to mandatory redemption prior to maturity from Sinking Fund Installments in part on January 1 of the years and in the amounts set forth below, at a redemption price equal to 100% of the principal amount thereof, plus accrued interest to the redemption date:

Year	Principal Amount
2037	$ 2,675,000
2038	2,750,000
2039	67,715,000
2040†	69,455,000

† Stated maturity.

Purchase of Series 2021 B Bonds to Satisfy Sinking Fund Installments

Pursuant to the provisions of the General Bond Resolution, amounts on deposit in the Debt Service Fund can be utilized by the Authority to purchase Bonds of any Series (including the Series 2021 B Bonds) which are subject to redemption by operation of Sinking Fund Installments and any Bonds so purchased may be credited against the Sinking Fund Installments coming due for such Series of Bonds.

Selection of Series 2021 B Bonds for Redemption

If less than all of the Series 2021 B Bonds are to be redeemed and paid prior to maturity, the specific maturity or maturities of the Series 2021 B Bonds to be redeemed shall be selected by the Authority, and then within each such maturity, (a) if the Series 2021 B Bonds are in book-entry form at the time of such redemption, the Paying Agent shall instruct DTC to instruct the DTC Participants to select the specific Series 2021 B Bonds within such maturity for redemption by lot among such Series 2021 B Bonds, and neither the Authority nor the Paying Agent shall have any responsibility to insure that DTC or its Participants properly select such Series 2021 B Bonds for redemption, and (b) if the Series 2021 B Bonds are not then in book-entry form at the time of such redemption, on each redemption date the Paying Agent shall select the specific Series 2021 B Bonds within such maturity for redemption by lot among such Series 2021 B Bonds.

In the case of a partial redemption of the Series 2021 B Bonds when Series 2021 B Bonds of denominations greater than the minimum applicable Authorized Denomination are then Outstanding, for all purposes in connection with such redemption, each principal amount equal to the minimum Authorized Denomination shall be treated as though it were a separate Series 2021 B Bond for purposes of selecting the specific Series 2021 B Bonds to be redeemed, provided that no Series 2021 B Bond shall be redeemed in part if the principal amount to be Outstanding following such partial redemption is not an applicable Authorized Denomination.

Notice of Redemption

In the event of any redemption of Series 2021 B Bonds, either in whole or in part, notice of such redemption shall be sent by first class mail mailed, postage prepaid, at least thirty (30) days, but not more than sixty (60) days prior to the redemption date to the registered owners of any Series 2021 B Bonds or portions of Series 2021 B Bonds to be redeemed at their registered addresses and to S&P Global Ratings, acting through Standard & Poor's Financial Services LLC, and Moody's Investors Service or their respective successors, if any, in the manner and under the terms and conditions provided in the Resolution. As long as DTC remains the sole registered owner of the Series 2021 B Bonds, notice of redemption shall be sent to DTC as provided in the Resolution. Such mailing shall not be a condition precedent to such redemption and failure to mail any such notice shall not affect the validity of the proceedings for the redemption of the Series 2021 B Bonds. Notice of redemption having been given as aforesaid, the Series 2021 B Bonds or portions thereof so called for redemption shall become due and payable at the applicable redemption price herein provided, and from and after the date so fixed for redemption, interest on the Series 2021 B Bonds or portions thereof so called for redemption shall cease to accrue and become payable. Any failure of DTC to advise any DTC Participant, or of any DTC Participant or Indirect Participant to notify the beneficial owner of any such notice and its content or effect will not affect the validity of the redemption of the Series 2021 B Bonds called for redemption or of any other action premised on such notice. See "BOOK-ENTRY ONLY SYSTEM" herein.

BOOK-ENTRY ONLY SYSTEM

The information in this section has been obtained from DTC. DTC will act as securities depository for the Series 2021 B Bonds. The Series 2021 B 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 certificate will be issued for each maturity and, if applicable, interest rate within a maturity of the Series 2021 B Bonds in the aggregate principal amount of each such Series, maturity and, if applicable, interest rate within the Series 2021 B Bonds, and will be deposited with DTC.

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. DTC 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 Standard & Poor's rating of AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission.

Purchases of Series 2021 B Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2021 B Bonds on DTC's records. The ownership interest of each actual purchaser of each Series 2021 B 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 Participant or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2021 B Bonds are to be accomplished by entries made on the books of Direct Participants and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Series 2021 B Bonds, except in the event that use of the book-entry system for the Series 2021 B Bonds is discontinued.

To facilitate subsequent transfers, all Series 2021 B 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 Series 2021 B Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not affect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2021 B Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2021 B Bonds are credited, which may or may not be the Beneficial Owners. The Direct Participants and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

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 the Series 2021 B Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Series 2021 B Bonds, such as redemptions, tenders, defaults and proposed amendments to the

Series 2021 B Bonds documents. For example, Beneficial Owners of the Series 2021 B Bonds may wish to ascertain that the nominee holding the Series 2021 B Bonds for their benefit has agreed to obtain and transmit notices to the Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the Trustee and request that copies of notices be provided directly to them.

Redemption notices shall be sent to DTC. If less than all of the Series 2021 B 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.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to Series 2021 B Bonds unless authorized by a Direct Participant in accordance with DTC's Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Authority 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 Series 2021 B Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Redemption proceeds and principal and interest payments on the Series 2021 B 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 the Trustee, on the 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, the Trustee, or the Authority, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds and principal and interest 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 the 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.

DTC may discontinue providing its services as securities depository with respect to the Series 2021 B Bonds at any time by giving reasonable notice to the Authority or the Trustee. Under such circumstances, in the event that a successor securities depository is not obtained, Series 2021 B Bond certificates are required to be printed and delivered.

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, Series 2021 B Bond certificates will be printed and delivered to DTC.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the Authority believes to be reliable, but the Authority takes no responsibility for the accuracy thereof.

NONE OF THE AUTHORITY, THE TRUSTEE OR THE PAYING AGENT WILL HAVE ANY RESPONSIBILITY OR OBLIGATION, EITHER SINGULARLY OR JOINTLY, TO DTC PARTICIPANTS, TO INDIRECT PARTICIPANTS, OR TO ANY BENEFICIAL OWNER WITH RESPECT TO (I) THE ACCURACY OF ANY RECORDS MAINTAINED BY DTC, ANY DTC PARTICIPANT, OR ANY INDIRECT PARTICIPANT; (II) ANY NOTICE THAT IS PERMITTED OR REQUIRED TO BE GIVEN TO THE HOLDERS OF THE SERIES 2021 B BONDS UNDER THE RESOLUTION; (III) THE PAYMENT BY DTC OR ANY DTC PARTICIPANT OR INDIRECT PARTICIPANT OF ANY AMOUNT WITH RESPECT TO THE PRINCIPAL OR INTEREST DUE WITH RESPECT TO THE SERIES 2021 B BONDS; (IV) ANY CONSENT GIVEN OR OTHER ACTION TAKEN BY DTC AS THE HOLDER OF THE SERIES 2021 B BONDS; OR (V) ANY OTHER MATTER.

THE AUTHORITY AND THE UNDERWRITERS CANNOT AND DO NOT GIVE ANY ASSURANCES THAT DTC OR DIRECT PARTICIPANTS OR INDIRECT PARTICIPANTS OF DTC WILL DISTRIBUTE TO THE BENEFICIAL OWNERS OF THE SERIES 2021 B BONDS: (1) PAYMENTS OF PRINCIPAL OF OR INTEREST ON THE SERIES 2021 B BONDS; (2) CONFIRMATIONS OF THEIR OWNERSHIP INTERESTS IN THE SERIES 2021 B BONDS; OR (3) NOTICES SENT TO DTC OR CEDE & CO., ITS NOMINEE, AS THE REGISTERED OWNER OF THE SERIES 2021 B BONDS, OR THAT THEY WILL DO SO ON A TIMELY BASIS. THE AUTHORITY AND THE UNDERWRITERS CANNOT AND DO NOT GIVE ANY ASSURANCES THAT DTC, DIRECT PARTICIPANTS OR INDIRECT PARTICIPANTS WILL SERVE AND ACT IN THE MANNER DESCRIBED IN THIS OFFICIAL STATEMENT.

THE INFORMATION CONTAINED IN THIS OFFICIAL STATEMENT CONCERNING DTC AND ITS BOOK-ENTRY SYSTEM HAS BEEN OBTAINED FROM DTC, AND NEITHER THE AUTHORITY NOR THE UNDERWRITERS MAKE ANY REPRESENTATIONS AS TO THE COMPLETENESS OR THE ACCURACY OF SUCH INFORMATION OR AS TO THE ABSENCE OF MATERIAL ADVERSE CHANGES IN SUCH INFORMATION SUBSEQUENT TO THE DATE HEREOF.

SECURITY FOR THE BONDS

General

The Series 2021 B Bonds will be entitled to the benefit and security of the Resolution.

The Series 2021 B Bonds will be on parity as to payment and security with all other currently Outstanding Bonds and any other Bonds hereafter issued under the Resolution, and with the Authority's reimbursement and payment obligations under certain Credit Facilities and Qualified Swaps, and will be secured by a lien on and pledge of Pledged Revenues under the Resolution.

Pledge of Revenues and Funds

The Resolution pledges to the payment of all Bonds (including the Series 2021 B Bonds) and any provider under a Credit Facility and a Qualified Swap Agreement, (i) the proceeds of the sale of the Bonds (including the Series 2021 B Bonds), (ii) all Pledged Revenues, and (iii) all amounts on deposit in Funds established by the Resolution (other than amounts derived from any Federal or State grants and certain other grants and except as otherwise provided in the Resolution). The pledge and lien created may be modified by a Series Resolution or Supplemental Resolution to provide for a pledge of amounts on deposit in certain funds and accounts, which amounts are provided from proceeds of Bonds issued pursuant to such Series Resolution or Supplemental Resolution, superior to the pledge of such funds and accounts and such proceeds for other Bonds. For purposes of the Resolution, Pledged Revenues include (i) all tolls, revenues, fees, rents, charges and other income and receipts derived from the operation of the Turnpike System; (ii) the proceeds of business interruption insurance relating to the Turnpike System and other insurance which insures against loss of Turnpike Revenues; (iii) amounts deposited in the Revenue Fund derived from amounts in the Construction Fund, Special Project Reserve Fund or General Reserve Fund; (iv) other revenues of the Authority, including, but not limited to, payments under Qualified Swap Agreements to the extent specifically pledged pursuant to one or more Series Resolutions, and the cash subsidy payments to be received by the Authority from the United States Treasury in connection with the interest payable on the Build America Bonds (collectively, the "Subsidy Payments"); and (v) investment income on amounts in the funds and accounts held under the Resolution and deposited in the Revenue Fund.

Toll Covenant

The Authority has covenanted in the General Bond Resolution to fix, charge and collect tolls for the use of the Turnpike System in amounts so that, in each calendar year, the Net Revenues shall at least equal the Net Revenue Requirement for such year.

For purposes of the Resolution, Net Revenues (calculated for any period of time) are defined as Pledged Revenues for such period less Operating Expenses for such period, and the Net Revenue Requirement (calculated for any period of time) is defined as an amount equal to the greater of (i) the sum of the Aggregate Debt Service, Maintenance Reserve Payments, Special Project Reserve Payments and payments, if any, to the Charges Fund for such period or (ii) 1.20 times the sum of the Aggregate Debt Service for such period (excluding, for purposes of clause (ii) only, any payments due and payable by the Authority under any Qualified Swap Agreement upon an early termination thereof). Aggregate Debt Service is, for any calendar year, the sum of interest (net of any capitalized interest) and Principal Installments (which include Sinking Fund Installments) for the Bonds and all payments due by the Authority under Qualified Swap Agreements for such period.

On or before December 1 of each year, the Authority is required to review its financial condition in order to estimate and determine whether the Net Revenue Requirement for such year and for the following year can be satisfied. The Authority is required to file with the Trustee on or before December 20 of each year a certified copy of its resolution making such determination, together with a statement of the actual and estimated Pledged Revenues, Operating Expenses, Aggregate Debt Service, Maintenance Reserve Payments and Special Project Reserve Payments and the other estimates and assumptions upon which such determination was based, which must take into consideration the cost of completion of any uncompleted Projects and the issuance of future Series of Bonds, if necessary, to finance the completion of such Projects. If the Authority determines that Pledged Revenues may be insufficient, the Authority is required to (i) cause its Traffic Engineer to make a study for the purpose of recommending a schedule of tolls which, in the opinion of the Traffic Engineer, will cause sufficient Pledged Revenues to be collected in the following year to comply with the toll covenant and will provide additional Pledged Revenues to be collected in such following year and later years to eliminate any deficiency at the earliest practicable time, and (ii) as promptly as practicable but no later than the next April 1, adopt and place in effect the schedule of tolls recommended by the Traffic Engineer.

Failure to comply with the toll covenant described above will not constitute an Event of Default under the Resolution if the Traffic Engineer is of the opinion that a toll schedule that will comply with such toll covenant is impracticable at that time, and the Authority establishes a schedule of tolls which is recommended by the Traffic Engineer to comply as nearly as practicable with the toll covenant.

Pursuant to the Act, whenever the Authority desires to increase the tolls on the Turnpike and/or the Parkway, it is required to hold a public hearing on such toll increase at least 45 days prior to the date on which such toll increase is proposed to become effective. In addition, the resolution or other action of the Authority authorizing such toll increase cannot be adopted or otherwise made effective without the prior written approval of the Governor and the Treasurer of the State and the Governor has the right to veto such resolution or other action of the Authority within a 10-day period (exclusive of Saturdays, Sundays and public holidays) after the minutes of the Authority meeting at which such resolution was adopted or other action taken are delivered to the Governor. The Act further provides that the powers conferred upon the Governor and the Treasurer of the State described above shall be exercised with due regard for the rights of the holders of bonds of the Authority at any time outstanding, and nothing in, or done pursuant to, the Act shall in any way limit, restrict or alter the obligation or powers of the Authority or any representative or officer of the Authority to carry out and perform in every detail each and every covenant, agreement or contract at any time made or entered into by or on behalf of the Authority with respect to its bonds or for the benefit, protection or security of the holders thereof. See "THE AUTHORITY – Certain Powers" herein.

The Authority has increased tolls on the Turnpike eight times since its opening in 1951. The effective dates of those increases were March 23, 1975, April 1, 1980, March 17, 1991, September 30, 2000, January 1, 2003, December 1, 2008, January 1, 2012 and September 13, 2020. Tolls on the Parkway have increased four times since its opening in 1950. The effective dates of those increases were April 15, 1989, December 1, 2008, January 1, 2012 and September 13, 2020. The Authority's resolution approving the most recent toll increases on the Turnpike and the Parkway that became effective on September 13, 2020 also contains an annual indexing provision providing that, commencing on January 1, 2022 and continuing annually thereafter, the tolls on the Turnpike and the Parkway shall be further increased in an amount to be determined annually, provided that any such increase shall not exceed three percent (3%) per year. See "THE AUTHORITY – Certain Powers" and "THE AUTHORITY – Existing Toll Rates and Schedule" herein.

As permitted by the Resolution, from time to time in the past (most recently in fiscal year 2008), the Authority has withdrawn amounts from the General Reserve Fund and deposited such amounts in the Revenue Fund in order to comply with the toll covenant described above.

Flow of Funds

The General Bond Resolution creates and establishes various Funds and provides that the Pledged Revenues shall be deposited into such Funds in the amounts and in the order of priority set forth in the General Bond Resolution. The following chart illustrates and generally describes the provisions of the General Bond Resolution governing the deposit and application of the Pledged Revenues to the various Funds created and established under the General Bond Resolution:

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Pledged Revenues

Revenue Fund

The Authority covenants in the General Bond Resolution (a) to deposit promptly all Pledged Revenues to the credit of the Revenue Fund, which is held by the Authority, (b) to pay reasonable and necessary Operating Expenses out of the Revenue Fund and retain in the Revenue Fund reasonable and necessary amounts for working capital and reserves for Operating Expenses, including expenses which do not recur annually, provided that the total amount of such working capital and reserves held at any time shall not exceed ten percent (10%) of the amount appropriated by the Authority's Annual Budget for Operating Expenses for the then current year, and (c) to apply on or before the twentieth (20^{th}) day of each month the balance of moneys in the Revenue Fund in the following amounts and order of priority:

Debt Service Fund

(1) to the Debt Service Fund, which is held by the Trustee, the amount necessary so that the balance in such Fund shall equal the Accrued Debt Service as of the date of such deposit;

Debt Reserve Fund

(2) to the Debt Reserve Fund, which is held by the Trustee, the amount, if any, necessary so that the balance in such Fund shall equal the Debt Reserve Requirement, provided that any deficiency in the Debt Reserve Fund shall be fully replenished within one year from the date the balance in the Debt Reserve Fund first falls below the Debt Reserve Requirement;

Charges Fund

(3) to the Charges Fund, which is held by the Authority, the amount necessary so that the balance in such Fund shall equal the sum of all amounts accrued or due and payable by the Authority as fees and charges under any Standby Agreement or Remarketing Agreement or to any Tender Agent during such month, but only to the extent that the Authority has determined that such amounts shall not be paid as Operating Expenses;

Maintenance Reserve Fund

(4) to the Maintenance Reserve Fund, which is held by the Authority, an amount equal to one-twelfth of the amount provided in the Annual Budget for Maintenance Reserve Payments during the then current calendar year, provided that if any such monthly allocation to such Fund shall be less than the required amount, the deficiency shall be included in the next succeeding monthly deposit to such Fund;

Special Project Reserve Fund

(5) to the Special Project Reserve Fund, which is held by the Authority, an amount equal to one-twelfth of the amount provided in the Annual Budget for Special Project Reserve Payments during the then current calendar year; and

General Reserve Fund

(6) to the General Reserve Fund, which is held by the Authority, the balance remaining in the Revenue Fund after making all of the above deposits, to be used for any corporate purpose of the Authority. See "SECURITY FOR THE BONDS – Agreements with the State," "Feeder Road Payments" and "Potential Future Authority Payments for Non-Turnpike System Purposes" herein.

Debt Reserve Fund

The Resolution establishes a Debt Reserve Fund for all Bonds issued thereunder, including the Series 2021 B Bonds, and for the benefit of the provider of any Credit Facility or any Qualified Swap Agreement. There is required to be on deposit in the Debt Reserve Fund an amount equal to the Debt Reserve Requirement for all Bonds then Outstanding under the Resolution (including the Series 2021 B Bonds), provided that any deficiency in the Debt Reserve Fund shall be fully replenished within one year from the date the balance in the Debt Reserve Fund first falls below the Debt Reserve Requirement.

For purposes of the Resolution, the Debt Reserve Requirement is equal to the maximum amount of interest accruing on Bonds Outstanding in the then current or any future calendar year (including, for these purposes, the incremental accreted value for any such year for capital appreciation Bonds and interest calculated at the fixed rate established in the Resolution for any Bonds bearing interest at a variable rate). The Debt Reserve Requirement is calculated without consideration of any Subsidy Payments the Authority may receive from the United States Treasury in connection with the Build America Bonds. In calculating the Debt Reserve Requirement, interest on variable rate Bonds swapped to a fixed rate is assumed to be paid at the applicable fixed swap rate and the spreads over the variable rate index used to determine the interest rate on such variable rate Bonds are not included in the calculation of the interest accruing on such Bonds. In addition, in calculating the Debt Reserve Requirement, interest on the $5,000,000 unhedged portion of the Authority's Outstanding Turnpike Revenue Bonds, Series 2015 A, is calculated at the Maximum Rate under the Resolution, which is 12%.

As of the date of this Official Statement, the amount on deposit in the Debt Reserve Fund is approximately $599,037,000. Prior to the issuance of the Series 2021 A Bonds and the Series 2021 B Bonds, the Debt Reserve Requirement is $579,843,002. After the issuance of the Series 2021 A Bonds and the Series 2021 B Bonds, the Debt Reserve Requirement will be $572,343,648. Since the amounts currently on deposit in the Debt Reserve Fund equal or exceed the Debt Reserve Requirement, no deposit to the Debt Reserve Fund will be made in connection with the issuance of the Series 2021 A Bonds and the Series 2021 B Bonds. The entire amount of the Debt Reserve Requirement has been funded with proceeds of various Authority Bond issuances and other available funds of the Authority.

Agreements with the State

The Authority and the State have two separate agreements in effect, one dated as of March 27, 2000 (the "2000 State Agreement"), and the other dated as of June 28, 2016, as amended as of October 4, 2018 (the "Current State Transportation Projects Funding Agreement" and, collectively with the 2000 State Agreement, the "State Agreements") pursuant to which the Authority has agreed to make annual payments to the State. The obligation of the Authority to make any such payments is limited to the amounts on deposit in the General Reserve Fund which are legally available to be used by the Authority for such purposes and is subject and subordinate in all respects to the pledge created under the Resolution. Pursuant to the 2000 State Agreement, the Authority has agreed to make annual payments to the State in the amount of $22,000,000 until all of the obligations of the New Jersey Transportation Trust Fund Authority as set forth in the New Jersey Transportation Trust Fund Authority Act, constituting Chapter 108 of the Laws of New Jersey of 1995, are paid or such payment has been provided for. Payments made by the Authority pursuant to the 2000 State Agreement are to be used by the State to provide for the development of State transportation projects.

When originally entered into on June 28, 2016, the Current State Transportation Projects Funding Agreement obligated the Authority to make payments to the State, commencing September 30, 2016, in the amount of $102,000,000 for the six months ending December 31, 2016, $204,000,000 in year 2017, $166,500,000 in year 2018, $129,000,000 in each of the years 2019 and 2020, and $64,500,000 for the six months ending June 30, 2021. As of October 4, 2018, the Authority and the State entered into an amendment to the original version of the Current State Transportation Projects Funding Agreement which increased the amount payable by the Authority to the State in calendar year 2019 by $25,000,000 to a total of $154,000,000. Such amendment did not amend or modify any other amounts required to be paid by the Authority in any year in accordance with the terms of the original version of the Current State Transportation Projects Funding Agreement. Except as described in the following paragraph with respect to the Authority's obligation to make PNB Project Payments (as defined below), the Current State Transportation Projects Funding Agreement expires on June 30, 2021.

As of September 24, 2019, the Authority and the State entered into a second amendment of the Current State Transportation Projects Funding Agreement pursuant to which the Authority agreed, contingent upon (i) the receipt by New Jersey Transit Corporation ("NJ Transit") of a capital improvement grant from the Federal Transit Administration to be used to fund a portion of the costs of a new Portal North Bridge Project (the "PNB Project") to be undertaken by NJ Transit, and (ii) the issuance of bonds by the New Jersey Economic Development Authority to fund a portion of the costs of the PNB Project (the "NJEDA Bonds"), to pay an annual amount of $25,000,000 (the "PNB Project Payments") to the State until the NJEDA Bonds are no longer outstanding. If the Authority becomes obligated to make the PNB Project Payments to the State, those payments will be in addition to the quarterly payments the Authority is obligated to make to the State under the Current State Transportation Projects Funding Agreement (or any successor agreement thereto) described in the preceding paragraph. The Authority's obligation to make the PNB Project Payments will commence upon the issuance of the NJEDA Bonds and shall continue annually thereafter until the NJEDA Bonds are no longer outstanding, but in no event shall the Authority be obligated to make PNB Project Payments for more than thirty (30) years. The Authority currently anticipates that the NJEDA Bonds will be issued in calendar year 2021.

In its Annual Budget for 2021, the Authority anticipates that it will enter into an amendment to the Current State Transportation Projects Funding Agreement or a new agreement with the State which will obligate the Authority to make annual payments of approximately $375,000,000 (which amount includes any annual PNB Project Payment the Authority may be obligated to pay) to the State, payable in four quarterly installments per year commencing September 30, 2021 and ending June 30, 2025. In connection with entering into an amendment to the Current State Transportation Projects Funding Agreement or a new agreement with the State, there can be no assurance that the Authority will not be requested to make payments to the State in amounts that are greater than $375,000,000 annually, or at time intervals other than quarterly.

Payments made by the Authority pursuant to the Current State Transportation Projects Funding Agreement are to be used by the State to pay or provide for the development of State transportation projects in an effort to further satisfy the overall transportation needs of the State. There can be no assurance that the Authority will not be requested to modify, accelerate and/or make additional payments to the State before or after the expiration of the Current State Transportation Projects Funding Agreement. Any such payments to the State would be paid from legally available amounts on deposit in the General Reserve Fund and will be subject and subordinate in all respects to the pledge created under the Resolution.

As of the date of this Official Statement, the Authority has made all required payments under the State Agreements.

Feeder Road Payments

The Authority has also entered into an agreement with the New Jersey Department of Transportation ("DOT" or "NJDOT") (the "Current Feeder Road Maintenance Agreement") whereby the Authority has agreed to make certain payments (the "Feeder Road O&M Payments") to the DOT to reimburse the DOT for the costs of reconstruction, maintenance and repair of certain roadways which the DOT owns and operates and which constitute "feeder roads" to the Turnpike System for purposes of the Act and the Resolution. Pursuant to the Current Feeder Road Maintenance Agreement, the DOT has agreed to maintain the feeder roads in a state of good repair sufficient to support the safe and efficient access and egress onto the Turnpike and the Parkway. The term of the Current Feeder Road Maintenance

Agreement commenced on July 1, 2016 and ends on June 30, 2023. Pursuant to the Current Feeder Road Maintenance Agreement, the Authority has agreed to make Feeder Road O&M Payments in the aggregate amounts of $4,000,000 for the six months ending December 31, 2016, $6,500,000 in year 2017, $4,500,000 in year 2018, $3,500,000 in year 2019, $2,500,000 for each of the years 2020 through 2022 and $1,250,000 for the six months ending June 30, 2023. The Authority anticipates that it will be required to continue to make annual Feeder Road O&M Payments to the DOT after the expiration of the term of the Current Feeder Road Maintenance Agreement. The obligation of the Authority to make the Feeder Road O&M Payments to the DOT is limited to the amounts on deposit in the General Reserve Fund which are legally available to be used by the Authority for such purposes and is subject and subordinate in all respects to the pledge created under the Resolution. The Current Feeder Road Maintenance Agreement is a successor agreement to a prior agreement between the Authority and the DOT, which required the Authority to make Feeder Road O&M Payments to the DOT during the period commencing July 1, 2009 and ending on June 30, 2016.

As of the date of this Official Statement, the Authority has made all of the Feeder Road O&M Payments required to be made pursuant to the Current Feeder Road Maintenance Agreement.

Potential Future Authority Payments for Non-Turnpike System Purposes

There can be no assurance that the Authority will not be requested to make future payments to the State in connection with State transportation purposes. Any such payments to the State would be paid from legally available amounts on deposit in the General Reserve Fund and would be subject and subordinate in all respects to the pledge created under the Resolution.

Additional Indebtedness

The Authority may issue Non-Refunding Bonds and Refunding Bonds under the General Bond Resolution on parity with Outstanding Bonds and the Authority's obligations under any Qualified Swap Agreement and Credit Facility upon satisfaction of the requirements described below and in Appendix D hereto under the captions "Issuance of Non-Refunding Bonds" and "Issuance of Refunding Bonds".

Issuance of Non-Refunding Bonds

One or more Series of Non-Refunding Bonds may be issued for the purpose of (i) paying the Costs of Construction of a Project, and (ii) raising funds to complete any Project for which Non-Refunding Bonds were issued pursuant to clause (i) above, subject to the following conditions and tests, among others:

(1) The Net Revenues for any period of twelve (12) consecutive calendar months (reflecting any adjustment in toll rates made at any time during such period as if such toll rates were effective since the beginning of such period) out of the preceding twenty-four (24) calendar months equal or exceed the Net Revenue Requirement for such twelve (12) months without regard to the Bonds to be issued;

(2) The estimated Net Revenues for the then current and each future calendar year to and including the fifth full calendar year after the estimated date when the Project will be placed in service equal or exceed the Net Revenue Requirement for each such year and Net Revenues in the fifth such calendar year equal or exceed future maximum Aggregate Debt Service in any year; and

(3) There will be deposited (i) in the Debt Reserve Fund the amount, if any, necessary so that the balance in such fund equals the Debt Reserve Requirement, calculated immediately after delivery of such Non-Refunding Bonds, (ii) in any other Fund the amount required by the Resolution, and (iii) in the Construction Fund for the Project specified by the applicable Series Resolution the remaining balance.

For the purposes of the above tests, the estimated Net Revenues are to be based on estimates by the Traffic Engineer of Turnpike Revenues and estimates by the Consulting Engineer of Operating Expenses and are to give effect to the construction of the Project for which such Bonds are being issued and any other uncompleted Project. The estimates of the Traffic Engineer are to reflect the effect of the construction, improvement or acquisition of any highway or other facility which any Federal, State or other agency is then projecting or planning and which, in its opinion, may be materially competitive with any part of the Turnpike System.

Issuance of Refunding Bonds

One or more Series of Refunding Bonds may be issued to refund (i) any or all Outstanding Bonds of one or more Series or maturities within a Series or Bonds within a maturity, or (ii) any Variable Rate Debt, Commercial Paper or Subordinated Indebtedness.

Bonds may be issued to refund Outstanding Bonds only if, among other conditions, (i) either the Authority meets the tests described above under “Issuance of Non-Refunding Bonds” or Aggregate Debt Service is not increased for any calendar year as a result of such refunding, and (ii) there shall be in effect a Qualified Swap with respect to the Bonds to be refunded and such Qualified Swap shall be terminated upon the date such Refunding Bonds are issued, and moneys in an amount sufficient to make the payment, if any, due by the Authority under such Qualified Swap upon such termination are deposited with the Trustee.

The issuance of Bonds to refund Variable Rate Debt, Commercial Paper or Subordinated Indebtedness is subject to substantially the same conditions and tests referred to above under “Issuance of Non-Refunding Bonds”.

In addition to authorizing the issuance of the Series 2021 A Bonds, the Series 2020 Resolution also authorizes, among other things, the issuance of not exceeding $2,216,618,000 of Refunding Bonds in one or more Series to refund all or a portion of the Authority’s Outstanding Turnpike Revenue Bonds, Series 2012 B Bonds, Series 2013 A Bonds, Series 2013 F Bonds, Series 2014 A Bonds, Series 2014 C Bonds, Series 2015 A Bonds, Series 2015 B Bonds, Series2015 C Bonds, Series 2015 D Bonds, Series 2015 E Bonds, Series 2015 F Bonds, Series 2015 G Bonds, Series 2015 H Bonds, Series 2016 B Bonds, Series 2016 C Bonds, Series 2016 D Bonds, and Series 2017 C Bonds. The Series 2021 B Bonds are being issued pursuant to the Series 2020 Resolution to advance refund, redeem and legally defease all of the Refunded Bonds. See “THE REFUNDING PLAN” herein. Pursuant to the Series 2020 Resolution, the Authority has previously issued and currently has Outstanding its (i) $33,875,000 Turnpike Revenue Bonds, Series 2020 A, which were issued on April 1, 2020 to refund, purchase and retire the Series 2015 B Bonds, (ii) $24,935,000 Turnpike Revenue Bonds, Series 2020 B, and $163,230,000 Turnpike Revenue Bonds, Series 2020 C, which were issued on June 18, 2020 to refund and legally defease all or a portion of the Series 2012 B, Series 2013 A, Series 2014 C, Series 2015 A, Series 2015 C, Series 2015 D, and Series 2017 C-1, and (iii) $149,440,000 Turnpike Revenue Bonds, Series 2020 D which were issued on December 22, 2020 to refund and legally defease the Series 2017 C-5 Bonds.

Subordinated Indebtedness

The Authority is also authorized to incur Subordinated Indebtedness under the General Bond Resolution. Such Subordinated Indebtedness is a special and limited obligation of the Authority, subject, subordinated and junior in all respects to the lien and pledge created by the Resolution in favor of all Bonds, certain Credit Facilities and Qualified Swaps. Subordinated Indebtedness is payable under the Resolution solely from amounts on deposit in the General Reserve Fund established under the Resolution that may be available from time to time to pay principal of and/or interest on Subordinated Indebtedness.

INTEREST RATE SWAP AGREEMENTS

Authority Payment Obligations under Qualified Swap Agreements

The Authority's respective fixed and termination payment obligations under its current Qualified Swap Agreements described below are secured by the pledge under the Resolution and are payable from amounts deposited in the Debt Service Fund equally and ratably and on parity with the payment of principal of and interest on Bonds and certain Credit Facilities.

Based upon the current ratings of the applicable Bonds, the Authority is currently not required to post collateral under any of its Qualified Swap Agreements. With respect to all Qualified Swap Agreements, other than the Series 2017 D-2, D-3 and D-4 Swap Agreement (as hereinafter defined) with Citibank, N.A., the rating on the applicable Bonds would have to drop below either Baa2 from Moody's (as hereinafter defined) or below BBB from S&P (as hereinafter defined), for any collateral posting requirements to be imposed upon the Authority under such agreements. With respect to the Series 2017 D-2, D-3 and D-4 Swap Agreement with Citibank, N.A., the rating on the Outstanding Series 2017 D-2, D-3 and D-4 Bonds would have to drop below A2 from Moody's, below A from S&P and below A from Fitch (as hereinafter defined) for any collateral posting requirements to be imposed upon the Authority under such agreements.

Each of the Authority's current Qualified Swap Agreements provides that an automatic, immediate termination of such Agreement shall take place upon the occurrence of the dissolution, bankruptcy, insolvency, liquidation or any similar related events involving or related to the Authority's counterparty (the "Counterparty") under such Agreement. If a Qualified Swap Agreement is automatically and immediately terminated as a result of any such event and the fair value of such Qualified Swap Agreement is negative to the Authority on the date of such automatic immediate termination, the Authority could be obligated to make a substantial termination payment to the Counterparty.

In connection with each of its Qualified Swap Agreements, the Authority has the option to terminate all or part of such Qualified Swap Agreements at any time. In the event that any Qualified Swap Agreement terminates prior to its stated termination date (including any optional termination by the Authority), either the Authority or the respective Counterparty will be required to make a termination payment to the other party. The party required to make such payment and the amount thereof will be determined by market conditions at the time of such early termination.

No financial or other information has been authorized to be provided herein with respect to any Counterparty. There can be no assurance that any Counterparty will pay or perform its obligations under its respective Qualified Swap Agreement in accordance with the terms thereof, or that such Counterparty will be able to pay any termination payment which it may be required to pay upon the occurrence of certain events of default or termination events under its respective Qualified Swap Agreement.

The following chart summarizes some of the material provisions of each of the Authority's current Qualified Swap Agreements. It is not intended to be a complete description of all of the material terms and provisions of each of those Agreements. See "APPENDIX A – FINANCIAL STATEMENTS OF THE AUTHORITY FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018 WITH INDEPENDENT AUDITORS' REPORT THEREON – Management's Discussion and Analysis – Debt Administration – 2019-2018" and "- Notes to Financial Statement – Note 7" for additional information about the Authority's Qualified Swap Agreements and the status of such Qualified Swap Agreements.

Swap Agreement/ Related Series of Bonds	Notional Amount	Termination Date	Rate Paid by Authority	Rate Received by Authority	Counterparty	Fair Value[1] (as of December 31, 2020)
Series 2015 A	10,625,000	1/1/2024	2.9800	67% of USD-LIBOR-BBA	U.S. Bank National Association[2]	$ (647,705)
Series 2015 A	10,600,000	1/1/2024	2.9800	67% of USD-LIBOR-BBA	U.S. Bank National Association[2]	(646,918)
Series 2015 C	10,625,000	1/1/2024	3.2488	67% of USD-LIBOR-BBA	Barclays Bank PLC	(708,645)
Series 2015 D	10,600,000	1/1/2024	3.2525	67% of USD-LIBOR-BBA	Barclays Bank PLC	(708,617)
Series 2015 F	72,350,000	1/1/2022	3.4486	73.2% of USD-LIBOR-BBA	Wells Fargo Bank, N.A.[3]	(2,641,495)
Series 2015 G	25,000,000	1/1/2024	3.3500	67% of USD-LIBOR-BBA	Wells Fargo Bank, N.A.[3]	(1,699,536)
Series 2015 H	48,235,000	1/1/2022	3.3050	67% of USD-LIBOR-BBA	Wells Fargo Bank, N.A.[3]	(1,690,603)
Series 2016 B	75,025,000	1/1/2023	3.4486	73.2% of USD-LIBOR-BBA	Wells Fargo Bank, N.A.[3]	(5,205,310)
Series 2016 C	50,015,000	1/1/2023	3.4486	63% USD-LIBOR-BBA plus 20 bp	Wells Fargo Bank, N.A.[3]	(3,274,339)
Series 2016 D	50,000,000	1/1/2024	3.3500	67% of USD-LIBOR-BBA	Wells Fargo Bank, N.A.[3]	(3,399,125)
Series 2017 C	131,370,000	1/1/2030	4.1720	70% of USD-LIBOR-BBA	Wells Fargo Bank, N.A. [3]	(25,900,432)
Series 2017 C	87,580,000	1/1/2030	4.1720	70% of USD-LIBOR-BBA	Wells Fargo Bank, N.A. [4]	(17,266,957)
Series 2017 D-1	77,625,000	1/1/2024	3.4486	73.2% of USD-LIBOR-BBA	Wells Fargo Bank, N.A.[4]	(7,870,062)
Series 2017 D-1	51,750,000	1/1/2024	3.4486	63% USD-LIBOR-BBA plus 20 bp	Wells Fargo Bank, N.A.[3]	(4,952,548)
Series 2017 D-2, D-3 and D-4	50,000,000	1/1/2024	3.3500	67% of USD-LIBOR-BBA	Citibank, N.A.	(3,398,712
Series 2020 A	33,875,000	1/1/2024	3.3975	80% of USD-LIBOR-BBA	Barclays Bank PLC	(907,233)

(1) Provided by the Authority's Financial Advisor; includes accrued interest.

(2) Former Counterparty was Morgan Stanley Capital Services LLC. Swap Agreement was novated to U.S. Bank National Association in 2016.

(3) Former Counterparty was Morgan Stanley Capital Services LLC. Swap Agreement was novated to Wells Fargo Bank, N.A. in 2015.

(4) Former Counterparty was UBS AG. Swap Agreement was novated to Wells Fargo Bank, N.A. in 2013.

Series 2015 A Swap Agreements

In connection with the issuance of its $92,500,000 Turnpike Revenue Bonds, Series 2015 A (the "Series 2015 A Bonds"), the Authority re-identified two then-existing Interest Rate Swap Agreements with Morgan Stanley Capital Services LLC (guaranteed by Morgan Stanley) in order to hedge the interest rate on those Bonds (collectively, the "Series 2015 A Swap Agreements"). In 2016, the Series 2015 A Swap Agreements were novated to U.S. Bank National Association. The Series 2015 A Swap Agreements currently have the following notional amounts:

Counterparty	Notional Amount
U.S. Bank National Association (A-1)	$10,625,000
U.S. Bank National Association (A-2)	10,600,000
	$21,225,000

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2015 A Swap Agreements is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2015 A Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2015 A Swap Agreements will be sufficient to pay the interest accruing on the Series 2015 A Bonds during such period.

The Series 2015 A Swap Agreements will terminate on January 1, 2024 (the final maturity date of the Series 2015 A Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2015 A-1 Swap Agreement had a negative fair value (including accrued interest) to the Authority of $647,705. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2015 A-2 Swap Agreement had a negative fair value (including accrued interest) to the Authority of $646,918.

Series 2015 C Swap Agreement

In connection with the issuance of its $43,750,000 Turnpike Revenue Bonds, Series 2015 C (the "Series 2015 C Bonds"), the Authority re-identified a then-existing Interest Rate Swap Agreement with Barclay's Bank PLC in order to hedge the interest rate on those Bonds (the "Series 2015 C Swap Agreement"). The Series 2015 C Swap Agreement currently has a notional amount of $10,625,000.

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2015 C Swap Agreement is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2015 C Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2015 C Swap Agreement will be sufficient to pay the interest accruing on the Series 2015 C Bonds during such period.

The Series 2015 C Swap Agreement will terminate on January 1, 2024 (the final maturity date of the Series 2015 C Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2015 C Swap Agreement had a negative fair value (including accrued interest) to the Authority of $708,645.

Series 2015 D Swap Agreement

In connection with the issuance of its $43,750,000 Turnpike Revenue Bonds, Series 2015 D (the "Series 2015 D Bonds"), the Authority re-identified a then-existing Interest Rate Swap Agreement with Barclay's Bank PLC in order to hedge the interest rate on those Bonds (the "Series 2015 D Swap Agreement"). The Series 2015 D Swap Agreement currently has a notional amount of $10,600,000.

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2015 D Swap Agreement is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2015 D Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2015 D Swap Agreement will be sufficient to pay the interest accruing on the Series 2015 D Bonds during such period.

The Series 2015 D Swap Agreement will terminate on January 1, 2024 (the final maturity date of the Series 2015 D Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2015 D Swap Agreement had a negative fair value (including accrued interest) to the Authority of $708,617.

Series 2015 F Swap Agreement

In connection with the issuance of its $72,350,000 Turnpike Revenue Bonds, Series 2015 F (the "Series 2015 F Bonds"), the Authority re-identified a portion of a then-existing Interest Rate Swap Agreement with Wells Fargo Bank, N.A. in the notional amount of $72,350,000 in order to hedge the interest rate on those Bonds (the "Series 2015 F Swap Agreement").

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2015 F Swap Agreement is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2015 F Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2015 F Swap Agreement will be sufficient to pay the interest accruing on the Series 2015 F Bonds during such period.

The Series 2015 F Swap Agreement will terminate on January 1, 2022 (the final maturity date of the Series 2015 F Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2015 F Swap Agreement had a negative fair value (including accrued interest) to the Authority of $2,641,495.

Series 2015 G Swap Agreement

In connection with the issuance of its $25,000,000 Turnpike Revenue Bonds, Series 2015 G (the "Series 2015 G Bonds"), the Authority re-identified a portion of a then-existing Interest Rate Swap Agreement with Wells Fargo Bank, N.A. in the notional amount of $25,000,000 in order to hedge the interest rate on those Bonds (the "Series 2015 G Swap Agreement").

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2015 G Swap Agreement is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2015 G Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2015 G Swap Agreement will be sufficient to pay the interest accruing on the Series 2015 G Bonds during such period.

The Series 2015 G Swap Agreement will terminate on January 1, 2024 (the final maturity date of the Series 2015 G Bonds), unless terminated sooner in accordance with its terms. As calculated by the

Authority's Financial Advisor, as of December 31, 2020, the Series 2015 G Swap Agreement had a negative fair value (including accrued interest) to the Authority of $1,699,536.

Series 2015 H Swap Agreement

In connection with the issuance of its $48,235,000 Turnpike Revenue Bonds, Series 2015 H (the "Series 2015 H Bonds"), the Authority re-identified a portion of a then-existing Interest Rate Swap Agreement with Wells Fargo Bank, N.A. in the notional amount of $48,235,000 in order to hedge the interest rate on those Bonds (the "Series 2015 H Swap Agreement").

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2015 H Swap Agreement is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2015 H Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2015 H Swap Agreement will be sufficient to pay the interest accruing on the Series 2015 H Bonds during such period.

The Series 2015 H Swap Agreement will terminate on January 1, 2022 (the final maturity date of the Series 2015 H Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2015 H Swap Agreement had a negative fair value (including accrued interest) to the Authority of $1,690,603.

Series 2016 B Swap Agreement

In connection with the issuance of its $75,025,000 Turnpike Revenue Bonds, Series 2016 B (the "Series 2016 B Bonds"), the Authority re-identified a portion of a then-existing Interest Rate Swap Agreement with Wells Fargo Bank, N.A. in the notional amount of $75,025,000 in order to hedge the interest rate on those Bonds (the "Series 2016 B Swap Agreement").

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2016 B Swap Agreement is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2016 B Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2016 B Swap Agreement will be sufficient to pay the interest accruing on the Series 2016 B Bonds during such period.

The Series 2016 B Swap Agreement will terminate on January 1, 2023 (the final maturity date of the Series 2016 B Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2016 B Swap Agreement had a negative fair value (including accrued interest) to the Authority of $5,205,310.

Series 2016 C Swap Agreement

In connection with the issuance of its $50,015,000 Turnpike Revenue Bonds, Series 2016 C (the "Series 2016 C Bonds"), the Authority re-identified a portion of a then-existing Interest Rate Swap Agreement with Wells Fargo Bank, N.A. in the notional amount of $50,015,000 in order to hedge the interest rate on those Bonds (the "Series 2016 C Swap Agreement").

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2016 C Swap Agreement is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2016 C Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2016 C Swap Agreement will be sufficient to pay the interest accruing on the Series 2016 C Bonds during such period.

The Series 2016 C Swap Agreement will terminate on January 1, 2023 (the final maturity date of the Series 2016 C Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2016 C Swap Agreement had a negative fair value (including accrued interest) to the Authority of $3,274,339.

Series 2016 D Swap Agreement

In connection with the issuance of its $50,000,000 Turnpike Revenue Bonds, Series 2016 D (the "Series 2016 D Bonds"), the Authority re-identified a portion of a then-existing Interest Rate Swap Agreement with Wells Fargo Bank, N.A. in the notional amount of $50,000,000 in order to hedge the interest rate on those Bonds (the "Series 2016 D Swap Agreement").

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2016 D Swap Agreement is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2016 D Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2016 D Swap Agreement will be sufficient to pay the interest accruing on the Series 2016 D Bonds during such period.

The Series 2016 D Swap Agreement will terminate on January 1, 2024 (the final maturity date of the Series 2016 D Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2016 D Swap Agreement had a negative fair value (including accrued interest) to the Authority of $3,399,125.

Series 2017 C Swap Agreements

In connection with the issuance of its $400,000,000 Turnpike Revenue Bonds, Series 2017 C (the "Series 2017 C Bonds"), the Authority re-identified two then-existing Interest Rate Swap Agreements with Wells Fargo Bank, N.A. in order to hedge the interest rate on those Bonds (collectively, the "Series 2017 C Swap Agreements"). As of December 31, 2020, the Series 2017 C Swap Agreements had the following notional amounts:

Counterparty	Notional Amount
Wells Fargo Bank, N.A.	$ 131,370,000
Wells Fargo Bank, N.A.	87,580,000
	$ 218,950,000

The method of determining the floating interest rates payable in any period by the Counterparty under the Series 2017 C Swap Agreements is meant to closely approximate the methods of determining the floating interest rate payable in such period by the Authority for the Series 2017 C Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2017 C Swap Agreements will be sufficient to pay the interest accruing on the Series 2017 C Bonds during such period.

The Series 2017 C Swap Agreements will terminate on January 1, 2030 (the final maturity date of the Series 2017 C Bonds), unless terminated sooner in accordance with their respective terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2017 C Swap Agreement with a notional amount of $131,370,000 had a negative fair value (including accrued interest) to the Authority of $25,900,432. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2017 C Swap Agreement with a notional value of $87,580,000 had a negative fair value (including accrued interest) to the Authority of $17,266,957.

Series 2017 D-1 Swap Agreements

In connection with the issuance of its $129,375,000 Turnpike Revenue Bonds, Series 2017 D-1 (the "Series 2017 D-1 Bonds"), the Authority re-identified two then-existing Interest Rate Swap Agreements with Wells Fargo Bank, N.A. in order to hedge the interest rate on those Bonds (collectively, the "Series 2017 D-1 Swap Agreements"). The Series 2017 D-1 Swap Agreements currently have the following notional amounts:

Counterparty	Notional Amount
Wells Fargo Bank, N.A.	$ 77,625,000
Wells Fargo Bank, N.A.	51,750,000
	$ 129,375,000

The method of determining the floating interest rates payable in any period by the Counterparty under the Series 2017 D-1 Swap Agreements is meant to closely approximate the methods of determining the floating interest rate payable in such period by the Authority for the Series 2017 D-1 Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2017 D-1 Swap Agreements will be sufficient to pay the interest accruing on the Series 2017 D-1 Bonds during such period.

The Series 2017 D-1 Swap Agreements will terminate on January 1, 2024 (the final maturity date of the Series 2017 D-1 Bonds), unless terminated sooner in accordance with their respective terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2017 D-1 Swap Agreement with a notional amount of $77,625,000 had a negative fair value (including accrued interest) to the Authority of $7,870,062. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2017 D-1 Swap Agreement with a notional value of $51,750,000 had a negative fair value (including accrued interest) to the Authority of $4,952,548.

Series 2017 D-2, D-3 and D-4 Swap Agreement

In connection with the issuance of its $16,075,000 Turnpike Revenue Bonds, Series 2017 D-2, its $16,675,000 Turnpike Revenue Bonds, Series 2017 D-3, and its $17,250,000 Turnpike Revenue Bonds, Series 2017 D-4 (collectively, the "Series 2017 D-2, D-3 and D-4 Bonds"), the Authority re-identified a then-existing Interest Rate Swap Agreement with Citibank, N.A in the notional amount of $50,000,000 in order to hedge the interest rate on those Bonds (the "Series 2017 D-2, D-3 and D-4 Swap Agreement").

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2017 D-2, D-3 and D-4 Swap Agreement is meant to closely approximate the method of determining the floating interest rates payable in such period by the Authority for the Series 2017 D-2, D-3 and D-4 Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2017 D-2, D-3 and D-4 Swap Agreement will be sufficient to pay the interest accruing on the Series 2017 D-2, D-3 and D-4 Bonds during such period.

The Series 2017 D-2, D-3 and D-4 Swap Agreement will terminate on January 1, 2024 (the final maturity date of the Series 2017 D-2, D-3 and D-4 Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2017

D-2, D-3 and D-4 Swap Agreement had a negative fair value (including accrued interest) to the Authority of $3,398,712.

Series 2020 A Swap Agreement

In connection with the issuance of its $33,875,000 Turnpike Revenue Bonds, Series 2020 A (the "Series 2020 A Bonds"), the Authority amended and re-identified a then-existing Interest Rate Swap Agreement with Barclay's Bank PLC in the notional amount of $33,875,000 in order to hedge the interest rate on those Bonds (the "Series 2020 A Swap Agreement").

The method of determining the floating interest rate payable in any period by the Counterparty under the Series 2020 A Swap Agreement is meant to closely approximate the method of determining the floating interest rate payable in such period by the Authority for the Series 2020 A Bonds. However, there can be no assurance that the floating amounts received in any period by the Authority under the Series 2020 A Swap Agreement will be sufficient to pay the interest accruing on the Series 2020 A Bonds during such period.

The Series 2020 A Swap Agreement will terminate on January 1, 2024 (the final maturity date of the Series 2020 A Bonds), unless terminated sooner in accordance with its terms. As calculated by the Authority's Financial Advisor, as of December 31, 2020, the Series 2020 A Swap Agreement had a negative fair value (including accrued interest) to the Authority of $907,233.

DIRECT PURCHASE TRANSACTIONS

The following table summarizes the terms of the Authority's direct purchase transactions as of the date of this Official Statement. The Series 2015 A Bonds, the Series 2015 C Bonds, the Series 2015 D Bonds, the Series 2015 F Bonds, the Series 2015 G Bonds, the Series 2015 H Bonds, the Series 2016 B Bonds, the Series 2016 C Bonds, the Series 2016 D Bonds, the Series 2020 A Bonds, the Series 2020B Bonds, the Series 2020 C Bonds and the Series 2020 D Bonds are on parity with all Bonds Outstanding under the Resolution from time to time, including the Series 2021 B Bonds, and the Authority's reimbursement and payment obligations under certain Credit Facilities and Qualified Swaps. See "SECURITY FOR THE BONDS" herein.

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Series of Bonds	Direct Purchaser	Tax-Exempt or Federally Taxable	Final Maturity Date	Par Amount	Fixed or Floating Rate[(1)]	Interest Rate Reset
2015 A	DNT Asset Trust	Tax-Exempt	01/01/2024	$92,500,000	67% of 1-month LIBOR + 78 bp	Monthly
2015 C	DNT Asset Trust	Tax-Exempt	01/01/2024	43,750,000	67% of 1-month LIBOR + 70 bp	Monthly
2015 D	DNT Asset Trust	Tax-Exempt	01/01/2024	43,750,000	67% of 1-month LIBOR + 70 bp	Monthly
2015 F	U.S. Bank National Association	Tax-Exempt	01/01/2022	72,350,000	75% of 1-month LIBOR + 59.5 bp	Weekly
2015 G	TD Bank, N.A.	Tax-Exempt	01/01/2024	25,000,000	69.75% of 1-month LIBOR + 60 bp	Weekly
2015 H	DNT Asset Trust	Tax-Exempt	01/01/2022	48,235,000	67% of 1-month LIBOR + 74 bp	Monthly
2016 B	TD Bank, N.A.	Tax-Exempt	01/01/2023	75,025,000	70% of 1-month LIBOR + 63 bp	Weekly
2016 C	TD Bank, N.A.	Tax-Exempt	01/01/2023	50,015,000	70% of 1-month LIBOR + 63 bp	Weekly
2016 D	TD Bank, N.A.	Tax-Exempt	01/01/2024	50,000,000	70% of 1-month LIBOR + 64 bp	Weekly
2020 A	DNT Asset Trust	Tax-Exempt	01/01/2024	33,875,000	80% of 1-month LIBOR + 30 bp	Monthly
2020 B	JPMorgan Chase Bank, N.A	Federally Taxable	01/01/2028	24,935,000	2.500%	n/a
2020 C	Barclays Capital Inc.	Federally Taxable	01/01/2035	163,230,000	3.223%	n/a
2020 D	Barclays Capital Inc.	Tax-Exempt	01/01/2028	149,44 0,000	5.000%	n/a

[(1)] The floating rates are subject to increase under certain circumstances as provided in the respective certificates of determination executed by the Authority in connection with each Series of the applicable Direct Purchase Bonds; provided, however, that in no event shall the floating rate exceed the Maximum Rate (the lesser of 12% or the highest rate allowed by applicable law).

Each Series of the above-described Bonds (collectively, the "Direct Purchase Bonds") is subject to mandatory tender for purchase at the option of the holder of such Series of Direct Purchase Bonds upon the occurrence of an Extraordinary Mandatory Purchase Event. In addition to the failure of the Authority to pay the debt service on any Bond or other parity obligation of the Authority, when due, and the occurrence of an Event of Default under the Resolution, the Extraordinary Mandatory Purchase Events generally include (i) the rating on the Bonds is reduced to or below BBB by Fitch or S&P or Baa2 by

Moody's, or removed, suspended or withdrawn, (ii) the occurrence of a determination of taxability with respect to the applicable Series of tax-exempt Direct Purchase Bonds, (iii) a judgment in the amount of $10,000,000 or more is entered against the Authority which is not covered by insurance and which is not discharged, stayed or bonded within 45 days after the entry of such judgment, (iv) any court or other governmental authority shall rule that any provision of the Resolution relating to payment and security of the Bonds or any provision of the applicable Bondholder Agreement entered into by and between the Authority and the purchaser of each Series of the Direct Purchase Bonds is not valid and binding on the Authority, (v) the Authority, or any person on its behalf, shall contest the validity or enforceability any provision of the Resolution relating to payment and security of the Bonds or any provision of the applicable Bondholder Agreement, (vi) if, for any other reason, any provision of the Resolution relating to payment and security of the Bonds or any provision of the applicable Bondholder Agreement shall cease be to valid and binding on the Authority, (vii) the failure of the Authority to pay, when due, any Subordinated Indebtedness in an aggregate outstanding principal amount of $5,000,000 or more, or the occurrence of any event of default by the Authority under any agreement or instrument relating to such Subordinated Indebtedness, and (viii) the occurrence of an event of default under the applicable Bondholder Agreement. In the event that the Authority cannot pay the purchase price for all or a portion of such Series of Bonds on any such extraordinary mandatory purchase date, (i) 50% of the principal amount of any unpurchased Bonds will be subject to mandatory redemption on the date that is one year after such extraordinary mandatory purchase date, at a Redemption Price equal to 100% of the principal amount of such Direct Purchase Bonds to be redeemed plus accrued interest to the redemption date, and (ii) the entire remaining aggregate principal amount of such unpurchased Bonds will be subject to mandatory redemption on the date that is two years after such extraordinary mandatory purchase date, at a Redemption Price equal to 100% of the principal amount of such Direct Purchase Bonds to be redeemed plus accrued interest to the redemption date. A copy of each Bondholder Agreement has been filed with, and is available to be viewed on, the Electronic Municipal Market Access ("EMMA") system of the Municipal Securities Rulemaking Board located at www.emma.msrb.org.

THE REFUNDING PLAN

In order to provide for the advance refunding and legal defeasance of the Refunded Bonds, on the date of issuance and delivery of the Series 2021 B Bonds, a portion of the proceeds of the Series 2021 B Bonds, together with other available funds of the Authority, will be irrevocably deposited into an escrow fund (the "Escrow Fund") to be held by The Bank of New York Mellon, as Escrow Agent (the "Escrow Agent"), and established pursuant to an escrow deposit agreement (the "Escrow Agreement") between the Authority and the Escrow Agent. Simultaneously with the issuance of the Series 2021 B Bonds, substantially all of the amounts so deposited into the Escrow Fund will be used by the Escrow Agent to purchase certain direct and general obligations of the United States of America constituting "Federal Securities" as defined in the Resolution (the "Defeasance Securities"). The maturing principal of and interest on the Defeasance Securities, together with the other available moneys, if any, on deposit in the Escrow Fund, will be sufficient, to pay, when due, (i) the interest on the Refunded Bonds coming due on January 1 and July 1 of each year on and prior to each applicable maturity date or redemption date for the Refunded Bonds set forth in APPENDIX G to this Official Statement (each, a "Redemption Date"), and (ii) the principal or Redemption Price of the Refunded Bonds coming due on each applicable maturity date or Redemption Date for the Refunded Bonds. The Refunded Bonds to be redeemed will be redeemed on each applicable Redemption Date at a Redemption Price equal to 100% of the principal amount thereof to be redeemed, plus interest accrued thereon to the Redemption Date. Upon the deposit of the Defeasance Securities and such other available moneys, if any, in the Escrow Fund, the Refunded Bonds will no longer be deemed Outstanding for purposes of the Resolution and will no longer have the benefit of the pledge of and lien on the Pledged Revenues under the Resolution, but will be secured solely by the amounts on deposit in the Escrow Fund. See "VERIFICATION OF MATHEMATICAL CALCULATIONS" herein.

ESTIMATED SOURCES AND USES OF FUNDS

The estimated sources and uses of funds for the Series 2017 B Bonds are as follows:

Sources of Funds:	
Par Amount of Series 2021 B Bonds	$ 995,235,000
Other Available Funds	3,679,650
Total Sources of Funds	$ 998,914,650
Uses of Funds:	
Deposit to Escrow Fund	$ 996,711,891
Costs of Issuance[1]	2,202,759
Total Uses of Funds	$ 998,914,650

[1] Includes legal fees, financial advisory fees, Trustee and Escrow Agent fees, Verification Agent fees, rating agency and consulting fees and costs, underwriters' discount, and other costs of issuance, including rounding amount.

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AGGREGATE BOND DEBT SERVICE REQUIREMENTS

The table below shows debt service after the issuance of the Series 2021 A Bonds and the Series 2021 B Bonds.

Fiscal Year Ending December 31	Debt Service on Outstanding Bonds(1),(2),(3),(4)	Series 2021 A Debt Service(1)	Series 2021 B Debt Service(1)	Total Debt Service After Issuance of Series 2021 A Bonds and Series 2021 B Bonds
2021	$ 764,273,648	$ 18,257,500	$ 14,719,296	$ 797,250,444
2022	820,794,276	20,100,000	18,204,729	859,099,005
2023	787,892,828	20,100,000	65,165,269	873,158,097
2024	801,035,111	20,100,000	99,092,840	920,227,952
2025	759,708,611	20,100,000	149,761,447	929,570,058
2026	812,031,574	20,100,000	99,091,923	931,223,497
2027	745,331,361	20,100,000	167,536,690	932,968,051
2028	809,379,856	20,100,000	95,664,449	925,144,305
2029	809,369,443	20,100,000	95,667,746	925,137,189
2030	774,908,156	20,100,000	130,094,153	925,102,309
2031	888,113,530	20,100,000	16,861,482	925,075,012
2032	882,670,384	20,100,000	22,268,866	925,039,250
2033	892,374,550	20,100,000	12,539,303	925,013,853
2034	857,877,811	20,100,000	12,794,386	890,772,196
2035	833,990,025	20,100,000	6,641,277	860,731,302
2036	815,431,640	20,100,000	6,641,993	842,173,633
2037	820,089,095	20,100,000	6,642,574	846,831,669
2038	748,439,405	20,100,000	71,531,069	840,070,474
2039	748,559,360	20,100,000	71,387,238	840,046,599
2040	871,908,240	20,100,000	--	892,008,240
2041	230,898,700	270,100,000	--	500,998,700
2042	230,904,100	10,100,000	--	241,004,100
2043	147,523,300	10,100,000	--	157,623,300
2044	147,520,800	10,100,000	--	157,620,800
2045	147,521,700	10,100,000	--	157,621,700
2046	147,523,000	10,100,000	--	157,623,000
2047	147,521,450	10,100,000	--	157,621,450
2048	--	90,985,000	--	90,985,000
2049	--	90,989,600	--	90,989,600
2050	--	90,989,600	--	90,989,600
TOTAL*	$17,443,591,955	$1,003,821,700	$1,162,306,729	$19,609,720,384

* Totals may not add up due to rounding.

(1) Debt service payable on January 1 of each year is included in the debt service for the prior fiscal year.

(2) Excludes debt service on the Refunded Bonds which will be advance refunded and legally defeased upon the issuance of the Series 2021 B Bonds.

(3) Interest assumed to be paid at the fixed swap rate for any variable rate bonds swapped to fixed rate and does not include fees such as those for letters of credit, standby agreements, remarketing fees, or any potential mismatch between the bond variable rate and swap variable rate. Spreads over the variable rate index on variable rate bonds are included in the calculation of the interest accruing on such bonds and are assumed to be constant through final maturity of the associated variable rate bonds.

(4) Interest on the $5,000,000 unhedged portion of the Outstanding Turnpike Revenue Bonds, Series 2015 A, is calculated at the Maximum Rate of 12%.

THE AUTHORITY

General

The Authority is a body corporate and politic of the State organized and existing by virtue of the Act and is a public instrumentality exercising essential governmental functions. The Authority is empowered to acquire, construct, maintain, repair, and operate projects at locations established by law, to fix and establish tolls for the use of the Turnpike System, and to issue revenue bonds for its purposes.

Pursuant to the Act, the Authority has owned and operated the Turnpike since the time the Turnpike opened for traffic in 1951. In July 2003, the Highway Authority was abolished and the Authority assumed all powers, rights, obligations, assets, debts, liabilities, and statutory responsibilities and duties of the Highway Authority, including the ownership and operation of the Parkway. As a result, the assets and liabilities of the Authority and the Highway Authority and the ongoing operations, expenses, and revenues of the Turnpike and the Parkway are now combined under the ownership and operation of the Authority.

Certain Powers

The Act authorizes the Authority to acquire, improve, construct, maintain, repair, manage, and operate transportation projects or any part thereof at such locations as established by law or by the Authority and to exercise the power of eminent domain in connection with any of its corporate purposes.

The Act also authorizes the Authority to issue revenue bonds maturing not later than forty (40) years from their date or dates for any of its corporate purposes, payable solely from or secured by a pledge of tolls, other revenues of transportation projects, and the proceeds of such bonds. The Act provides that such bonds shall not be deemed to constitute a debt or liability of the State or of any political subdivision thereof, or a pledge of the faith, credit or taxing power of the State or of any such political subdivision, but that such bonds shall be payable from funds pledged or available for their payment as authorized in the Act. The Authority is also empowered to issue notes for any of its corporate purposes in the same manner as bonds are issued under the Act.

In addition, the Authority has the power, by resolution, to fix and revise from time to time and charge and collect tolls, fees, licenses, rents, concessions, and other charges for each transportation project or part thereof constructed or acquired by it; and, subject to any agreement with bondholders, to invest moneys of the Authority not required for immediate use, including proceeds from the sale of any bonds, in such obligations, securities and other investments as the Authority shall deem prudent. Pursuant to the Act, whenever the Authority desires to increase any existing toll or establish any new toll for the use of any highway project, including the Turnpike and/or the Parkway, it is required to hold a public hearing on such proposed toll at least 45 days prior to the date on which such toll is proposed to become effective.

The Act provides that no resolution or other action of the Authority providing for the issuance of bonds, refunding bonds or other obligations or for the fixing, revising or adjusting of tolls for the use of the Turnpike System or any parts or sections thereof shall be adopted or otherwise made effective by the Authority without the prior approval in writing of the Governor and the Treasurer of the State. In addition, the Act requires that a true copy of the minutes of every meeting of the Authority shall be forthwith delivered to the Governor and that no action taken at such meeting by the Authority shall have force or effect until 10 days, exclusive of Saturdays, Sundays and public holidays, after such copy of the minutes shall have been so delivered. If, during such 10-day period, the Governor returns such copy of the minutes with a veto of any action taken by the Authority, or any member thereof, at such meeting, such action shall be null and of no effect. The Act permits the Governor to approve all or part of the action taken at such meeting prior to the expiration of such 10-day period. The Act further provides that the powers conferred upon the Governor and the Treasurer of the State described above shall be exercised with due regard for the rights of the holders of bonds of the Authority at any time outstanding, and nothing in, or done pursuant to, the Act shall in any way limit, restrict or alter the obligation or powers of the Authority or any representative or officer of the Authority to carry out and perform in every detail each and every covenant, agreement or contract at any time made or entered into by or on behalf of the Authority with respect to its bonds or for the benefit, protection or security of the holders thereof.

Governance

The Act provides that the Board of Commissioners of the Authority shall consist of eight members as follows: the Commissioner of the New Jersey Department of Transportation, ex officio, or his/her designee; five members appointed by the Governor with the advice and consent of the Senate; one member appointed by the Governor upon recommendation of the President of the Senate; and one member appointed by the Governor upon recommendation of the Speaker of the General Assembly. Members of the Authority (other than the Commissioner of Transportation) sit for a term of five years and until a successor is appointed and has been confirmed. Five members of the Authority constitute a quorum and the vote of five members is necessary for any action taken by the Authority. The Governor designates the chairman and vice chairman, who serve in these positions at the pleasure of the Governor and until their successors have been designated. The Authority selects its secretary and treasurer, neither of whom need be members. All Authority members serve without compensation but are reimbursed for actual expenses incurred in the performance of duties.

The current members of the Authority are as follows:

DIANE GUTIERREZ-SCACCETTI (Commissioner; Chair). Ms. Gutierrez-Scaccetti is the Commissioner of the New Jersey Department of Transportation. She began serving in an acting capacity on January 16, 2018 and was confirmed by the State Senate on June 7, 2018. As NJDOT Commissioner, Ms. Gutierrez-Scaccetti serves ex-officio as a Commissioner of the Authority and by gubernatorial designation as Chair of the Authority's Board. She is a native of New Jersey and a career transportation professional. Ms. Gutierrez-Scaccetti worked for six and a half years as Executive Director and CEO of Florida's Turnpike Enterprise before returning to New Jersey in 2018. Previously, she worked for more than 20 years in various management positions at the Authority, including serving as Executive Director from 2008 to 2010. She holds a B.S. from the University of Connecticut and an M.S. from Rutgers University.

ULISES E. DIAZ (Commissioner; Vice Chairman). Mr. Diaz is employed at Horizon Blue Cross Blue Shield of New Jersey, where he is responsible for the development of government affairs activities and legislative programs for New Jersey. He previously was employed in a similar capacity at Verizon Communications. Mr. Diaz also worked at United Water New Jersey for several years, where he was responsible for all external affairs activities, including government and public affairs, communications and business development. He holds a B.A. in Business Administration from Rutgers University. Mr. Diaz's term expired in November 2018, and he is currently serving in a hold-over capacity.

MICHAEL R. DuPONT (Commissioner; Treasurer). Mr. DuPont is a partner in the law firm McKenna, DuPont, Higgins & Stone. He has worked on the transition teams of Governor Jon S. Corzine and former Governor James E. McGreevey. He serves as President of the Garden State Arts Foundation. Mr. DuPont earned a B.A. in Political Science and Business Administration from Loyola University and a J.D. from the John Marshall Law School. Mr. DuPont's term expired in February 2013, and he is currently serving in a hold-over capacity.

RAYMOND M. POCINO (Commissioner). Mr. Pocino is a 50-year member of the Laborers International Union of North America (LIUNA) and holds the title of President Emeritus with the 3,500-member Construction & General Laborers Local 172 in Trenton. He has been manager of the Eastern Region Office of LIUNA since 1995 and serves on its Executive Board. He also serves on the Executive Board of the New Jersey AFL-CIO and on the board of the Port Authority of New York & New Jersey.

He is serving his fifth term on the Authority. Mr. Pocino's term expired in February 2011, and he is currently serving in a hold-over capacity.

RONALD GRAVINO (Commissioner). Mr. Gravino is Vice President for finance and human resources at Invidi Technologies Corp. in Princeton, which he joined after many years as a financial/turnaround consultant. He serves as chairman of the Newark Liberty International Airport Advisory Board and on the boards of the Transportation Finance Review Commission and the Garden State Arts Foundation. He served for six years as a commissioner of the former New Jersey Highway Authority, including a term as chairman. Mr. Gravino earned a B.A. in Accountancy from Charter Oak College in Hartford, Connecticut. Mr. Gravino's term expires in February 2022.

JOHN D. MINELLA (Commissioner). Mr. Minella is the Executive Director of the Hudson County Democratic Organization. He retired from the Authority in 2011 after more than 25 years of service. For most of his tenure, he served as Assistant Superintendent of Garden State Parkway Roadway Maintenance. Mr. Minella also previously worked as Management Specialist for the Office of the Mayor, Jersey City, and Real Estate Manager and Assistant Director, Public Service Employment, Jersey City Office of Employment and Training. He is the First Vice President of the Bayonne Chapter U.N.I.C.O., a member of the Loyal Order of Moose Lodge #266, and he has been a member of the Madeline Fiadini LoRe Foundation for Cancer Prevention since it was founded in 2008. He formerly served a member of the Jersey City Board of Education and the Jersey City Municipal Utilities Authority, and as Chair of the Jersey City Sewerage Authority. He is a graduate of St. Peters College, Jersey City. Mr. Minella's term expired in July 2018, and he is currently serving in a hold-over capacity.

RAPHAEL SALERMO (Commissioner). Mr. Salermo is a Managing Partner of the MAR Acquisition Group LLC. He has held leadership positions in several civic organizations including the Greater Elizabeth Chamber of Commerce, the Elizabeth Development Corporation, the YMCA of Eastern Union County, the Elizabeth Avenue Partnership and the Union County Workforce Investment Board. Mr. Salermo's term expired in February 2019, and he is currently serving in a hold-over capacity.

There is currently one vacancy on the Board of Commissioners of the Authority.

The Authority is empowered to appoint such officers, employees and agents as may be necessary in its judgment. The Commissioners have created the executive staff positions of Executive Director, Deputy Executive Director and Chief Financial Officer, among others. The Authority's executive staff currently includes:

JOHN M. KELLER, P.E. (Executive Director). Mr. Keller was appointed Executive Director in April 2018 after 20 years with the Authority. He was serving as Deputy Chief Engineer, Design, immediately before his appointment. Mr. Keller has managed several of the Authority's largest capital programs during his career. Those include the widening of the Turnpike between Interchanges 6 and 9, the construction of Turnpike Interchange 15X in Secaucus, and the ongoing Facilities Improvement Program, under which more than 50 tolls, maintenance and State Police buildings are being constructed or rehabilitated. Mr. Keller has a Bachelor of Science in Civil Engineering from the Indiana Institute of Technology and is a Certified Project Management Professional and a licensed Professional Engineer. He has served terms as President and Regional Director of the North/Central NJ Section of American Society of Highway Engineers and is an active member of several engineering and construction associations both locally and nationally.

JAMES CARONE (Deputy Executive Director). Mr. Carone, a Certified Public Accountant, was named Deputy Executive Director of the Authority in April 2018. He began work as a Staff Auditor at the New Jersey Highway Authority in 1977, and during his 26 years with the Highway Authority held the positions of Senior Auditor, Audit Manager, and Assistant Chief Auditor. When the Highway Authority and the New Jersey Turnpike Authority were consolidated in 2003, Mr. Carone was named Director of

Internal Audit, a position he held until his promotion to Deputy Executive Director. Mr. Carone is a 1976 graduate of Lycoming College in Williamsport, Pennsylvania.

DONNA MANUELLI (Chief Financial Officer). Ms. Manuelli was promoted to Chief Financial Officer in December 2010. She has served the Authority for the past twenty years, holding various positions of increasing responsibility in the organization. She previously served as Comptroller from 2005 – 2010 and as Assistant Comptroller from 1999 – 2005. Prior to joining the Authority, Ms. Manuelli was a Vice President at Midlantic National Bank, where she spent ten years in credit analysis and asset based lending. Ms. Manuelli currently serves on the Finance Committee of the E-ZPass Group, an organization of toll roads and bridges throughout the United States, and was Chairperson for three years. Ms. Manuelli received a B.S. degree in Business Administration with a concentration in Finance from Villanova University where she graduated Cum Laude and has taken graduate level courses at Rutgers University.

The Turnpike

The Turnpike is a limited access toll road that serves as part of the I-95 corridor linking the major economic centers of the East Coast. Its connections to a major seaport in Newark and Elizabeth and an international airport in Newark make it an important route for both commercial and passenger vehicles. It also serves New Jersey commuters traveling to and from the major metropolitan areas surrounding Philadelphia and New York City and other employment centers in the State. The Turnpike was the first toll road in New Jersey and the third in the nation when it opened in 1951.

At the time the Turnpike opened in 1951, it was 118 miles in length and today consists of 148 center lane miles. The center lane miles have grown over the years with the addition of the Newark Bay Hudson County Extension (1956), the Pearl Harbor Memorial Turnpike Extension (1956), the Western Spur (1970) and the I-95 Extension (1992). The mainline connects to the George Washington Bridge in the north, and the Delaware Memorial Bridge in the south. To the east, it connects with the Lincoln and Holland Tunnels and the Outerbridge Crossing, and to the west with the Delaware River Turnpike Bridge. Originally four lanes for its full length, the Turnpike is now as wide as 14 lanes in some areas.

The Parkway

The Parkway opened to traffic in 1954. Originally 168 miles in length, today the Parkway is a 173-mile limited access toll road with connections in the south to Route 9 near Cape May, New Jersey, and in the north to the New York State Thruway at the New York-New Jersey border near Spring Valley, New York. The Parkway interchanges are numbered according to their distance from the southern terminus.

The northern section of the Parkway serves the metropolitan suburban areas in Bergen, Union, Essex, and Passaic Counties near Newark and New York City. In addition to being heavily used by commuters, the location of many businesses and industrial complexes in or near the Parkway corridor has resulted in significant local business traffic. The Parkway also is the principal highway route between metropolitan Newark-New York City and the New Jersey seashore. Heavy trucks are not allowed north of Interchange 105. The Parkway is now as wide as 15 lanes in some areas.

Capital Improvement Programs

2008 Capital Improvement Program

In October 2008, the Authority adopted the 2008 CIP, which includes numerous projects focused on major capacity and other roadway improvements to both the Turnpike and the Parkway, bridge construction and improvements, interchange improvements and other facilities improvements. In September 2018, the Authority amended the 2008 CIP to extend its end date to December 31, 2020.

Savings resulting from lower than anticipated construction costs allowed the Authority to increase the number of projects included in the 2008 CIP to 39 from an originally authorized amount of 34 projects. The work remaining to be completed as part of the 2008 CIP includes the Newark Bay Hudson Extension bridge rehabilitation, facilities improvements, interchange improvements and bridge deck reconstruction. As of the date of this Official Statement, the 2008 CIP is approximately 96% completed and approximately 99% of the amounts budgeted for the projects that are part of the 2008 CIP have been spent or committed.

2019 Capital Improvement Program

In April 2019, the Authority adopted the 2019 CIP which consists of the design, supervision and construction of multiple capital improvement projects on both the Turnpike and the Parkway. The projects in the 2019 CIP originally included several bridge deck improvements on both roadways, the shoulder expansion and reconstruction of the Parkway between mileposts 30 and 35, and the replacement of the hybrid changeable message signs on the Turnpike. Recently, the size of the 2019 CIP was increased from $500 million to $673 million, due in part to increased spending on projects originally approved in 2019, as well as the addition of the remaining costs of the repair and rehabilitation of major bridges crossing the Passaic River on both the Turnpike and the Parkway, and various improvements to service areas located on both the Turnpike and the Parkway. Those projects were previously funded by the Authority from its revenues. The 2019 CIP includes the following categories of estimated expenditures: $540,419,000 for construction, $69,400,000 for design, and $63,038,000 for construction supervision. The estimated total cost of the 2019 CIP and the estimated cost of each individual project included in the 2019 CIP are subject to change based upon varying economic conditions and other factors which may occur during the term of the 2019 CIP. In addition, the projects included in the 2019 CIP are also subject to change at the discretion of the Authority. To date, the 2019 CIP has been proceeding under the budget. As of the date of this Official Statement, approximately 66% of the amounts budgeted for the projects that are part of the 2019 CIP have been spent or committed.

2021-2025 Capital Improvement Program

At its May 27, 2020 meeting, the Board of Commissioners of the Authority adopted the 2020 Long-Range Capital Plan. The 2020 Long-Range Capital Plan contains projects geared toward enhancing safety, repairing degraded infrastructure and ensuring roadway resiliency and sustainability to enhance mobility. The costs of the projects listed in the 2020 Long-Range Capital Plan are estimated at $24 billion and the Projects are estimated to be completed over the next 15 to 20 years.

Based upon the 2020 Long-Range Capital Plan, the Authority has developed the 2021-2025 CIP which includes projects focused primarily on capacity enhancements on the Turnpike and the Parkway, bridge preservation and security, and drainage, roadway lighting and other improvements, including non-roadway technology improvements. The 2021-2025 CIP includes the following categories of estimated expenditures: $3,270,835,000 for construction, $821,174,000 for design, and $420,500,000 for construction supervision. The estimated total cost of the 2021-2025 CIP and the estimated cost of each individual project included in the 2021-2025 CIP are subject to change based upon varying economic conditions and other factors which may occur during the term of the 2021-2025 CIP. In addition, the projects included in the 2021-2025 CIP are also subject to change at the discretion of the Authority. As of the date of this Official Statement, less than 1% of the amounts budgeted for the projects that are part of the 2021-2025 CIP have been spent or committed. The 2021-2025 CIP is intended to be the first of a series of 5-year rolling capital improvement programs which the Authority anticipates adopting in order to complete the 2020 Long-Range Capital Plan.

Funding of Capital Improvement Programs

The Authority anticipates issuing one or more additional Series of Non-Refunding Bonds under the Resolution from time to time to fund the Costs of Construction of various Projects for the Turnpike

System, including Projects in the 2019 CIP, the 2021-2025 CIP and the 2020 Long-Range Capital Plan. See "SECURITY FOR THE BONDS – Additional Indebtedness" herein. The current toll rates which became effective on September 13, 2020 on both the Turnpike and the Parkway, as such tolls are further increased annually by 3% commencing on January 1, 2022 pursuant to annual indexing, were designed to provide the Authority with sufficient Net Revenues to permit the Authority to issue additional Bonds under the Resolution to fund the 2020 Long-Range Capital Plan. See "SECURITY FOR THE BONDS – Toll Covenant", "SECURITY FOR THE BONDS – Additional Indebtedness", "THE AUTHORITY – Certain Powers" and "THE AUTHORITY – Existing Toll Rates and Schedule" herein and APPENDIX B – "2020 DRAW DOWN LETTER AND SUPPLEMENT, AND REPORT OF TRAFFIC ENGINEER" hereto.

Other Capital Improvement Projects

At its July 25, 2017 meeting, the Board of Commissioners of the Authority authorized (i) the creation of a new account within the Construction Fund established under the Resolution and the funding of such account in the years 2019 through 2022 with a portion of the aggregate cash flow savings to the Authority in such years as a result of the issuance of the Authority's Turnpike Revenue Bonds, Series 2017 B, the proceeds of which were used to refund and defease certain previously Outstanding Bonds of the Authority, and (ii) the use of the amounts on deposit in such new account to fund the costs of various capital projects of the Authority which are not included in any capital improvement program, including the repair and rehabilitation of major bridges crossing the Passaic River on both the Turnpike and the Parkway. As described above, in 2020, the Authority expanded the 2019 CIP to include the remaining costs of the repair and rehabilitation of those Passaic River bridges and those projects are no longer being funded from revenues on deposit in the new account created in the Construction Fund.

Summary of Historical Operations

The Turnpike

Table 1(a) sets forth the annual traffic usage for passenger car, commercial, and non-revenue vehicles on the Turnpike for the 10 year period ending in 2019. Table 1(b) details the annual toll revenues from passenger cars and commercial vehicles on the Turnpike during the same 10 years.

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Table 1(a) – Turnpike – Number of Vehicles (000s)*

Year	Passenger Cars	Commercial Vehicles(1)	Non-Revenue Vehicles(2)	Total Vehicles
2010	205,687	29,395	1,771	236,853
2011	203,626	29,602	1,417	234,645
2012	194,508	28,633	1,437	224,578
2013	195,208	29,278	1,504	225,990
2014	202,347	29,895	1,517	233,759
2015	215,358	31,239	1,558	248,155
2016	223,634	31,859	1,571	257,064
2017	227,978	32,687	1,559	262,224
2018	230,497	34,251	1,556	266,304
2019	233,454	34,318	1,333	269,105

* Totals may not add up due to rounding.

(1) Commercial vehicles include non-commuter buses.

(2) Non-revenue vehicles include commuter buses traveling during peak hours, towing operations, police, first aid responding to emergencies and employees traveling to and from work.

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Table 1(b) – Turnpike – Toll Revenues ($000s)			
Year	Passenger Car Revenues	Commercial Vehicle Revenues[1]	Total Toll Revenues
2010	446,045	227,848	673,893
2011	447,433	225,716	673,149
2012[2]	667,987	324,033	992,020
2013	672,828	333,893	1,006,721
2014	695,130	342,614	1,037,744
2015	745,007	361,261	1,106,268
2016	776,337	368,221	1,144,558
2017	780,181	371,557	1,151,738
2018	808,960	370,364	1,179,324
2019	816,271	360,205	1,176,476

(1) Commercial vehicles include non-commuter buses.

(2) Reflects a 53 percent toll increase on the Turnpike beginning January 1, 2012.

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The Parkway

Table 2(a) below sets forth the annual number of transactions for passenger car, commercial and non-revenue vehicles on the Parkway for the 10 years ending in 2019. Table 2(b) sets forth the annual toll revenues from the Parkway during the same period. Because tolls are collected solely at barriers and ramps, only the number of transactions is tracked; the number of vehicles is not.

Table 2(a) – Parkway – Number of Transactions (000s)*

Year	Passenger Cars	Commercial Vehicles(1)	Non-Revenue Vehicles(2)	Total Vehicles
2010	377,718	4,758	1,638	384,114
2011	373,058	4,833	1,113	379,004
2012	361,333	4,824	1,297	367,453
2013	363,863	5,054	1,543	370,460
2014	365,337	5,012	1,497	371,846
2015	374,092	5,192	1,476	380,760
2016	384,586	5,024	1,458	391,068
2017	387,787	5,109	1,532	394,428
2018(3)	384,509	5,282	1,566	391,357
2019(3)	381,110	5,640	1,575	388,325

* Totals may not add up due to rounding.

(1) Trucks are only allowed below Exit 105 (Eatontown) on the Parkway.

(2) Non-revenue vehicles include towing operations, police, first aid responding to emergencies and employees traveling to and from work. The amounts shown above represent non-revenue transactions recorded through E-ZPass only; non-revenue tickets were issued prior to 2006.

(3) Reflects conversion to one-way tolling at Interchange 145 in July 2018

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Table 2(b) – Parkway – Toll Revenues ($000s)			
Year	Passenger Cars	Commercial Vehicles[(1)]	Total Revenues
2010	267,642	10,631	278,273
2011	264,842	10,888	275,730
2012[(2)]	384,978	16,661	401,639
2013	390,296	16,746	407,042
2014	392,777	15,227	408,004
2015	400,910	15,955	416,865
2016	410,567	15,537	426,104
2017	412,423	15,735	428,158
2018	416,632	16,370	433,002
2019	418,854	16,938	435,792

(1) Truck traffic is only allowed below Exit 105 (Eatontown) on the Parkway.

(2) Reflects a 50 percent toll increase on the Parkway beginning January 1, 2012.

Service Areas and Concessions

There are 12 service areas on the Turnpike. Six of them are accessible by only southbound traffic, five by only northbound traffic and one by both north and southbound traffic. The service areas, which are open 24 hours a day, offer food, fuel and minor repair services, along with travel information, restrooms, automated teller machines and other conveniences. In addition, there are eight (8) service areas on the Parkway where food and fuel are sold and one (1) service area where only fuel is sold. Six of these full-service areas are accessible to north and southbound traffic, while one service area is available northbound only and one service area is available southbound only. The service area where only fuel is sold is accessible to only northbound traffic.

HMS Host, Inc. ("HMS" or "HMS Host") operates the food concessions at all 12 Turnpike service areas and 5 of the Parkway service areas. At its September 12, 2017 meeting, the Board of Commissioners of the Authority approved a contract with HMS Host relating to its operation of the food services facilities at the service areas on both the Turnpike and the Parkway (the "HMS Agreement"). The term of the HMS Agreement commenced on September 12, 2017 and will expire on September 11, 2044. HMS will provide food services at 17 of the Authority's 21 service areas. Pursuant to the HMS Agreement, HMS is required to invest at least $125,000,000 during the first seven years of the HMS Agreement to construct eight new restaurant buildings and refurbish and remodel six other existing restaurant buildings located at various service areas on the Turnpike and the Parkway. Additionally, HMS is also required to make a capital contribution of $1,000,000 per year for 25 years for the purpose of ongoing maintenance and capital improvements to the restaurant facilities at the service areas on the Turnpike and the Parkway. Under the first amendment to HMS Agreement, the Authority receives an annual fee from HMS that is the greater of: (i) a percentage of gross sales which begins at 12.75% and rises to 14.0% over the term of the HMS Agreement; or (ii) a minimum annual guaranteed fee, which is the greater of 88% of the rent in the previous year or a floor of $12,000,000. The effective date of the first amendment is December 31, 2019.

Sunoco, Inc. ("Sunoco") provides gasoline, diesel fuel and minor repair services at all Turnpike service areas and the 9 Authority owned Parkway service areas. At its September 12, 2017 meeting, the Board of Commissioners of the Authority also approved a contract with Sunoco relating to its operations at service areas on both the Turnpike and the Parkway (the "Sunoco Agreement"). The term of the Sunoco Agreement commenced on September 12, 2017 and will expire on December 31, 2042. Pursuant to the Sunoco Agreement, Sunoco is required to invest at least $90,000,000 during the first seven years of the Sunoco Agreement to, among other things, build two new convenience stores, refurbish its fuel service facilities, and refurbish and remodel all of its existing convenience stores located at various service areas on the Turnpike and the Parkway. Additionally, Sunoco is also required to make a capital contribution of $500,000 per year for 25 years for the purpose of ongoing maintenance and capital improvements to the fuel service and convenience store facilities at the service areas on the Turnpike and the Parkway. Under the Sunoco Agreement, the Authority receives an annual fee from Sunoco which is the greater of: (i) $0.1025 per gallon of fuel sold; or (ii) a minimum annual guaranteed fee which is $14,000,000 in the first five years of the agreement and increases to approximately to $18,000,000 during the final five years of the Sunoco Agreement.

The remodeling and refurbishing of the service areas is being done in phases. The first phase was successfully completed in summer of 2019, which included the Thomas Edison, Monmouth, Alexander Hamilton and Brookdale North services areas. The second phase was started in September 2019 and was successfully opened to public in the summer of 2020. This phase included remodeling of the Vince Lombardi, Forked River and Richard Stockton services areas. In March and April 2020, the Authority entered into a Memoranda of Understanding (MOU) with HMS, which authorized the Authority to make direct payments to contractors in an amount not to exceed $40,000,000 to allow timely completion of the remodeling work in phase two. The MOU was a result of the COVID-19 impact on the HMS's revenue. The MOU also requires HMS to repay the funds to the Authority in eighteen monthly installments commencing on February 10, 2021, although HMS has the right to accelerate the payments into 12 equal monthly installments. In December 2020, the MOU was amended to increase the limit on the Authority's direct payments to $50,000,000 to complete the phase two work and to update the terms of repayment by HMS. Phase three of the remodeling and refurbishing of the service areas is expected to start in 2021 and include work related to the Woodrow Wilson, Molly Pitcher, Joyce Kilmer, Walt Whitman and James Fennimore Cooper service areas. All the remodeling and reconstruction work is expected to complete approximately by 2025.

In addition to the Authority owned service areas, PMG New Jersey II ("PMG") operates one fueling station and convenience store on its property in Colonia, New Jersey, which abuts the Parkway northbound at approximately milepost 133.6, and one fueling station and convenience store on its property in Iselin, New Jersey, which abuts the Parkway southbound at approximately milepost 132.7. On June 18, 2014, the Authority and PMG entered into an agreement whereby PMG remits to the Authority fifteen thousand dollars ($15,000) per month related to PMG's operation of its facilities that have direct access to the Parkway. The initial term of the agreement ended on December 31, 2016 and it renews automatically every three (3) years thereafter for consecutive three (3) year renewal terms. The first renewal term began on January 1, 2017, as neither party terminated the agreement for cause. During each renewal term, the monthly fee increases by three percent (3%) over the fee due in the initial term or prior renewal term, as applicable.

133 Colonia, L.L.C. operates one fueling station on its property in Colonia, New Jersey, which abuts the Parkway northbound at approximately milepost 133.6. 82 Iselin, L.L.C., operates one fueling station on its property in Iselin, New Jersey, which abuts the Parkway southbound at approximately milepost 132.7. On July 23, 2015, the Authority entered into an agreement with 133 Colonia, L.L.C. and 82 Iselin, L.L.C. to operate a convenience store on each of their properties. The initial term of the agreement ends on the last day of the 96th month after the Authority begins receiving the fees which are

due and payable to the Authority under the terms of the agreement. The agreement renews automatically every eight (8) years thereafter as provided in the agreement. Pursuant to the agreement, 133 Colonia, L.L.C. and 82 Iselin, L.L.C. will each pay the Authority $5,000 per month when the stores are operational. The store owned by 133 Colonia, L.L.C. opened in January 2019 and the Authority began receiving payment of its fees in May 2019. The store owned by 82 Iselin, L.L.C. opened in May 2018 and the Authority began receiving payment of its fees in January 2019. During each renewal term, the monthly fee increases by six percent (6%) over the fee due in the initial term or prior renewal term, as applicable.

Gross revenues received by the Authority from all Turnpike service areas in 2019 were $23,296,000. Gross revenues received by the Authority during 2019 from all service areas on the Parkway were $9,808,000.

E-ZPass Fees

The Authority utilizes an electronic toll collection system to collect a majority of its toll revenue. The Authority is part of the New Jersey E-ZPass Group (the "NJ E-ZPass Group"), which includes the Authority, the South Jersey Transportation Authority, the Delaware River Port Authority, the Delaware River & Bay Authority, the Burlington County Bridge Commission, and the Delaware River Joint Toll Bridge Commission. On December 6, 2016, the NJ E-ZPass Memorandum of Agreement ("MOA") became effective. The First Amendment to the MOA adds Cape May County Bridge Commission as a party to the MOA and became effective January 18, 2018. The MOA is an agreement between the agencies above clarifying their rights and responsibilities with respect to the terms and conditions of the contract with Conduent State & Local Solutions, Inc, formerly Xerox State & Local Solutions, Inc relating to the operation of the E-ZPass electronic toll collection system in the State. See "THE AUTHORITY – Electronic Toll Collection" herein. The NJ E-ZPass Group shares a main Customer Service Center (the "NJ CSC") located in Newark, New Jersey, in addition to smaller satellite service centers that are a part of the NJ CSC. The Authority is the lead agency for the NJ E-ZPass Group and is primarily responsible for the group's financial and operational decisions. The NJ E-ZPass Group is part of the regional E-ZPass Group which currently extends from Maine to Florida and as far west as Illinois. In 2019, over 86.9% of the Turnpike's transactions and over 84.7% of the Parkway's transactions were processed electronically. Customers of the NJ CSC can use their E-ZPass account anywhere E-ZPass is accepted.

The Authority receives fees and other related income from the operation of E-ZPass system on the Turnpike and the Parkway. In 2019, total E-ZPass fee revenue was $80,329,000, as further discussed below.

Monthly membership fees of $1.00 are assessed on account holders to help offset the cost of operations. In 2019, the Authority's portion of the membership fees was approximately $25,232,000. Included with the account, customers receive account statements every other month. The NJ CSC also allows customers to receive monthly statements for a fee of $6.00 per year. In 2019, the Authority received $1,912,000 in statement fees.

Vehicles passing through a toll lane without paying the full toll due are treated as violators and, in addition to the toll due, are assessed an administrative fee designed to offset the increased collection costs. The current Administrative Fee is $50.00 per violation on the Turnpike. Up to four violations can be included on notices sent to Parkway violators for the same $50.00 fee. The Authority collected administrative fees of $47,982,000 in 2019

Several parking authorities accept E-ZPass transponders as payment. The NJ CSC charges these authorities transaction fees to offset the costs of maintaining the customer accounts for this convenience. In 2019 the Authority recorded $540,000 in parking fee revenue.

Other fees associated with the E-ZPass system include tag sales to business customers, bad check fees, interest income on deposits and damaged and returned tag fees. These fees amounted to $4,662,000 in 2019.

Miscellaneous Revenues

The Authority maintains contracts with several major telecommunications carriers that permit the carriers to construct, install, operate and maintain cellular towers at various locations along the Authority's right-of-way. This provides state of the art communications capability for the Authority, its patrons and others. The Authority may install its own radio transmitting and receiving equipment in the same locations. In 2019, the Authority received rent of $5,891,000 for these sites.

The Authority and the South Jersey Transportation Authority (SJTA) own, operate, and maintain a fiber system on their respective right-of-ways. The Authority's fiber system runs along the New Jersey Turnpike and Garden State Parkway. SJTA's fiber system runs along the Atlantic City Expressway. The fiber system is used to transmit radio, voice, video and data, supporting day-to-day operations. The excess capacity of this network is leased to various commercial enterprises. In 2019, the Authority received $1,816,000 from these leases.

A separate fiber optic network is located along the Parkway right-of-way. The excess capacity of this network is leased to various communications companies. The revenue produced from these leases in 2019 was $1,676,000

Under an agreement between the Authority and NJ Transit, NJ Transit operates the park/ride facility at the Vince Lombardi Service Area on the Turnpike in Ridgefield Park. The Authority also contracts with Academy Bus to operate the park/ride facility off Interchange 8A on the Turnpike in Cranbury and a parking lot at the Garden State Arts Center. In 2019, the Authority received revenues totaling $707,000 for these parking facilities.

The Authority allows billboards to be operated at several locations along the Turnpike and Parkway. In April 2010, the Authority awarded a contract to Allvision Inc. to manage the Authority's billboard assets. Pursuant to this award, Allvision Inc. is marketing the Authority's billboard assets and upgrading several sites to digital billboards. In 2019, the Authority received rent payments of $1,254,000 for the sites located along the roadways.

In 2019, the Authority received $1.2 million for the Delaware River Turnpike Bridge insurance claim. Additionally, in 2019 the Authority also received $1.0 million in disaster recovery funds from the Federal Emergency Management Agency (FEMA) related to Winter Storm Quinn (2018).

Arts Center

The PNC Bank Arts Center (the "Arts Center") is an entertainment facility located in the Telegraph Hill Nature Area, a 400-acre recreational tract along the Parkway in Holmdel. The facility, which opened in 1968, plays host to major touring performers.

The Arts Center is owned by the Authority and leased to a private operator, Live Nation Worldwide, Inc. ("Live Nation"). The term of the Authority's current lease agreement with Live Nation (the "Lease") commenced on January 1, 2018 and ends on December 31, 2042. The annual rent payable to the Authority by Live Nation under the Lease is the greater of (i) 10.5% of the gross revenues of the operation of the Arts Center, or (ii) a minimum annual guaranteed rent of $2,940,507, which amount increases by 2.5% every four years, commencing in the 5th year of the Lease, and ultimately rises to $3,326,914 during the final five years of the Lease. The Lease also requires Live Nation and the Authority to each contribute $11,000,000 to reconstruct and renovate the Arts Center, with Live Nation making its contribution in four equal annual installments of $2,750,000 by no later than March 1 in each of the years 2018 through 2021. On August 27, 2019, the agreement was amended. As per the amended agreement, the tenant makes an additional contribution of $4,000,000 payable in equal installments of $2,000,000 on September 1, 2019 and September 1, 2020. The $15,000,000 payments by Live Nation are considered advanced payments of rent revenue and are being recognized over the life of the lease. To the extent that the costs of reconstructing and renovating the Arts Center exceed $30,000,000, the Authority is responsible to pay the first $500,000 of such costs overages, with all costs overages above $500,000 being shared equally between the Authority and Live Nation. In addition to Live Nation's $15,000,000 contribution to reconstruct and renovate the Arts Center, the Lease also requires Live Nation to make annual deposits of the lesser of $300,000 or 0.5% of annual gross revenues into a capital improvement fund, which shall be used to fund capital improvements to the Arts Center. All amounts remaining in the capital improvement fund at the end of the term of the Lease will belong to the Authority. Under the Lease, the Authority and Live Nation agree to share equally (50% each) the proceeds to be received from any future naming/sponsorship agreement relating to the Arts Center.

In April 2020, the Authority and Live Nation amended the Lease to defer a rental payment from March 2020 to December 2020 and to increase the minimum percentage rent from 10.5% to 13.5% for 2020, up to a maximum not to exceed amount of $1,176,203. The amendment to the Lease also provides that after 2020, the Lease shall revert to the original financial terms for the minimum percentage rental amount set forth in the Lease, subject to the approval of the Authority's Board of Commissioners.

Under a separate agreement (the "Sponsorship Agreement"), which was amended and restated in January 2019, PNC Bank, National Association ("PNC Bank") pays the Authority $922,708 per year for the naming and marketing rights to the Arts Center. Furthermore, PNC agreed to pay a Cultural Activity Contribution of $75,000 in the years 2019 and 2020 if all conditions of the contract are being delivered in an acceptable manner to the Sponsor. This agreement was scheduled to expire on October 31, 2020. On September 30, 2020, the Authority and PNC Bank entered into a termination agreement which required the Authority to refund $722,708 of the 2020 annual payment. On December 8, 2020, the Authority entered into the Second Restated Sponsorship Agreement with PNC Bank, which has a five year term ending on October 31, 2025, with an additional 1-year renewal period. This agreement increased the sponsorship fee payable by PNC Bank to $1,316,236 per year. Additionally, PNC Bank is also required to pay a Cultural Activity Contribution of $75,000 for each year of the agreement. Lastly, prior to the expiration of the agreement, PNC Bank and the Authority are obligated to commence a 180-day exclusivity period to negotiate a new Sponsorship Agreement, in accordance with the current renewal terms of the agreement.

As of December 2004, the Arts Center became part of the Turnpike System for purposes of the Resolution and revenues received by the Authority from the Arts Center (other than revenues received pursuant to the Sponsorship Agreement) became Pledged Revenues under the Resolution and the expenses, if any, incurred by the Authority in connection with the operation of the Arts Center became Operating Expenses of the Turnpike System for purposes of the Resolution.

The Authority received $4,690,000 in gross revenues from the Arts Center in 2019.

Organization

The Authority budgeted for 2,125 full-time employees for 2020. In addition to the full-time workforce, the Authority also employs part-time and temporary employees. There were 504 part-time and 90 temporary employees as of December 31, 2019.

On October 19, 2020, the Authority announced a reorganization resulting in the Operations Department merging with the Maintenance Department and the Patron Services Department. The Operations Department is now comprised of two divisions, the Traffic Division which is the former Operations Department and the Maintenance Division, which is the former Maintenance Department. The former Patron Services Department is now a section of the Traffic Division. In addition to the

Operations Department, the other departments of the Authority include Executive, Finance and Budgets, Information Technology Services, Human Resources, Community and Government Relations, Procurement and Materials Management, Law, Internal Audit, Engineering and Toll Collection.

There are eight negotiating units representing different classifications of full-time Authority employees. These eight unions represent approximately 96% of the Authority's full-time workforce. The labor contracts for seven of the unions expired on June 30, 2019 and one contract expired on September 30, 2019. The Authority is currently in negotiations with all the unions. While these negotiations are ongoing, on November 20, 2020, broad terms of successor contracts were agreed to and memorialized through a joint Memorandum of Agreement (MOA) between the Authority and five of the unions. After the final terms are agreed to, the MOA provides for contracts which will expire on June 30, 2023. Simultaneous to this MOA, one of the five unions reached agreement on all terms of the successor contract. Under New Jersey public sector labor law, union employees are not permitted to strike but all terms and conditions of expired collective negotiations agreements remain in place until new agreements are agreed upon. In addition, there are three negotiating units representing different classifications of part-time toll collectors. Each of these three contracts expired on June 30, 2019. The bargaining units, along with the status of their collective negotiation agreements, are as follows:

- Local 97 Teamsters Industrial and Allied Workers Union, AFL/CIO represents office, clerical, and technical employees in the Administrative departments and in Parkway maintenance and Parkway tolls. The term of this agreement was November 1, 2011 through October 31, 2017. The term of this agreement had been extended through June 30, 2019.

- Local 193 International Federation of Professional and Technical Engineers ("IFPTE") represents Parkway Toll Supervisors. The term of this agreement is October 1, 2011 through September 30, 2019.

- Local 193C IFPTE represents Parkway Crew Supervisors. The original term of this agreement was July 1, 2007 through June 30, 2011. The term of this agreement had been extended through June 30, 2019.

- Local 194 IFPTE represents Turnpike toll collection and Turnpike maintenance employees. Local 194 IFPTE also represents office, clerical and technical employees in Administrative departments and in Turnpike maintenance and Turnpike tolls. The term of this agreement is from July 1, 2019 through June 30, 2023.

- Local 194 IFPTE Part-Time Toll Collectors represents Turnpike part-time toll collectors. The original term of this agreement was October 27, 2007 through October 31, 2011. The term of this agreement had been extended through June 30, 2019.

- Local 196 Chapter 1 IFPTE represents Parkway toll collectors and Parkway maintenance employees. The original term of this agreement was July 1, 2007 through June 30, 2011. The term of this agreement had been extended through June 30, 2019. Negotiations are continuing, however, a MOA outlining a new term from July 1, 2019 through June 30, 2023 was entered into on November 20, 2020.

- Local 196, Chapter 12 IFPTE represents Parkway Craftspersons. The original term of this agreement was January 1, 2008 through December 31, 2011. The term of this agreement had been extended through June 30, 2019. Negotiations are continuing, however, a MOA outlining a new term from July 1, 2019 through June 30, 2023 was entered into on November 20, 2020.

- Local 196 IFPTE Senior Citizen Toll Collectors represents Parkway senior citizen toll collectors. The original term of this agreement was July 1, 2007 through December 31, 2013. The term of this agreement had been extended through June 30, 2019.

- Local 196 IFPTE Part-Time Toll Collectors represents Parkway part-time toll collectors. The original term of this agreement was July 1, 2011 through June 30, 2011. The term of this agreement had been extended through June 30, 2019.

- Local 200 IFPTE represents Turnpike Toll and Turnpike Maintenance supervisory employees as well as administrative supervisory employees. The original term of this agreement was September 24, 2011 through October 4, 2015. The term of this agreement has been extended through June 30, 2019. Negotiations are continuing, however, a MOA outlining a new term from July 1, 2019 through June 30, 2023 was entered into on November 20, 2020.

- Local 3914, American Federation of State, County and Municipal Employees ("AFSCME") represents low to mid-level managers and the attorneys in the Law Department of the Authority. The original term of this agreement was July 1, 2011 through June 30, 2017. The term of this agreement had been extended through June 30, 2019. Negotiations are continuing, however, a MOA outlining a new term from July 1, 2019 through June 30, 2023 was entered into on November 20, 2020.

As noted above, on November 20, 2020, the Authority entered into a MOA with Local 196, Chapter 1 IFPTE, Local 196, Chapter 12 IFPTE, Local 200 IFPTE and Local 3914 AFSCME outlining a new term for each respective agreement that will run through June 30, 2023. In accordance with the MOA, during the new term certain wage increases will be granted by the Authority and a new health benefit plan with revised employee contribution levels will be offered. The wage increases will be 2% effective 7/1/19, 0% effective 7/1/20, 2% effective 7/1/21, 2% effective 1/1/22 and 2% effective 7/1/22. A new direct access health benefit plan will also be offered which is expected to result in savings to the Authority. Those employees choosing this plan will contribute a percentage of their salary which is lower than the contributions for the other available plans. Enrollment in the current direct access plan was frozen as of January 1, 2021.

Pension and OPEB Obligations

Authority employees belong to the Public Employees' Retirement System ("PERS"), an actuarially funded pension system operated by the State of New Jersey. Each employee contributes to PERS based on a percentage of the employee's salary. Employees are enrolled in PERS upon commencement of employment with the Authority. The Authority makes an annual contribution to PERS in an amount determined by the New Jersey Division of Pensions and Benefits. In 2019, the amount billed to local employers was 100% of the Actuarially Determined Contribution (ADC) as determined by the New Jersey Division of Pensions and Benefits actuaries. P.L. 2011, c.78, effective June 28, 2011, increased the active member contribution rates from 5.5% of annual compensation to 6.5% plus an additional 1% phased in over seven years. The payment of automatic cost-of-living adjustments (the "COLA") additional increases to current and future retirees and beneficiaries was suspended. COLA increases may be reactivated at a future date as permitted by this law. Please see Note 11 in the financial statements of the Authority included as Appendix A to this Official Statement for additional information regarding pension benefits. Set forth below are the contractually required contributions made by the employees of the Authority and the Authority itself during the fiscal years ending December 31, 2015 through and including December 31, 2019:

	2015	2016	2017	2018	2019
Employee Contributions	$ 9,089,000	$ 9,271,000	$ 9,478,000	$ 9,745,000	$ 10,498,000
Employer Contributions	16,661,000	16,841,000	17,450,000	18,469,000	17,789,000
Total Contributions	$ 25,750,000	$ 26,112,000	$ 26,928,000	$ 28,214,000	$ 28,287,000

The Authority provides medical, prescription drug, vision, dental and Medicare Part B reimbursement to retirees and their covered dependents, in accordance with the terms of the applicable collective bargaining agreements or Authority personnel policies for non-bargaining unit members. The Authority maintains a single-employer, self-funded health plan administered by third party claims administrators. All active employees who retire from the Authority and meet the eligibility criteria will receive these benefits. As required by P.L. 2011, c.78 mandated by the State, retirees with less than twenty years of service as of June 28, 2011 will contribute towards health benefits in retirement.

The Authority currently funds for the cost to provide postemployment benefits on a pay-as-you-go basis. The Authority establishes and has the power to amend benefits and contribution obligations, subject to collective bargaining agreements to the extent they do not conflict with P.L. 2011, c.78 mandated by the State.

The Authority adopted GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (GASB 75) in 2018. This statement addresses accounting and financial reporting for other postemployment benefits (OPEB) that are provided to the employees of state and local governmental employers. GASB 75 establishes standards for recognizing and measuring liabilities, deferred outflows of resources, deferred inflows of resources, and expenses related to OPEB in the basic financial statements, in addition to requiring more extensive disclosures and required supplementary information.

As a result of the implementation of GASB 75, beginning unrestricted net position as of January 1, 2018 was decreased by $1,059,526

The following table shows the changes in the total OPEB liability as of January 1, 2018:

	Total OPEB Liability (In Thousands)
Balance as of December 31, 2017	$ 494,098
Cumulative effect on opening net position	1,059,526
Deferred Outflow - subsequent contributions	42,933
Balance at January 1, 2018	$ 1,596,557

The following table shows the changes in the total OPEB liability as December 31, 2018 and December 31, 2019:

	2019	2018
	(In Thousands)	
Balance at January 1	$ 1,740,913	$ 1,596,557
Changes for the year:		
Service Cost	46,612	42,623
Interest	60,701	61,150
Difference between expected and actual experience in the total OPEB liability	(23,098)	89,887
Changes in assumptions or other inputs	(176,958)	(6,371)
Benefit payments, including refunds of member contributions	(45,901)	(42,933)
Net changes	(138,644)	144,356
Balance at December 31	$ 1,602,269	$ 1,740,913

The Authority has received a draft actuarial report regarding its estimated OPEB liabilities as of December 31, 2020 from its actuary. The actuarial report estimates an increase in the Authority's unfunded OPEB liability at December 31, 2020 of approximately 10%, as compared to December 31, 2019. The increase is due to a number of factors, including primarily a change in the discount rate from 4.10% to 2.70%. This estimate of the increase in the unfunded OPEB liability at December 31, 2020 is subject to change, as the draft actuarial report will not be finalized until the completion of the audit of the Authority's financial statements as of and for the year ended December 31, 2020.

Please see Note 12 in the financial statements of the Authority included as Appendix A to this Official Statement for additional information regarding the Authority's postemployment benefits.

Public Safety

Patrol services for the Authority are provided by approximately 370 to 390 troopers who are members of Troop D of the New Jersey State Police. The members of Troop D are employees of the State. The Authority makes payments to the State for the patrol services they provide. The Authority pays for the compensation and the maintenance of the troopers, the pension and FICA taxes, other reimbursable costs as well as other fringe benefits which includes payments for health benefits, worker's compensation and unemployment. The amount paid to the State for those services in 2019 was $77,291,000. In addition to these direct payments, the Authority is also responsible for the purchase of vehicles and equipment used by the Troop D members. Starting 2020, the troopers are also provided with the body cameras by the Authority.

Budget Procedures

The Authority's annual budget provides the basis for expenditures during the year. The Authority operates on a calendar-year basis. Not fewer than 40 days before the end of the year, the Authority must submit a preliminary budget of operating expenses and reserves to the Trustee as required by the Resolution. The budget is subject to the Trustee's examination, and the Authority is required to comply with all reasonable requests from the Trustee for classifications and clarifications. The Resolution also specifies that each annual budget must include funding for operating expenses and reserves and provisions for deposits to the Maintenance Reserve Fund and the Special Project Reserve Fund. The preliminary budget and the annual budget may provide additional information, as the Authority may determine, and each shall contain a certificate of the Consulting Engineer approving the preliminary budget and the annual budget, as the case may be.

The annual budget must be adopted by the Commissioners of the Authority by January 15th of each fiscal year and made a part of the Authority's minutes. In the event that the Authority does not adopt an annual budget by January 15th of the fiscal year or the Governor vetoes the adopted budget, the preceding year's budget remains in effect until such adoption and approval. The minutes of all meetings are subject to a 10-day review and veto period by the Governor of the State of New Jersey prior to final approval. The adoption and approval of the annual budget does not in itself authorize any specific expenditure. Specific expenditures must be submitted, adopted and approved under the Authority's adopted procedure and must be consistent with the statutory, contractual and other commitments of the Authority, including agreements with the holders of its obligations, including bonds. Adoption and approval of the annual budget does not limit or preclude the Authority from submitting an amended budget to the Commissioners for adoption. Copies of the annual budget and all amendments must be filed promptly with the Trustee. If at any time the annual budget and amendments thereto exceed the preliminary budget by 10% or more, the Authority must file a detailed report with the Trustee, stating specifically the reason for the increase, and hold a public hearing thereon.

Although the Authority is restricted from expending funds in excess of the annual budget allocation for operating expenses (other than through amendment to the annual budget), the Authority may allocate additional funds for operating expenses if such funds are obtained from sources other than Pledged Revenues.

Electronic Toll Collection

An electronic toll collection system (the "ETC System") became operational on the Parkway in December 1999 and on the Turnpike in September 2000. The ETC System allows users to pay tolls at toll collection facilities without stopping to exchange tickets or money. The ETC System uses various electronic sensors and other equipment to automatically detect, profile and classify a vehicle. With the use of on board vehicle transponders linked to customer accounts and readers in toll lanes, this system allows the Authority to seamlessly record and charge toll transactions, making errors less likely while allowing for real-time traffic management. The Authority is one of many tolling agencies in 18 eastern United States from Maine to Florida and as far west as Illinois. E-ZPass Group members use similar technology and standardized protocols allowing them to accept other members' customers under the E-ZPass brand of Electronic Toll Collection. For the fiscal year ended December 31, 2019, approximately 86.9% of the toll transactions on the Turnpike and approximately 84.8% of the toll transactions on the Parkway were processed through the ETC System.

At its September 29, 2015 meeting, the Board of Commissioners of the Authority along with the South Jersey Transportation Authority ("SJTA"), the Delaware River Port Authority ("DRPA"), the Delaware River & Bay Authority ("DRBA"), the Delaware River Joint Toll Bridge Commission ("DRJTBC") and the Burlington County Bridge Commission ("BCBC") awarded a contract (the "Current E-ZPass Agreement") to Xerox State & Local Solutions (Xerox) based upon its proposal submitted in response to an RFP issued in January 2015.The First Addendum to the Current E-ZPass Agreement clarified the invoicing process under the Current E-ZPass Agreement. The Second Addendum to the Current E-ZPass Agreement extended the cut-over date of implementing certain upgrades to the customer service center from February 1, 2017 to July 17, 2017. This Second Addendum also provided for Xerox to provide payment and credit card processing. The Third Addendum to the Current E-ZPass Agreement extended the cut-over date to October 16, 2017. The Fourth Addendum to the Current E-ZPass Agreement clarified the responsibilities of the contractor to meet certain timeline and performance goals and prescribed penalties for failing to achieve the goals. The Fifth Addendum to the Current E-ZPass Agreement includes Cape May County Bridge Commission ("CMCBC") in the term "Agencies" and includes the newly added agency in the invoicing allocations outline in the First Addendum. On January 3, 2017, Xerox split into two separate companies. The contract to operate the New Jersey E-ZPass was assigned to Xerox State & Local Solutions D/B/A Conduent ("Conduent"). As of the Third Addendum to the Current E-ZPass Agreement, the "Contractor" is referred to as Conduent State & Local Solutions, Inc. (Formerly Xerox State & Local Solutions, Inc.) The Current E-ZPass Agreement with Conduent has an operating period of eight (8) years beginning February 1, 2017 with an option to extend the contract and the operating period for one, 2-year term at the Authority's discretion. Relative to the E-ZPass contract with Conduent, in 2016, the Authority and the other agencies (SJTA, DRPA, DRBA, DRJTBC and BCBC) forming the New Jersey E-ZPass Group entered into a Memorandum of Agreement which established the rights and responsibilities of each agency and designated the New Jersey Turnpike Authority as the lead agency. In 2018, a First Amendment to such Memorandum of Agreement was entered into which admitted CMCBC into the New Jersey E-ZPass Group.

The Authority is responsible for paying approximately 76% of all amounts due and owing to Conduent under the Current E-ZPass Agreement. The remaining 24% is shared by SJTA, DRPA, DRBA, DRJTBC, BCBC and CMCBC. Payments required to be made by the Authority under the Current E-ZPass Agreement constitute Operating Expenses of the Turnpike System under the Resolution and are payable from Pledged Revenues prior to the deposit of Pledged Revenues into the Debt Service Fund to pay Debt Service on the Bonds.

Manual Toll Collection

The Toll Collection Department of the Authority manages the collection of cash tolls on both the Turnpike and the Parkway. Administrative personnel in the Toll Collection Department include eight directors or managers, four supervisors and three support staff/clerical. The administrative staff is responsible for developing procedures for collecting toll revenues and ensuring that the toll plazas are safe for motorists and for the Authority's field staff.

The Turnpike

The Turnpike has 30 interchanges connecting the roadway with major traffic arteries, cities and transportation centers. Toll collection at the interchanges is managed and operated by 204 full-time and 384 part-time toll collectors (294 – 16 hour toll collectors and 90 – 20 hour toll collectors), 93 supervisors, 8 interchange managers, 2 assistant division managers, 1 Field Operations Manager and 4 clerks. The Authority's Integrated Technology Services Department is responsible for maintaining the Turnpike's manual toll equipment.

Except for two cash toll barriers (at Interchanges 6A and 17) and a cashless tolling system gantry (Interchange 19W), toll collection on the Turnpike is done through a closed system: Drivers take tickets when they enter the roadway and return the tickets with their payment when they exit. (The State Legislature has directed that tolls are not collected on the I-95 extension; thus, that section of the roadway is not part of the closed toll system.) All tickets are processed through a computerized toll system that imprints them with interchange number, date, time of entry, lane number, class of vehicle, and toll collector identification information. As drivers enter the Turnpike, they drive over treadles that record the number of axles on their vehicles. As they exit, the time is imprinted on their tickets, and they drive over treadles once again and pass through an Automatic Vehicle Classification system. The axle count, tickets, revenues and Automatic Vehicle Classifications are reconciled daily by the Finance and Budget Department of the Authority.

The Parkway

Cash toll collection along the Parkway's 50 barriers and ramps is managed and operated by 147 full-time and 100 part-time toll collectors, 60 plaza and assistant plaza supervisors, 5 area managers and 2 clerks. The Authority's Integrated Technology Services Department is responsible for maintaining the Parkway's manual toll equipment and automatic coin machines.

The collection of cash tolls on the Parkway is done through an "open" system: drivers pay a set toll at barriers and ramps along the roadway. The tolls vary by vehicle class determined by number of axles. Automatic coin machines are also used to collect cash tolls at Parkway ramps.

Control Procedures

The cash and tickets are collected from the interchanges, plazas and ramps by armored car. Tickets are delivered to the Turnpike Administration Building and the cash is counted and deposited to a designated toll revenue bank account.

The Authority's Finance Department audits manual, automatic and E-ZPass transactions to ensure the proper credit and handling of funds. Toll collectors, the ETC System and bank tellers and interchanges are monitored for variances in vehicle classification, axle count, transaction count and expected revenue.

Collector variances over a certain threshold are reported to senior Toll Collection management and/or the Internal Audit Department for possible re-training, counseling, discipline or legal action. Additionally, bank errors or shortages are reported to the bank to ensure proper credit of funds. Either periodically, or upon request from the Finance Department, the Internal Audit Department makes a site visit to the bank to monitor and review banking control procedures.

Existing Toll Rates and Schedule

The Authority increased toll rates by 36% on the Turnpike and 27% on the Parkway effective as of September 13, 2020, which were the first toll increases on the Turnpike or the Parkway since 2012. The Authority's resolution approving those toll increases also contains an annual indexing provision providing that, commencing on January 1, 2022 and continuing annually thereafter, the tolls on the Turnpike and the Parkway shall be further increased in an amount to be determined annually, provided that any such increase shall not exceed three percent (3%) per year. The increased toll rates that became effective on the Turnpike and the Parkway on September 13, 2020, together with the annual indexing provision, are designed to provide the Authority with sufficient Net Revenues to permit the Authority to issue additional Bonds under the Resolution to fund the 2020 Long-Range Capital Plan. The projected toll revenues in the Report of the Traffic Engineer included in Appendix B to this Official Statement, the Authority's Long-Range Financial Plan (through 2025) set forth in the Authority's 2021 Annual Budget and the table of Projected Revenues, Expenditures and Debt Service on page 75 of this Official Statement assume that, commencing on January 1, 2022, the tolls on the Turnpike and the Parkway will be increased annually by 3% pursuant to the annual indexing provision of the above-mentioned resolution. See "SECURITY FOR THE BONDS – Toll Covenant", "THE AUTHORITY – Certain Powers" and "THE AUTHORITY – Capital Improvement Programs" herein and APPENDIX B – "2020 DRAW DOWN LETTER AND SUPPLEMENT, AND REPORT OF TRAFFIC ENGINEER" attached hereto.

In connection with the toll increases that became effective on September 13, 2020, the Authority reviewed the toll discounts it provided to buses. This review and analysis was initiated by the Authority after it became aware that its current toll discount policy for buses travelling on the Parkway may not comply with the provisions of the Federal-Aid Highway Act requiring that any over-the-road bus that serves the public must be provided access to the Parkway under the same toll rates, terms and conditions as public transportation buses. After completing its review and analysis, on September 13, 2020, the Authority implemented a uniform bus discount of 40 percent, called the Standard Bus Discount, which will be applicable to both private and public transportation buses travelling on the Turnpike and the Parkway. The Authority believes that this adjustment will not have a material adverse impact on its financial position.

The Turnpike

The Authority has increased tolls on the Turnpike eight times since its opening in 1951. The effective dates of those increases were March 23, 1975, April 1, 1980, March 17, 1991, September 30, 2000, January 1, 2003, December 1, 2008, January 1, 2012 and September 13, 2020. The Authority's resolution approving the most recent toll increases on the Turnpike also contains an annual indexing provision providing that, commencing on January 1, 2022 and continuing annually thereafter, the tolls on the Turnpike shall be further increased in an amount to be determined annually, provided that any such increase shall not exceed three percent (3%) per year. Additionally, a toll at the new interchange 19W on the Western Spur of the Turnpike was established in the most recent toll adjustments. With the exception of Interchanges 6A, 17 and 19W, tolls are collected by use of a closed-ticket system, with payment made at the point of exit. The toll rate is determined by distance traveled, class of vehicle, time of day, method of payment, and other factors.

As of September 13, 2020, passenger vehicles pay tolls averaging approximately 15.5 cents per mile for a full-length, peak period trip on the mainline Turnpike. The Authority offers discounted toll rates on the Turnpike based on time of travel, method of payment, type of vehicle, frequency of use, and other factors.

Table 3 depicts the current E-ZPass tolls for selected peak-period trips by class of vehicles for the Turnpike.

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Table 3 – Summary of Current Toll Rates on the Turnpike — E-ZPass, Peak Period

Trip	Passenger Cars	2-Axle Dual-Tire	3-Axle	4-Axle	5-Axle	6-Axle	2-Axle Buses
Delaware Memorial Bridge (Exit 1)							
NORTH TO:							
George Washington Bridge (Exit 18E/18W)	$ 18.85	$ 35.35	$ 44.15	$ 53.05	$ 61.80	$ 70.65	$ 21.20
Lincoln Tunnel (Exit 16E/16W)	17.05	31.95	43.80	50.65	60.85	70.65	19.15
Holland Tunnel (Exit 14C)	18.10	33.60	44.15	51.80	61.80	70.65	20.15
Lincoln Tunnel (Exit 16E/16W)							
SOUTH TO:							
Newark Airport (Exit 14)	2.90	5.85	7.20	16.05	10.55	12.30	3.50
Parkway (Exit 11)	7.00	12.30	17.40	20.40	24.00	28.10	7.40
New Brunswick (Exit 9)	8.85	16.30	21.75	25.50	31.00	35.70	9.80
Pennsylvania Turnpike (Exit 6)	13.95	25.50	34.20	40.05	48.35	55.70	15.30
Philadelphia-Camden (Exit 4)	13.20	24.90	33.95	39.70	47.45	55.00	14.95
Holland Tunnel (Exit 14C)							
SOUTH TO:							
Newark Airport (Exit 14)	3.35	7.20	8.75	10.20	12.30	14.30	4.30
Parkway (Exit 11)	7.40	13.55	19.05	21.75	26.10	29.85	8.15
New Brunswick (Exit 9)	9.05	17.60	23.40	26.95	32.15	37.45	10.55
Pennsylvania Turnpike (Exit 6)	14.50	26.95	36.30	41.50	49.90	57.65	16.15
Philadelphia-Camden (Exit 4)	13.95	26.30	35.70	41.05	49.50	57.45	15.80

The Parkway

Tolls on the Parkway have increased four times since its opening in 1950. The effective dates of the increases are April 15, 1989, December 1, 2008, January 1, 2012 and September 13, 2020. The Authority's resolution approving the most recent toll increases on the Parkway also contains an annual indexing provision providing that, commencing on January 1, 2022 and continuing annually thereafter, the tolls on the Parkway shall be further increased in an amount to be determined annually, provided that any such increase shall not exceed three percent (3%) per year. After the most recent increase, passenger vehicles now pay tolls of approximately 6.1 cents per mile for a full-length, round trip on the Parkway.

Table 4 shows the current Parkway tolls by class of vehicle.

Table 4 – Summary of Current Toll Rates on the Parkway

Toll Plaza	Milepost	Class 1 Passenger cars, Motorcycles, Taxis	Class 2 2-Axle Dual Tire Vehicle	Class 3 3-Axle Vehicle or Vehicle/Trailer Combination	Class 4 4-Axle Vehicle or Vehicle/Trailer Combination	Class 5 5-Axle Vehicle or Vehicle/Trailer Combination	Class 6 6-Axle Vehicle or Vehicle/Trailer Combination	Classes B2, B3 2-Axle Bus, 3-Axle Bus, Cash	Classes B2, B3 2-Axle Bus, 3-Axle Bus, E-ZPass
MAIN LINE BARRIER PLAZAS									
Pascack Valley*	166.1	$ 1.90	$ 3.80	$ 5.70	$ 7.60	$ 9.55	$ 11.45	$ 2.30	$ 3.40
Bergen NB*	160.5	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Essex SB*	150.7	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Union NB*	142.7	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Raritan SB*	125.4	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Asbury Park NB	104.0	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Toms River	84.7	.95	1.90	2.85	3.80	4.75	5.70	1.15	1.70
Barnegat SB	68.9	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
New Gretna NB	53.5	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Great Egg SB	28.8	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Cape May NB	19.4	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
RAMP PLAZAS									
Paramus*	164.6	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Saddle Brook NB*	160.3	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Clifton*	156.1	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Passaic*	154.5	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Watchung*	152.6	.95	1.90	2.85	3.80	4.75	5.70	1.15	1.70
Bloomfield*	148.9	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
East Orange*	147.1	1.25	2.65	3.95	5.35	6.75	8.25	1.60	2.35

Table 4– Summary of Current Toll Rates on the Parkway (cont'd.)

Toll Plaza	Milepost	Class 1 Passenger cars, Motorcycles, Taxis	Class 2 2-Axle Dual Tire Vehicle	Class 3 3-Axle Vehicle or Vehicle/Trailer Combination	Class 4 4-Axle Vehicle or Vehicle/Trailer Combination	Class 5 5-Axle Vehicle or Vehicle/Trailer Combination	Class 6 6-Axle Vehicle or Vehicle/Trailer Combination	Classes B2, B3 2-Axle Bus, 3-Axle Bus, Cash	Classes B2, B3 2-Axle Bus, 3-Axle Bus, E-ZPass
RAMP PLAZAS									
Irvington*	146.1	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Union Ramp NB*	142.8	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Sayreville SB*	142.8	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Matawan*	117.1	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Keyport*	118.6	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Holmdel*	113.6	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Red Bank*	110.3	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Eatontown NB*	106.5	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Belmar/Wall	98.0	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Brick	93.0	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Lakewood	90.1	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Berkeley	77.9	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Lacey	75.3	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15
Waretown	70.4	.95	1.90	2.85	3.80	4.75	5.70	1.15	1.70
Somers Point SB	30.2	1.90	3.80	5.70	7.60	9.55	11.45	2.30	3.40
Wildwood	3.8	.65	1.35	1.95	2.65	3.35	4.15	.80	1.15

* Heavy trucks registered 10,000 lbs. or more (6 tires or 3 or more axles) prohibited north of Interchange 105.

* E-ZPass tolls are discounted by approximately 5% over cash tolls for vehicles in Classes 2 through 6.

Pending and Future Legislation

Several bills have been introduced in the New Jersey State Legislature in the current legislative session ending in January 2022, which, if enacted in their present form, would, among other things, (i) modify the penalties to be charged by the Authority in connection with toll violations, (ii) provide exemptions from the payment of tolls on both the Turnpike and the Parkway for certain disabled veterans, (iii) prohibit employees of the Authority from using power tools in inclement weather to perform non-emergency roadside maintenance, require all Authority roadside maintenance operations involving the use of gas-powered landscaping equipment be performed in daylight hours except in emergency situations, and require that portable roadside light towers be used for all Authority roadside maintenance operations taking place at night, (iv) require the Authority to provide New Jersey E-ZPass account holders real-time notifications about tolls paid that would result in significant expenditures by the Authority on technological modifications to ensure compliance, (v) establish a Design-Build delivery system for the Authority that would authorize the payment of stipends to bidders, (vi) direct the Authority to apply a 10% discount to toll payments made by customers having a New Jersey E-ZPass account in event of a motor fuel tax increase for two years after the increase, (vii) require the Authority to establish a temporary amnesty program for fees associated with outstanding unpaid tolls, and (viii) require the Authority to extend the payment period for violations of the E-ZPass system during the COVID-19 pandemic and related state of emergency and public health emergency.

In the current and several of its previous legislative sessions, the State Legislature is considering or has considered several other bills that could adversely impact the Authority's revenues and/or expenses and/or require the Authority to alter the way it currently conducts its operations, including, without limitation, bills requiring that the Authority display toll information at each collection point on the Turnpike and the Parkway and that it provide natural gas refueling, propane refueling, hydrogen refueling and electric vehicle recharging stations at certain rest areas on both the Turnpike and the Parkway.

The Authority is unable to predict whether the currently pending bills will be enacted into law, or whether any such previously introduced bills, or substantially similar bills, will be introduced in the current or any future session of the State Legislature or, if introduced, whether any such bills will be enacted into law. If the currently pending bills or any such future bills are enacted into law, the Authority is unable to predict whether or not such bills will have a material impact on the Authority's operations.

Financial Management Principles and Guidelines

In December 2012, the Authority adopted its “Financial Management Principles and Guidelines” (the “Guidelines”). Among the policies established, the Authority will manage its toll rates, expense budget and debt issuance program to achieve minimum senior debt service coverage of 1.4x and a total requirement coverage of 1.2x. The Guidelines also stated the Authority will manage its cash flow and total expenditure levels such that it maintains an average unrestricted cash balance in the General Reserve Fund equal to at least $75,000,000. In order to maintain current policies that are in the best interest of its stakeholders, the Authority conducted a review of the Guidelines in November 2015. As a result of that review, at its November 2015 meeting, the Authority’s Board of Commissioners approved a change to the Guidelines which provided that the Authority’s minimum average unrestricted cash balance in the General Reserve Fund be increased to $100,000,000. Thereafter, at the direction of the Board of Commissioners, the Authority’s staff and its financial advisor conducted a review of twenty six (26) tolling agencies, which are members of the E-ZPass Interagency Group (IAG), to determine whether other tolling agencies have General Reserve Funds and if they do, whether they have policies requiring a minimum balance for the fund. Based on this review, in January 2017, the Authority’s Board of Commissioners approved a change to the Guidelines with respect to the minimum average unrestricted cash balance in the General Reserve Fund which provides that the Authority will manage its cash flow and total expenditures levels such that it will maintain average unrestricted cash balances in the General Reserve Fund equal to at least; (i) $125,000,000 at December 31, 2017, (ii) $150,000,000 at December 31, 2018, (iii) $175,000,000 at December 31, 2019, and (iv) beginning in 2020, by December 31st of each year, an amount equal to 10% of that years' budgeted total annual revenue.

The Guidelines were implemented at the option of the Authority and are not a legal covenant required to be maintained pursuant to the Resolution for the benefit of the Bondholders. Such Guidelines can be changed or eliminated at any time at the option of the Authority. See, however, "SUMMARY OF GENERAL BOND RESOLUTION AND CERTAIN DEFINITIONS – Toll Covenants." in Appendix D to this Official Statement. In addition, the Authority adopted an Interest Rate Swap Management Plan in March 2013 which was also amended in November 2015, an Investment Policy in September 2013 and a Debt Management Policy in January 2014.

Strategic Plan

In September 2019, the Authority adopted is first Strategic Plan that covers a 10-year period, 2020-2029 (the "Strategic Plan"). The Strategic Plan details the Authority's vision, mission, and core values, and provides clear direction and measurable goals for the next 10 years. The Authority is working to measure, monitor and report its performance as compared to the key goals on a quarterly basis.

The Strategic Plan identifies three key tenets of the Authority's philosophy:

Vision Statement - To be the premier toll road agency in the Unites States of America.

Mission Statement - To prudently manage the finances and operations of the Authority to provide our customers with a safe, efficient, innovative, and resilient toll road system, which facilitates mobility in New Jersey and the Northeast United States of America.

Core Values - Safety, diversity, innovation, transparency, state of good repair, customer satisfaction, resiliency & sustainability, and long-term financial stability.

The Strategic Plan includes performance measures for the key goals of the Authority as listed below:

Safety - Safety is one of the core values of the Authority and is a critical component of the mission statement. Ensuring safety for both customers and the Authority's workforce is a focus of every project and initiative undertaken by the Authority.

Financial Strength - Maintaining a strong financial position to fund operations, maintenance, and capital improvements adequately and efficiently supports the Authority's mission and vision for providing transportation services to the region.

Mobility - Customer satisfaction is a key best practice for any business, including the Authority. Maintaining and improving mobility for current and future customers on both the Turnpike and Parkway is critical to the Authority's future success.

State of Good Repair - Maintaining a state of good repair can increase the useful life of Authority's assets, resulting in cost savings over time and is vital in keeping traffic moving well. State of good repair cuts across all goals of the Strategic Plan.

People - The future success of the Authority depends on its ability to continue to serve and satisfy customers, which requires the Authority to hire and retain a high-quality workforce. Qualified, motivated individuals across all levels of the Authority are key to continued success which includes recruiting, motivating and retaining employees.

The Strategic Plan will be reviewed annually and updated to accurately reflect the vision, mission, and core values of the Authority and to ensure that the Authority is aligned with the most successful trends in the industry. The Strategic Plan provides clear and consistent direction to allow management and staff to all work with the same philosophy and consistency, constantly improving the Authority.

Management's Discussion of Results of Operations

The following table summarizes the Authority's Revenues, Operating Expenses, Debt Service and Net Revenues for its fiscal years 2015 through 2019. The amounts set forth in this table are presented in conformity with the requirements of the Resolution and not on the basis of generally accepted accounting principles. The audited financial statements of the Authority for the years ended December 31, 2019 and December 31, 2018, prepared in conformity with generally accepted accounting principles with reconciling schedules to the Resolution, are included in Appendix A to this Official Statement. This table should be read in conjunction with the audited financial statement

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5-Year Summary Schedule of Revenues, Operating Expenses, Debt Service and Net Revenues ($000s)*

	2015	2016	2017	2018	2019
TURNPIKE SYSTEM REVENUES					
Toll revenue	$ 1,523,133	$ 1,570,662	$ 1,579,896	$ 1,612,326	$ 1,612,268
E-ZPass Fees	56,262	61,052	60,505	84,417	80,329
Concession revenue	38,993	38,192	35,591	36,192	33,104
Earnings on investments	11,266	12,362	17,556	30,919	37,766
Build America Bonds Rebate	75,908	76,071	76,153	76,439	76,725
Miscellaneous revenue	13,104	25,397(1)	24,738(2)	19,450(3)	17,123(4)
Arts Center	3,632	4,079	4,061	4,453	4,690
Total Revenues	1,722,298	1,787,815	1,798,500	1,864,196	1,862,005
Operating Expenses					
Maintenance of roadway, buildings and equipment	201,129	185,361	215,130	221,230	215,506
Toll Collection	157,558	160,485	146,150	162,345	156,309
State Police and Traffic Control	78,290	79,799	79,232	91,016	94,802
Technology	28,629	28,755	21,722	21,652	19,460
General Administrative Costs	37,847	38,825	45,891	45,824	44,858
Total operating expenses	503,453	493,225	508,125	542,067	530,935
Net Revenue Available for Debt Service	1,218,845	1,294,590	1,290,375	1,322,129	1,331,070
Debt Service					
Interest Expense	519,311	575,338	604,509	587,453	596,076
Principal Payments	142,115	197,740	218,475	201,025	228,205
Total Debt Service	661,426	773,078	822,984	788,478	824,281
Net Revenue After Operating Expenses and Debt Service	557,419	521,512	467,391	533,651	506,789
Interfund Transfers:					
To Charges Fund	535	94	115	0	0
To Maintenance Reserve Fund	87,058	89,370	116,751	119,086	131,468
To Special Project Reserve Fund	50,301	38,918	39,696	40,490	41,300
Excess Net Revenues	$ 419,525	$ 393,130	$ 310,829	$ 374,075	$ 334,021
Net Revenue/Total Debt Service	1.84	1.67	1.57	1.68	1.61
Net Revenue/Total Debt Service and Reserves	1.52	1.44	1.32	1.39	1.34

* Totals may not add due to rounding.

(1) Includes $6,578 of reimbursements from the Federal Government.

(2) Includes $2,764 of reimbursements from the Federal Government.

(3) Includes $7 of reimbursements from the Federal Government.

(4) Includes $1,006 of reimbursements from the Federal Government.

Management's Discussion of Unaudited Interim Results for the Eleven Months Ended November 30, 2020 Compared to the 2020 Budget

For the eleven months ended November 30, 2020, revenue available for operating expenses, debt service and reserves was $1,467,561,000 which was $245,076,000, or 14.3%, less than the year-to-date-budget. Toll revenue, investment income, and concession revenue, all are below the 2020 eleven-month budget. As further discussed below, the shortfall from budgeted revenue is largely due to the impacts of the COVID-19 pandemic and the resulting government actions put in place to control the spread of the virus. Neither the COVID-19 pandemic negative impacts nor the positive impacts of the September 13, 2020 toll rate increase were included in the 2020 budget. While total revenue was below budget through August, it has exceeded the 2020 budget in September, October and November, and the shortfall from budget has been reduced from a high of about $275,000,000 through August 2020 to its current level of $245,076,000.

Toll revenue for the period was $1,249,916,000, which was $249,733,000, or 16.7%, less than the 2020 year-to-date budget. The under-budget performance is entirely due to the decrease in toll transactions and revenue from the impact of the COVID-19 pandemic and the shelter in place and non-essential business closures imposed under the declared State of Emergency. Slightly offsetting these declines is the positive impact on toll revenue from the September 13, 2020 toll rate increases on both roads. Toll Revenue was slightly under, by 2.3%, the updated toll revenue forecast issued by CDM Smith, the Authority's traffic engineering consultants, on October 6, 2020 for the three month period September through November. Toll revenue was slightly under the updated forecast due in part to the increased precautionary measures and voluntary travel restrictions issued in November, as well as weather conditions.

E-ZPass fees consist of monthly membership fees, transponder sales, return check fees, administrative fees, interest on prepaid accounts and monthly statement fees. Revenue was $83,872,000, which was $10,396,000, or 14.1%, higher than the 2020 year-to-date budget. E-ZPass fees are over budget due, in part, to higher administrative fees collected from toll violators and higher monthly membership and statement fees. E-ZPass fees have not been impacted by the COVID-19 pandemic, and new E-ZPass accounts continue to be opened each month.

Concession revenue consists of revenues generated through the sale of food, gasoline and convenience store items at the service areas located along both roadways. Concession revenue for the eleven months ended November 30, 2020 was $29,372,000, which was $3,564,000 or 10.8%, less than the 2020 eleven-month budget. Concession revenue is under budget due entirely to a combination of less travel resulting from the ongoing effects of the COVID-19 pandemic which has significantly reduced service area sales. The Authority is receiving only the minimum guaranteed rent for food and gasoline sales; however the reduction in revenue is less severe than the reduction in actual food and fuel sales at the service areas due to the levels of the guaranteed minimum rent payments which were increased in 2020. Helping to offset the reduced revenue from only receiving the guaranteed minimum rent payments is higher than budgeted income from diesel fuel sales. The Authority receives 50% of the gross profit margin on diesel fuel sales on both roadways.

Investment income was $18,375,000, which was about $3,587,000, or 16.3%, lower than the 2020 year-to-date budget due to lower interest rates. The 2020 budget assumed generally lower interest rates based upon pre-pandemic market conditions; however, the declines have been slightly more than assumed due to pandemic impacts on short term interest rates.

The Build America Bond Subsidy (BABS) is a direct payment by the U.S. Treasury to the Authority which Federal law originally established as an amount equal to 35.0% of the interest payable on the Series 2009 F Bonds and the Series 2010 A Bonds. The Budget Control Act of 2011 requires automatic spending cuts commonly referred to as sequestration which impacts the subsidy received on BABS. The percentage reduction of the subsidy for the 2019 Federal fiscal year was 6.2%, for the 2020 Federal fiscal year it was 5.9%, and for the 2021 Federal fiscal year it is 5.7%. As a result, the $71,348,000 earned in the eleven months ended November 2020 was approximately $904,000, or 1.3%, higher than the 2020 year-to-date budget. The actual subsidy was higher than budgeted since the 2020 payments were based upon the 5.9% reduction, and the Authority received additional late interest payments of $837,000 in 2020 as the July 1, 2020 payment was not paid timely by the U.S. Treasury. See “CERTAIN RISK FACTORS – Federal Subsidy on Build America Bonds” herein.

Miscellaneous revenue collected for the period was $11,579,000, which was approximately $772,000, or 7.1%, higher than the 2020 eleven-month budget. Miscellaneous revenue was above budget due mainly to a $568,000 insurance recovery from the Delaware River Turnpike Bridge insurance claim which was not budgeted.

Arts Center revenue consists of rent and naming rights for the PNC Bank Arts Center located in Holmdel. For the eleven months ended November 30, 2020, revenue received of $3,099,000 was at budgeted levels. Only the minimum guaranteed rent payments were included in the actual results and the year-to-date budget.

Operating expenses through November 30, 2020 were $449,080,000, which was $86,838,000, or 16.2%, lower than the 2020 year-to-date budget. Operating expenses were under budget through November 2020 primarily due to lower than budgeted snow and severe weather costs, health benefit costs, salaries and electronic toll collection costs. Snow and severe weather costs were approximately $20,568,000 under budget as 2020 had generally milder winter weather than previous years as only $5,192,000 has been spent on snow through November. The Authority conservatively budgets its snow costs and has not changed its annual budget of $38,000,000 for the past six years. Health benefits, salaries and electronic toll collection costs are all lower than budget due to the impacts of the COVID-19 pandemic. The Authority has self-funded health benefit plans and has seen actual costs under budget by $14,000,000 and also lower than the prior year due to less usage for elective surgeries, outpatient procedures and doctor’s office visits. Salaries are about $15,019,000 under budget as most vacancies Authority-wide were not filled during the pandemic, temporary toll collectors have been less than budgeted and toll collector overtime is under budget both in response to lower traffic volumes from the COVID-19 pandemic. Electronic Toll Collection costs are $12,756,000 under budget due to lower credit card fees and lower transaction processing fees from the reduced traffic and toll revenue volumes. Other professional services are under budget by $4,000,000 due to less than anticipated spending in 2020.State police services are under budget by $1,731,000 due to lower than budgeted number of troopers, while vehicle purchases, materials and diesel fuel combined are $12,341,000 under budget, with fuel being under budget due mainly to lower prices.

Debt service was $604,343,000 for the eleven months ended November 30, 2020 and was approximately $167,712,000, or 21.7%, lower than the 2020 year-to-date budget. Debt service was lower than budget primarily due to the debt refunding completed in June 2020, which reduced current year interest and principal payments. Debt service is also under budget as the budget included interest on new money bonds starting in July 2020 which have not been issued.

After providing for required funding to the Maintenance Reserve Fund and the Special Project Reserve Fund, the Authority deposited $253,358,000 into the General Reserve Fund during the eleven months ended November 30, 2020. Despite the significant toll revenue shortfall from budget of over $250,000,000, this deposit was $9,475,000, or 3.9%, higher than the 2020 budget due to the debt refunding completed in June 2020 and the lower than budgeted operating expenses.

Management's Discussion of Unaudited Interim Results for the Eleven Months Ended November 30, 2020 Compared to the Eleven Months Ended November 30, 2019.

For the eleven months ended November 30, 2020, revenue available for operating expenses, debt service and reserves was $1,467,561,000 which was $243,912,000, or 14.3%, less than the same period of 2019. As further discussed below, the reduced revenue is largely due to the impacts of the COVID-19 pandemic and the resulting government actions put in place to control the spread of the virus, including shelter in place orders. Toll revenue and investment income have been most impacted by the COVID-19 impacts on travel and the economy, and to a lesser extent concession revenue. Since April, the COVID-19 impacts on revenue have been less severe, and toll revenue and total revenue have increased. After taking into account the impact of COVID-19 and the toll increases that became effective on September 13, 2020, the amount of toll revenue received by the Authority during the three month period of September through November of 2020 is higher than the amount of toll revenue received during the same period of 2019.

Toll revenue for the period was $1,249,916,000, which was $232,160,000, or 15.7%, less than the same period of 2019. The decrease in toll transactions and revenue is due to the impact of the COVID-19 pandemic and the shelter in place and non-essential business closures imposed under the declared State of Emergency. On the Turnpike, toll transactions decreased 26.0% and revenue decreased 15.6% and, on the Parkway, toll transactions decreased 20.3% and revenue decreased 15.9% compared to 2019. The toll revenue declines have lessened each month since April due the phased reopening of New Jersey and surrounding states. Toll revenue has actually increased compared to the prior year in September, October and November due to the toll rate increase which became effective on September 13, 2020. Commercial traffic and revenue on the Turnpike have outperformed passenger car results and remained strong throughout the COVID-19 pandemic.

E-ZPass fees consist of monthly membership fees, transponder sales, return check fees, administrative fees, interest on prepaid accounts and monthly statement fees. Revenue was $83,872,000, which was $9,355,000, or 12.6%, more than the same period of 2019. The increase is due, in part, to higher administrative fees collected from toll violators and higher monthly membership and statement fees. E-ZPass fee revenue has not been impacted by the COVID-19 pandemic, as monthly account fees are not based upon transaction volumes.

Concession revenue consists of revenues generated through the sale of food, gasoline and convenience store items at the service areas located along both roadways. Concession revenue for the eleven months ended November 30, 2020 was $29,372,000, which was $1,189,000 or only 3.9%, less than the same period in 2019. The decrease in concession sales and revenue is due to a combination of less travel resulting from the ongoing effects of the COVID-19 pandemic and service area closures in the beginning of 2020 for renovation and remodeling that have since reopened. The Authority receives 50% of the gross profit margin on all diesel fuel sold on both roadways. On the Turnpike, food sales decreased 52.7% while fuel sales decreased 19.7% and convenience store sales increased by 2.1% compared to last year. On the Parkway, food sales decreased 37.9%, fuel sales decreased 20.8%, and convenience store sales increased 15.0% compared to the same period in 2019. Of note, while food and fuel sales have decreased significantly from the impacts of COVID-19, concession revenue received by the Authority has not decreased by the same magnitude. Concession revenue has only declined by 3.9% due mainly to the receipt of minimum guaranteed rent levels which are high compared to rent calculated by the percentage of sales, the fact that the minimum guaranteed rent was already being received since 2019 on certain service areas closed during renovation, and an increase in the gross profit margin on diesel fuel sales notwithstanding the decline in gallons sold.

Investment income was $18,375,000, which was about $16,287,000 lower than the same period in 2019 due to lower interest rates and lower average invested balances due. Short-term interest rates had already been declining compared to the prior year pre-pandemic, so much of the 2020 decrease had been anticipated. However, interest rates have declined further since the COVID-19 pandemic began.

The Build America Bond Subsidy (BABS) is a direct payment by the U.S. Treasury to the Authority which Federal law originally established as an amount equal to 35.0% of the interest payable on the Series 2009 F Bonds and the Series 2010 A Bonds. The Budget Control Act of 2011 requires automatic spending cuts commonly referred to as sequestration which impacts the subsidy received on BABS. The percentage reduction of the subsidy for the 2019 Federal fiscal year was 6.2%, for the 2020 Federal fiscal year it was 5.9%, and for the 2021 Federal fiscal year it is 5.7%. As a result, the $71,348,000 earned in the eleven months ended November 2020 was approximately $1,027,000 higher than the $70,321,000 earned during the same period in 2019. The increase also includes additional late interest payments of $837,000 in 2020. See "CERTAIN RISK FACTORS – Federal Subsidy on Build America Bonds" herein. The BABS was not impacted by the COVID-19 pandemic, and all payments due from the Federal Government in 2020 have been received.

Miscellaneous revenue collected for the period was $11,579,000, which was approximately $4,394,000 lower than over the same period in 2019. The amount in 2019 included a $1,000,000 FEMA recovery for Winter Storm Quinn (March 2018), a $1,200,000 receipt for the Delaware River Turnpike Bridge insurance claim, and approximately $2,500,000 in surplus land and property sales, all of which did not reoccur in 2020. The decline in miscellaneous revenue was not related to the COVID-19 pandemic.

Arts Center revenue consists of rent and naming rights for the PNC Bank Arts Center located in Holmdel. For the eleven months ended November 30, 2020, revenue accrued of $3,099,000 was approximately $264,000 lower than the same period in 2019 due to the refund to PNC per Termination Agreement dated November 24, 2020. Through November, revenue accrued consists of the minimum annual guaranteed rent in each year.

Operating expenses through November 30, 2020 were $449,080,000, which was $10,754,000, or 2.3% lower than the comparable period last year. Operating expenses were lower through November 2020 primarily due to lower snow and severe weather costs, lower electronic toll collection processing costs and lower health benefit expenses. Snow and severe weather costs were $9,460,000 lower in 2020 due to less snow and winter weather events in 2020. Electronic Toll Collection costs were $4,034,000 lower than 2019 due to lower credit card processing costs and transaction processing costs due to the reduced volumes from COVID-19 impacts. Health benefit expenses were $6,317,000 lower in 2020 as the Authority is self-funded for health benefits and has seen decreased costs from elective surgeries and outpatient procedures from COVID-19 restrictions. Slightly offsetting these declines was in increase safety costs, trooper cost and pension costs. Safety costs increased by $2,465,000 due to spending on extra cleaning and supplies and personal protective equipment and overtime related to COVID-19. State trooper cost increased by $4,495,000 primarily due to increase in the pension cost based on the recently published rates and a marginal increase in compensation. Pension costs increased by $3,205,000 due to an increase in covered salaries and an increase in the pension rate billed from the State PERS based on actuarial calculations. It should be noted that salaries are not a major factor in the comparison to the prior year, as there will be no across the board salary increases for employees in 2020.

Debt service was $604,343,000 for the eleven months ended November 30, 2020 and was approximately $151,080,000 lower than the same period last year due to a debt refunding completed in June 2020 which reduced current year interest and principal payments. The debt refunding was completed through a fixed rate direct purchase agreement and was completed to provide cash flow relief needed at the height of the COVID-19 pandemic.

After providing for required funding to the Maintenance Reserve Fund and the Special Project Reserve Fund, the Authority deposited $253,358,000 into the General Reserve Fund during the eleven months ended November 30, 2020. Expenditures in the General Reserve Fund totaled $235,358,000 and consisted primarily of $118,250,000 for the State Transportation Projects Funding Agreement, $20,167,000 for the Transportation Trust Fund payments, $2,292,000 for feeder road maintenance payments to the State Department of Transportation and $26,700,000 for service area funding which will be recovered starting in 2021. In addition to the spending, there was $98,409,000 in net transfers from the General Reserve Fund for revenue funded supplemental capital projects.

Management's Discussion of Results for the Fiscal Years Ended December 31, 2019 through 2015

Fiscal Year 2019

Revenues available for operating expenses, debt service and reserves were $1,862,005,000 in 2019, which was $2,191,000 less than the revenues of $1,864,196,000 in 2018. Toll revenue is the principal source of revenue and in 2019 tolls constituted approximately 86.6% of total revenues. Revenues from tolls were $1,612,268,000. This is a slight reduction of $58,000 from the $1,612,326,000 earned in 2018. Traffic on the Turnpike increased by 1.1% and revenue decreased by 0.2% while Parkway toll transactions decreased by 0.8% and revenue increased by 0.6% when compared to the same period in 2018. Toll revenue slightly decreased due to the reopening of the Pulaski Skyway, offering customers shorter and less expensive trips. Parkway toll transactions decreased due to Interchange 145 (East Orange) being converted to one-way tolling on July 26th, 2018. Transactions are now only counted in one direction. When adjusting for one-way tolling, toll transactions would have increased by 1.1%.

In 2019, E-ZPass Fees accounted for 4.3% of the Authority's revenue. E-ZPass Fees decreased $4,088,000, or 4.8%, to $80,329,000 from $84,417,000 in 2018. The decrease in revenues is due to a decrease in the Authority's share of fees to 80.9% from 81.4% based on the updated revenue sharing percentage with the other NJ E-ZPass Agencies under the first amendment to the MOA dated January 18, 2018. E-ZPass fees also decreased due to lower administrative fees collected from toll violators due in part to November and December 2017 violation notices mailed in late December 2017, with those payments made in early 2018. E-ZPass transactions in 2019 were 86.9% of all transactions on the Turnpike and 84.8% of all toll transactions on the Parkway increasing from 85.9% and 83.2%, respectively, in 2018.

Concession revenues were $33,104,000 and constituted about 1.8% of 2019 revenues. Concession revenues decreased $3,088,000 or 8.5% from the $36,192,000 recorded in 2018. The decrease in concession revenue is primarily due to the closure of three service areas for renovations. On the Turnpike, the Alexander Hamilton and Richard Stockton service areas closed for renovations, and on the Parkway, the Forked River service area closed for renovations. The Authority receives 50% of the gross profit margin on all diesel fuel sold on both roadways. On the Turnpike, fuel sales decreased 14.3%, food sales decreased 3.8% and convenience store sales increased 7.6% as compared to 2018. On the Parkway, fuel sales decreased 9.2%, convenience store sales increased 37.7%, Parkway food sales increased 5.4% compared to the same period in 2018.

Investment income in 2019 was $37,766,000 or 2.0% of the Authority's total revenue for 2019. Investment income was approximately $6,847,000, or 22.1%, higher than 2018 due to higher yields on investments due to short term general interest rate increases and higher invested balances in the General Reserve Fund and Maintenance Reserve Fund.

The Authority issued the Series 2009 F Bonds in April 2009 and the Series 2010 A Bonds in December 2010. Both Series were issued under the Build America Bond program authorized by the American Reinvestment and Recovery Act of 2009. Prior to March 1, 2013, the Federal Government reimbursed the Authority for 35% of the interest payable on both of these issues. See “CERTAIN RISK FACTORS – Federal Subsidy on Build America Bonds.” The rebate constitutes pledged revenue under the Bond Resolution and totaled $76,725,000 in 2019 which increased $286,000 or 0.4% from $76,439,000 in 2018. This reimbursement constituted about 4.1% of the Authority’s 2019 revenue.

Miscellaneous revenue collected for the year was $17,123,000, or about 0.9% of the Authority’s total revenue. The 2019 amount was approximately $2,327,000, or 12.0% lower than over the same period in 2018. The amount in 2019 included a $1,000,000 FEMA recovery for Winter Strom Quinn (March 2018) and a $1,200,000 receipt for the Delaware River Turnpike Bridge insurance claim. The amount in 2018 included the receipt of $6,000,000 for the Delaware River Turnpike Bridge insurance claim and a payment from a new fiber lease agreement with PEG Bandwith LLC. Arts Center rent was $4,690,000 or 0.3% of total Authority revenues in 2019 and was $237,000 higher than 2018 due to higher variable rent payment and an increase in the amortization of the advanced rent payment related to the Capital Reconstruction and Renovation Payments.

Operating expenses in 2019 were $530,935,000, which was $11,132,000 lower than 2018. Annual operating expenses were lower in 2019 due to a decrease in maintenance, toll collection, and technology costs. The primary factors causing this decrease are lower snow removal and severe weather costs due to the milder winter weather, lower OPEB expenses based on the actuarial report issued for the year ended December 31st, 2019 and lower pension expenses based on the GASB 68 report for the year ended June 30th, 2019. These savings are partially offset by an increase in the payroll costs based on the union contracts and an increase in the health benefits cost based on the actual experience and claims processed.

Debt service in 2019 was $824,281,000 and was approximately $35,803,000 higher than in 2018. Debt service was high primarily due to higher principal payments in 2019 as compared to 2018.

After providing for required funding to the Maintenance Reserve Fund and the Special Project Reserve Fund, the Authority deposited $334,021,000 into its General Reserve Fund in 2019. Expenses of $308,232,000 in the General Reserve Fund consisted primarily of $154,000,000 for the State Transportation Projects Funding Agreement, $22,000,000 for Transportation Trust Fund payments, $3,500,000 for feeder road maintenance payments to the State Department of Transportation, $12,852,000 on extraordinary snow costs, $19,000,000 for OPEB & claim settlement reserves, and a net transfer of $25,000,000 to the Construction Fund for revenue funded capital projects and $69,121,000 for supplemental capital projects.

Fiscal Year 2018

Revenues available for operating expenses, debt service and reserves were $1,864,196,000 in 2018, which was $65,696,000 more than the revenues of $1,798,500,000 in 2017. Toll revenue is the principal source of revenue and in 2018 tolls constituted approximately 86.5% of total revenues. Revenues from tolls were $1,612,326,000, which was $32,430,000, or 2.1%, more than the $1,579,896,000 earned in 2017. The increase in toll revenue was due primarily to normal growth, favorable economic conditions, and strong commercial traffic. In 2018, a record level of 34.3 million commercial vehicle transactions were recorded, surpassing the previous record high in 2007 by more than 1.0 million transactions. Toll revenue increased despite the effects from winter storms Grayson (January 4-5, 2018), Quinn (March 7-8, 2018), and Toby (March 21-22, 2018), which were state of emergency events. It is estimated that without the impact of winter storms Grayson, Quinn, and Toby, 2018 toll revenue would have increased by 2.8%. Traffic on the Turnpike increased by 1.6% and revenue increased by 2.4% while Parkway toll transactions decreased by 0.8% and revenue increased by 1.1% when compared to the same period in 2017. Parkway toll transactions decreased due to Interchange 145 (East Orange) being converted to one-way tolling on July 26th, 2018. Transactions are now only counted in one direction. When adjusting for one-way tolling, toll transactions would have increased by 0.6%.

In 2018, E-ZPass Fees accounted for 4.5% of the Authority's 2018 revenue. E-ZPass Fees increased $23,912,000, or 39.5%, to $84,417,000 from $60,505,000 in 2017. The increase in revenues is due to an increase in administrative fees collected from toll violators and higher interest income from increased investment yields on higher invested balances. E-ZPass fees also increased due to the Authority's share of fees increasing to 81.4% from 81.3% based on the updated revenue sharing percentage with the other NJ E-ZPass Agencies under the first amendment to the MOA dated January 18, 2018. E-ZPass transactions in 2018 were 85.9% of all transactions on the Turnpike and 83.2% of all toll transactions on the Parkway increasing from 84.2% and 81.4%, respectively, in 2017.

Concession revenues were $36,192,000 and constituted about 1.9% of 2018 revenues. Concession revenues increased $601,000 or 1.7% from the $35,591,000 recorded in 2017. The increase in concession revenue is primarily due to extra payments received in 2018 based on revised terms and payment due dates in the new agreement with HMS Host and Sunoco dated September 12, 2017. The Authority receives 50% of the gross profit margin on all diesel fuel sold on the Turnpike. On the Turnpike, fuel sales decreased 10.5%, food sales increased 5.4% and convenience store sales decreased 15.7% as compared to 2017. On the Parkway, fuel sales decreased 12.5%, convenience store sales decreased 28.2%, Parkway food sales decreased 1.7% compared to the same period in 2017. The decrease in convenience store sales is due in part to the removal of cigarette sales in the gross sales calculation for 2018. When accounting for this change, sales would have only decreased 0.6% on the Turnpike and sales would have increased 7.8% on the Parkway.

Investment income in 2018 was $30,919,000 or 1.7% of the Authority's total revenue for 2018. Investment income was approximately $13,363,000, or 76.1%, higher than 2017 due to higher yields on investments due to short term general interest rate increases and higher invested balances in the General Reserve Fund and Maintenance Reserve Fund.

The Authority issued the Series 2009 F Bonds in April 2009 and the Series 2010 A Bonds in December 2010. Both Series were issued under the Build America Bond program authorized by the American Reinvestment and Recovery Act of 2009. Prior to March 1, 2013, the Federal Government reimbursed the Authority for 35% of the interest payable on both of these issues. See "CERTAIN RISK FACTORS – Federal Subsidy on Build America Bonds." The rebate constitutes pledged revenue under the Bond Resolution and totaled $76,439,000 in 2018 which increased $286,000 or 0.4% from $76,153,000 in 2017. This reimbursement constituted about 4.1% of the Authority's 2018 revenue.

Miscellaneous revenue collected for the year was $19,450,000, or about 1.0% of the Authority's total revenue. The 2018 amount was approximately $5,288,000, or 21.4% lower than over the same period in 2017. The amount in 2018 included the receipt of $6,000,000, an insurance payment for the Delaware River Turnpike Bridge insurance claim and a payment from a new fiber lease agreement with PEG Bandwith LLC. The amount in 2017 included a $5,700,000 surplus land sale, a $2,925,000 LIBOR settlement from Barclays and $2,600,000 FEMA Recovery for winter storm Jonas. Arts Center rent was $4,453,000 or 0.2% of total Authority revenues in 2018 and was $392,000 higher than 2017 due to higher variable rent payment.

Operating expenses in 2018 were $542,067,000, which was $33,942,000 higher than 2017. Annual operating expenses were higher in 2018 due to the wages, retroactive salary increase payments, additional pension and tax accruals from the settlement of union contracts. Operating expenses also increased due to higher state trooper costs as a result of increased deployments on the roadways and higher toll collection costs related to an increase in E-ZPass fees.

Debt service in 2018 was $788,478,000 and was approximately $34,785,000 lower than in 2017. Debt service decreased primarily due to lower principal payments and lower interest expense as the Authority took advantage of market conditions and refunded several Bond issues. Interest expense is also lower due to the full maturity of the 2013B Bond Series and 2013C Bond Series.

After providing for required funding to the Maintenance Reserve Fund and the Special Project Reserve Fund, the Authority deposited $374,075,000 into its General Reserve Fund in 2018. General Reserve Fund expenses of $307,999,000 consisted primarily of $166,500,000 for the State Transportation Capital Plan, $22,000,000 for State Transportation Trust Fund payments, $4,500,000 for feeder road payments to the State Department of Transportation and $25,378,000 on extraordinary snow costs.

Fiscal Year 2017

Revenues available for operating expenses, debt service and reserves were $1,798,500,000 in 2017, which was $10,685,000 more than the revenues of $1,787,815,000 in 2016. Toll revenue is the principal source of revenue and in 2017 tolls constituted approximately 87.8% of total revenues. Revenues from tolls were $1,579,896,000 which was $9,234,000, or 0.6%, more than the $1,570,662,000 earned in 2016. The increase in toll revenue was due primarily to generally milder winter weather in 2017 compared to the same period in 2016, favorable economic conditions and stable gas prices. Toll revenue increased despite the effects from winter storm Stella, a state of emergency event which occurred on March 14-15, 2017, and the closure of Interchanges 6 and 6A on the Turnpike from January 20, 2017 to March 9, 2017 due to the emergency closure of the Delaware River Turnpike Bridge, which connects the Turnpike to the Pennsylvania Turnpike. It is estimated that without the impact of winter storm Stella, 2017 toll revenue would have increased by 0.8%. The closure of the Delaware River Turnpike Bridge resulted in an estimated toll revenue loss of $8.8 million. Both the Turnpike and Parkway experienced traffic and toll revenue gains for the year ended December 31, 2017 compared to the same period in 2016 despite the fact that 2017 had one fewer day than 2016, as 2016 was a leap year.

In 2017, E-ZPass Fees accounted for 3.4% of the Authority's 2017 revenue. E-ZPass Fees decreased $547,000, or 0.9%, to $60,505,000 from $61,052,000 in 2016. The decrease in revenues was due to a reduction in the Authority's share of fees to 81.3% from 83.8% based on the updated revenue sharing percentage with the other NJ E-ZPass Agencies under the MOA dated February 1, 2017. E-ZPass fees also decreased due to higher lost/damaged tag fees from the tag swap program included in 2016. E-ZPass transactions in 2017 were 84.2% of all transactions on the Turnpike and 81.3% of all toll transactions on the Parkway increasing from 82.6% and 79.6%, respectively, in 2016.

Concession revenues were $35,591,000 and constituted about 2.0% of 2017 revenues. Concession revenues decreased $2,601,000 or 6.8% from the $38,192,000 recorded in 2016. The decrease was due to a decrease in revenue received by the Authority from the gross profit margin on diesel fuel sales as compared to 2016. The Authority receives 50% of the gross profit margin on all diesel fuel sold on the Turnpike. On the Turnpike, fuel sales decreased 9.3%, food sales decreased 1.1% and convenience store sales increased 2.4% as compared to 2016. The decrease in food and fuel sales was due in part to the closure of the Delaware River Turnpike Bridge for a significant portion of the first quarter. On the Parkway, fuel sales decreased 6.7% due to reduction in the gross profit margin on diesel fuel sales and convenience store sales increased 6.7% due to the receipt of back rent payment for the Oceanview Service Area. Parkway food sales remained flat when compared to 2016.

Investment income in 2017 was $17,556,000 or 1.0% of the Authority's total revenue for 2017. Investment income was approximately $5,194,000, or 42.0%, higher than 2016 due to higher yields on investments due to short term general interest rate increases and higher invested balances in the General Reserve Fund and Maintenance Reserve Fund.

The Authority issued the Series 2009 F Bonds in April 2009 and the Series 2010 A Bonds in December 2010. Both Series were issued under the Build America Bond program authorized by the American Reinvestment and Recovery Act of 2009. Prior to March 1, 2013, the Federal Government reimbursed the Authority for 35% of the interest payable on both of these issues. See "CERTAIN RISK FACTORS – Federal Subsidy on Build America Bonds." The rebate constitutes pledged revenue under the Bond Resolution and totaled $76,153,000 in 2017 which increased $82,000 or 0.1% from $76,071,000 in 2016. This reimbursement constituted about 4.2% of the Authority's 2017 revenue.

Miscellaneous revenue collected for the year was $24,738,000, or about 1.4% of the Authority's total revenue. The 2017 amount was approximately $659,000, or 2.6% lower than over the same period in 2016. The amount in 2017 included a $5,700,000 surplus land sale, a $2,925,000 LIBOR settlement from Barclays and $2,600,000 FEMA Recovery for winter storm Jonas. The amount in 2016 included the receipt of $6,500,000 FEMA Recovery for Superstorm Jonas, the receipt of $3,924,000 in non-recurring insurance settlements and $1,000,000 from a non-recurring FINRA arbitration settlement. Arts Center rent was $4,061,000 or 0.2% of total Authority revenues in 2017 and was $18,000 lower than 2016 due to slightly lower variable rent payment.

Operating expenses in 2017 were $508,125,000, which was $14,900,000 higher than 2016. Annual operating expenses were higher in 2017 primarily due to higher than anticipated snow removal costs incurred during the winter months of 2017. In 2017, the Authority spent $11,907,000 more on snow removal costs as compared to 2016.

Debt service in 2017 was $822,984,000 and was approximately $49,906,000 higher than in 2016. Debt service increased primarily due to higher principal and interest payments on the Series 2017 A Bonds issued in April 2017. Interest on the Series 2014 A Bonds was paid from bond proceeds (capitalized interest) until May 2016.

After providing for required funding to the Charges Fund, the Maintenance Reserve Fund and the Special Project Reserve Fund, the Authority deposited $310,828,000 into its General Reserve Fund in 2017. The Authority's expenses of $293,510,000 consist primarily of $204,000,000 for the State Transportation Capital Plan, $22,000,000 for State Transportation Trust Fund payments, $6,500,000 for feeder road payments to the State Department of Transportation and $7,545,000 on extraordinary snow costs.

Fiscal Year 2016

Revenues available for operating expenses, debt service and reserves were $1,787,815,000 in 2016, which was $65,517,000 more than the revenues of $1,722,298,000 in 2015. Toll revenue is the principal source of revenue and in 2016 tolls constituted approximately 87.9% of total revenues. Revenues from tolls were $1,570,662,000, which was $47,528,000, or 3.1%, more than the $1,523,133,000 earned in 2015. The increase in toll revenue was due primarily to relatively mild winter and spring weather and continued comparatively low gas prices. Toll revenue increased in spite of the impact of Superstorm Jonas which occurred on January 23-24, 2016 and was declared to be a State of Emergency. It is estimated that without the impact of Superstorm Jonas, 2016 toll revenue would have increased by 3.3%. Both the Turnpike and Parkway experienced traffic and toll revenue gains for the year ended December 31, 2016 compared to the same period in 2015. In addition to favorable weather and comparatively low gas prices, traffic and toll revenue have benefited from improving economic conditions, and an extra leap year day in 2016.

In 2016, E-ZPass Fees accounted for 3.5% of the Authority's 2016 revenue. E-ZPass Fees increased $4,790,000, or 8.5%, to $61,052,000 from $56,262,000 in 2015. The increase in revenues was due to enhancements in enforcement efforts which increased administrative fee revenue collected from toll violators and an increase in membership fees and statement fees as the number of customers continues to grow with 139,000 new accounts added in 2016. E-ZPass fees also increased due to higher lost/damaged tag fees from the tag swap program. E-ZPass transactions in 2016 were 82.6% of all transactions on the Turnpike and 79.6% of all toll transactions on the Parkway increasing from 81.7% and 78.7%, respectively, in 2014.

Concession revenues were $38,192,000 and constituted about 2.1% of 2016 revenues. Concession revenues decreased $801,000 or 2.1% from the $38,993,000 recorded in 2015. The decrease was due to the lower gross profit margin on diesel fuel sales on the Turnpike. On the Turnpike, fuel sales increased 5.7%, but revenue received was lower due to a decrease in receipts from the gross profit margin on diesel fuel sales as compared to 2015. The Authority receives 50% of the gross profit margin on all diesel fuel sold. Turnpike food and convenience store sales increased 5.0% and 11.7%, respectively, compared to 2015. The increase in food and fuel sales was in part due to the reopening of the Grover Cleveland Service Area on November 23, 2015 after a three-year closure due to the effects of Superstorm Sandy. On the Parkway, fuel sales increased 2.0% and convenience store sales increased 3.6%. Parkway food sales only increased 0.2%, due to the closure of the Vauxhall Service Area food service facility from October 2, 2015 to May 3, 2016.

Investment income in 2016 was $12,362,000 or 0.7% of the Authority's total revenue for 2016. Investment income was approximately $1,096,000, or 9.7%, higher than 2015 due to higher invested balances in the Debt Reserve Fund from the Series 2015 E Bond issue and higher yields on investments since September 2016 due to short term general interest rate increases.

The Authority issued the Series 2009 F Bonds in April 2009 and the Series 2010 A Bonds in December 2010. Both Series were issued under the Build America Bond program authorized by the American Reinvestment and Recovery Act of 2009. Prior to March 1, 2013, the Federal Government reimbursed the Authority for 35% of the interest payable on both of these issues. See "CERTAIN RISK FACTORS – Federal Subsidy on Build America Bonds." The rebate constitutes pledged revenue under the Bond Resolution and totaled $76,071,000 in 2016 which increased $163,000 or 0.2% from $75,908,000 in 2015. This reimbursement constituted about 4.3% of the Authority's 2016 revenue.

Miscellaneous revenue collected for the year was $23,870,000, or about 1.3% of the Authority's total revenue. The 2016 amount was approximately $10,766,000, or 82.2% higher than over the same period in 2015. The increase in 2016 is due to the $6,500,000 FEMA Recovery for Superstorm Jonas, the receipt of $3,250,000 in non-recurring insurance settlements and $1,000,000 from a non-recurring FINRA arbitration settlement. Arts Center rent was $4,079,000 or 0.2% of total Authority revenues in 2016 and was $447,000 higher than 2015 due to higher variable payments from increased ticket sales and a contractual rent increase.

Operating expenses in 2016 were $493,225,000, which was $10,228,000 lower than 2015. Annual operating expenses were lower in 2015 primarily due to lower than anticipated snow removal costs incurred during the winter months of 2016 and lower utility and fuel costs. In 2016, the Authority spent $21,423,000 less on snow removal costs as compared to 2015. Utility and fuel costs were lower than 2015 due to continued low natural gas and gasoline prices and above average temperatures which reduced heating usage and costs.

Debt service in 2016 was $773,078,000 and was approximately $111,652,000 higher than in 2015. Debt service increased primarily due to higher principal and interest payments on the Series 2015 E Bonds and Series 2014 A Bonds. The Series 2015 E Bonds were issued in September 2015 and 2016 included a full year of interest expense for those Bonds. Interest on the Series 2014 A Bonds was paid from bond proceeds (capitalized interest) in 2015 and became payable from revenues after May 2016.

After providing for required funding to the Charges Fund, the Maintenance Reserve Fund and the Special Project Reserve Fund, the Authority deposited $393,130,000 into its General Reserve Fund in 2016. The Authority's expenses of $334,119,000 consist primarily of $264,000,000 for the State Transportation Capital Plan, $22,000,000 for State Transportation Trust Fund payments, $8,001,000 for feeder road payments to the State Department of Transportation and $10,750,000 on extraordinary snow costs.

Fiscal Year 2015

Revenues available for operating expenses, debt service and reserves totaled $1,722,298,000 in 2015, which was $82,616,000, or 5.0 %, more than the revenues of $1,639,682,000 in 2014. Toll revenue was the principal source of revenue and in 2015 tolls constituted approximately 88.4% of total revenues. Revenues from tolls were $1,523,133,000 which was $77,385,000 or 5.4% more than the $1,445,748,000 earned in 2014. The increase in toll revenue was due in part to the favorable weather conditions since March 2015, which produced two major storms, both of which were declared to be States of Emergency. In addition to favorable weather, traffic benefited from improving economic conditions, comparatively low gas prices and the increased traffic from the completion of the Turnpike Interchange 6 to 9 widening. Traffic on the Turnpike increased by approximately 6.2% and revenue increased by 6.6% while Parkway toll transactions increased by about 2.4% and revenue increased by 2.2%.

In 2015, E-ZPass Fees accounted for 3.3% of the Authority's 2015 revenue. E-ZPass Fees increased $3,489,000 or 6.6%, to $56,262,000 from $52,773,000 in 2014. The increase in revenues was due to enhancements in enforcement efforts which increased administrative fee revenue collected from toll violators and an increase in membership fees as 126,000 new customer accounts were added in 2015. E-ZPass transactions in 2015 were 81.7% of all transactions on the Turnpike and 78.7% of all toll transactions on the Parkway increasing from 81.2% and 78.1%, respectively, in 2014.

Concession revenues were $38,993,000 and constituted about 2.3% of 2015 revenues. Concession revenues increased $2,151,000 or 5.8% from the $36,842,000 recorded in 2014. The increase was due to the higher gross profit margin on diesel fuel sales on the Turnpike and the opening of four convenience stores on the Parkway.

Investment income in 2015 was $11,266,000 or 0.7% of the Authority's total income for 2015. Investment income increased slightly, $76,000 or about 0.7% from 2014 as short term interest rates were at or near historical lows.

The Authority issued the Series 2009 F Bonds in April 2009 and the Series 2010 A Bonds in December 2010. Both Series were issued under the Build America Bond program authorized by the American Reinvestment and Recovery Act of 2009. Prior to March 1, 2013, the Federal Government reimbursed the Authority for 35% of the interest payable on both of these issues. See "CERTAIN RISK FACTORS – Federal Subsidy on Build America Bonds." The rebate constitutes pledged revenue under the Bond Resolution and totaled $75,908,000 in 2015 which increased $163,000 or 0.2% from $75,745,000 in 2014. This reimbursement constituted about 4.4% of the Authority's 2015 revenue.

Miscellaneous revenues were $13,104,000 or about 0.8% of the Authority's revenue. The 2015 amount was $749,000 or 5.4% lower than in 2014. The slight decrease was largely due to a decrease in non-recurring FEMA reimbursements for Superstorm Sandy offset by increases in surplus land property sales, advertising revenues and insurance recoveries. Arts Center rent was $3,632,000 or 0.2% of total Authority revenues and was $102,000 greater than 2014 due to higher variable payments from increased ticket sales and a contractual rent increase.

Operating Expenses in 2015 were $503,453,000, which was $30,681,000 higher than 2014. Annual operating expenses were impacted by higher than anticipated snow removal costs incurred during the severe winter weather in the first three months of 2015 and higher ETC System operating costs. ETC System operating costs increased due to higher transaction processing and credit card fees, due to toll transactions and revenue increases on both roadways, as well as higher violation collection costs arising from the increased violation toll and administrative fee collections.

Debt service in 2015 was $661,426,000, which was a $52,530,000 increase over 2014. Debt service increased primarily due to interest on the Series 2013A Bonds which became payable from revenues in 2015 as compared to payable from bond proceeds (capitalized interest) the prior year.

After providing for required funding to the Charges Fund, the Maintenance Reserve Fund and the Special Project Reserve Fund, the Authority deposited $419,525,000 into its General Reserve Fund in 2015. The Authority's expenses of $400,094,000 consist primarily of $324,000,000 for the State Transportation Capital Plan, $22,000,000 for State Transportation Trust Fund Payments, $8,001,000 for feeder road payments to the State Department of Transportation and $14,030,000 on extraordinary snow costs.

Summary of Projected Operations by the Traffic Engineer

On September 21, 2018, CDM Smith Inc. ("CDM Smith"), as the Traffic Engineer for the Authority, delivered to the Authority a detailed traffic and toll revenue projection study presenting its analyses and findings relative to recent trends in traffic and revenue on the Turnpike and the Parkway (the "Original Report"). The Original Report analyzed existing usage and the sensitivity of patrons to adjustments to toll charges as related to the quality of traffic service provided by the Turnpike and the Parkway versus alternate routes. The Original Report also incorporates analysis of land use developments that will affect traffic and all roadway improvements and operational modifications proposed by the Authority. On October 14, 2020, CDM Smith issued a drawdown letter, as supplemented on January 8, 2021 (the "2020 Draw Down Letter"), that updated the short-term forecasts in the Original Report by providing transaction and toll revenue forecasts through the year 2030 based upon actual transaction and toll revenue experience, as well as recent trends and forecasts for select economic indicators. Additionally, the 2020 Draw Down Letter also updates the forecasts contained in the Original Report to reflect the impacts of the COVID-19 pandemic and the increased toll rates that became effective on the Turnpike and the Parkway on September 13, 2020, and assumes an increase in those toll rates of 3% per year. See APPENDIX B – "2020 DRAW DOWN LETTER AND SUPPLEMENT, AND REPORT OF TRAFFIC ENGINEER" hereto.

Current professional practices and procedures were used by CDM Smith in the development of the Original Report and the 2020 Draw Down Letter. However, there is considerable uncertainty inherent in future traffic and revenue forecasts for any toll facility, including the Turnpike and the Parkway, and there may sometimes be differences, which could be material, between forecasted and actual results caused by events and circumstances beyond the control of the forecasters. Additionally, it should be recognized that the traffic and revenue forecasts contained in the Original Report and the 2020 Draw

Down Letter are intended to reflect the overall estimated long-term trend and actual experience in any given year may vary due to economic conditions and other factors.

The purpose of the Original Report and the 2020 Draw Down Letter was to produce estimates of traffic volume and annual toll revenue on the Turnpike and the Parkway through the year 2030, recognizing all improvements identified for the Authority's capital improvement programs, as well as potential impacts resulting from developments not related to the Turnpike or the Parkway. The traffic and revenue forecasts were based on a detailed analysis of the past relationship between actual Turnpike and Parkway transactions and actual socio-economic data. The development of the new forecasts relied on the most currently available information relating to the capital improvement programs, historic traffic and toll revenue trends through November 2020, and the Authority's most recent assumptions concerning toll schedules and discount programs. In addition, the estimated E-ZPass market share was developed for the forecast period based on historical trends and on future toll schedule assumptions. Site visits and meetings with local Metropolitan Planning Organizations and other agencies were conducted in order to complete the analysis of the potential growth in traffic and toll revenue on the Turnpike and Parkway contained in the Original Report.

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Table 6(a) provides a summary of CDM Smith's projected traffic volume on the Turnpike through 2030 by vehicle class. As shown in Table 6(a), total passenger car traffic on the Turnpike is expected to increase from approximately 169.6 million cars in 2020 to 255.6 million cars by 2030. Total annual commercial vehicle traffic for the Turnpike is estimated to increase from approximately 31.4 million vehicles in 2020 to 35.5 million vehicles in 2030. Total vehicle traffic for the Turnpike is expected to increase from approximately 201.1 million vehicles to approximately 291.0 million vehicles between the years 2020 and 2030, representing an average annual growth of approximately 3.8 percent.

Table 6(a) – Projected Volume for the Turnpike – Number of Vehicles (000s)

Year	Passenger Cars	Commercial Vehicles	Total Vehicles
2020(1)(2)(3)(4)(5)	169,639	31,420	201,059
2021(5)	202,088	30,859	232,947
2022(5)	214,641	31,286	245,927
2023(5)	221,341	31,893	253,234
2024(2)(5)	228,724	32,589	261,313
2025(5)	235,075	33,129	268,204
2026	244,039	33,755	277,794
2027	246,688	34,154	280,842
2028(2)	249,951	34,639	284,590
2029	252,728	35,051	287,779
2030	255,553	35,468	291,021

(1) Data through August 2020 is actual.

(2) Leap year, includes 29 days in February.

(3) A system-wide toll increase was applied on September 13, 2020.

(4) Reflects impacts of tolling at Interchange 19W and Bus Discount changes.

(5) Reflects impacts due to COVID-19 pandemic and lasting economic impacts through 2025.

Table 6(b) provides a summary of CDM Smith's estimated annual gross toll revenue from the Turnpike by vehicle class for the years 2020 through and including 2030. As shown, passenger car toll revenue is expected to increase from approximately $656.2 million in 2020 to approximately $1,578.4 million in 2030. Commercial vehicle toll revenue is estimated to increase from approximately $373.4 million to approximately $673.8 million over the same forecast period. Total annual gross toll revenue for the Turnpike is estimated to increase from approximately $1,029.6 million in 2020 to approximately $2,252.2 million in 2030. The average annual percent increase in total annual gross toll revenue amounts to approximately 8.5 percent.

Table 6(b) – Estimated Toll Revenues for the Turnpike ($000s)

Year	Passenger Car Toll Revenues	Commercial Vehicle Toll Revenues	Total Toll Revenues
2020[(1)(2)(3)(4)(5)]	656,207	373,437	1,029,644
2021[(5)]	963,304	451,667	1,414,971
2022[(5)]	1,053,435	471,072	1,524,507
2023[(5)]	1,117,159	494,125	1,611,284
2024[(2)(5)]	1,187,352	519,519	1,706,871
2025[(5)]	1,255,169	543,412	1,798,581
2026	1,340,424	569,730	1,910,154
2027	1,395,193	593,762	1,988,955
2028[(2)]	1,455,938	620,246	2,076,184
2029	1,515,876	646,453	2,162,329
2030	1,578,403	673,767	2,252,170

(1) Data through August 2020 is actual.

(2) Leap year, includes 29 days in February.

(3) A system-wide toll increase was applied on September 13, 2020.

(4) Reflects impacts of tolling at Interchange 19W and Bus Discount changes.

(5) Reflects impacts due to COVID-19 pandemic and lasting economic impacts through 2025.

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Table 6(c) provides a summary of CDM Smith's projected toll transactions and estimated total annual gross toll revenue for the Parkway through 2030. The Parkway does not separately project the number of transactions involving commercial vehicles or the revenues therefrom since commercial vehicles are only allowed below Exit 105 and provide revenues that amount to less than 4% of total Parkway revenues.

As shown in Table 6(c), CDM Smith's estimates that total toll transactions on the Parkway will increase from approximately 315.1 million transactions in 2020 to 401.9 million transactions by 2030. This represents an average annual increase in toll transactions of approximately 2.5 percent. As shown in Table 6(c), total annual gross toll revenue on the Parkway is estimated by CDM Smith to be approximately $380.6 million in 2020. With normal growth, along with all assumed impacts, CDM Smith estimates that such revenue will increase to approximately $751.0 million in 2030. This represents an average increase in total gross toll revenue for the Parkway of approximately 7.3 percent per year.

Table 6(c) – Parkway – Number of Transactions (000s) and Amount of Toll Revenues ($000s)

Year	Total Toll Transactions	Total Toll Revenues
2020(1)(2)(3)(4)(5)	315,123	380,617
2021(5)	355,877	505,770
2022(5)	363,085	533,546
2023(5)	369,474	559,728
2024(2)(5)	376,850	588,559
2025(5)	382,393	615,668
2026	391,251	649,390
2027	393,615	672,955
2028(2)	396,946	699,052
2029	399,417	724,557
2030	401,925	751,035

(1) Data through August 2020 is actual.

(2) Leap year, includes 29 days in February.

(3) A system-wide toll increase was applied on September 13, 2020.

(4) Reflects impacts of tolling at Interchange 19W and Bus Discount changes.

(5) Reflects impacts due to COVID-19 pandemic and lasting economic impacts through 2025.

Table 6(d) provides a summary of CDM Smith's estimated annual gross toll revenue for both the Turnpike and the Parkway during the years 2020 through and including 2030. As shown in Table 6(d), annual gross toll revenue for both the Turnpike and the Parkway is estimated to be approximately $1,410.3 million in 2020. With normal growth, along with all assumed impacts, CDM Smith estimates that such revenue will increase to approximately $3,003.2 million in 2030. This represents a compound growth rate in total gross toll revenue from both the Turnpike and the Parkway of approximately 8.2 percent per year.

Table 6(d) – Estimated Gross Toll Revenue for both the Turnpike and the Parkway ($000s)

Year	Turnpike Toll Revenues	Parkway Toll Revenues	Total Toll Revenues
2020(1)(2)(3)(4)(5)	1,029,644	380,617	1,410,261
2021(5)	1,414,971	505,770	1,920,741
2022(5)	1,524,507	533,546	2,058,053
2023(5)	1,611,284	559,728	2,171,012
2024(2)(5)	1,706,871	588,559	2,295,430
2025(5)	1,798,581	615,668	2,414,249
2026	1,910,154	649,390	2,559,544
2027	1,988,955	672,955	2,661,910
2028(2)	2,076,184	699,052	2,775,236
2029	2,162,329	724,557	2,886,886
2030	2,252,170	751,035	3,003,205

(1) Data through August 2020 is actual.

(2) Leap year, includes 29 days in February.

(3) A system-wide toll increase was applied on September 13, 2020.

(4) Reflects impacts of tolling at Interchange 19W and Bus Discount changes.

(5) Reflects impacts due to COVID-19 pandemic and lasting economic impacts through 2025.

For a more detailed discussion of the assumptions and methodology used by CDM Smith in connection with all of its forecasts summarized above, see APPENDIX B – "2020 DRAW DOWN LETTER AND SUPPLEMENT, AND REPORT OF TRAFFIC ENGINEER" attached hereto.

Summary of the Report of the Consulting Engineer

HNTB Corporation ("HNTB") serves as the Consulting Engineer to the Authority. In this capacity, HNTB has prepared a report dated January 10, 2021 estimating (a) the operating expenses of the Turnpike System, which is comprised of the Turnpike and the Parkway, for the years 2021 through and including 2030, and (b) the required deposits to the Maintenance Reserve Fund and the Special Project

Reserve Fund for the years 2021 through and including 2030. Amounts on deposit in the Maintenance Reserve Fund are used to provide for annual major maintenance of the roadways and bridges, while amounts on deposit in the Special Project Reserve Fund are intended to be used for the annual maintenance and improvement of all other elements of the Turnpike System that in some manner contribute to the proper and efficient operation of the Turnpike and the Parkway.

With respect to the operating expenses of the Turnpike System, HNTB estimates that such expenses will be approximately $622,324,000 in 2021 and will increase to approximately $777,197,000 in 2030, representing an average annual increase of approximately 2.77%.

HNTB's report also estimates that deposits into the Maintenance Reserve Fund and the Special Project Reserve Fund combined should be budgeted at $210,000,000 in 2021 and should be increased to $329,972,000 by 2030.

HNTB's report also discusses the state of good repair of the Turnpike System, including the Authority's annual inspection program for the roads, bridges, buildings, toll plazas and ancillary facilities and safety devices comprising the Turnpike System, and contains a description of the pavement structure utilized on the Turnpike which minimizes major rehabilitation needs and allows the Authority to remove and replace only the top two inches of pavement as part of its resurfacing program for the Turnpike. Additionally, HNTB's Report contains a detailed description and status of the projects included in the 2008 CIP, the 2019 CIP and the 2021-2025 CIP.

For a more detailed discussion of the assumptions and methodology used by HNTB in estimating future operating expenses of the Turnpike System and the required deposits to the Maintenance Reserve Fund and the Special Project Reserve Fund, as well as the state of good repair of the Turnpike System, the pavement structure utilized on the Turnpike and the 2008 CIP, the 2019 CIP and the 2021-2025 CIP, see APPENDIX C – "REPORT OF CONSULTING ENGINEER" attached hereto.

Summary of Projected Net Revenues and Debt Service Coverage of the Turnpike System

The following table provides a summary of the Authority's projected Revenues, Operating Expenses, Debt Service and Net Revenues for its fiscal years 2020 through and including 2026 for the Turnpike System. The information contained in this table constitutes "forward-looking statements" for purposes of this Official Statement. Accordingly, the achievement of the results and other expectations contained in this table involves known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements to be materially different from the future results and other expectations of the Authority described in or expressed or implied by the information set forth in this table.

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New Jersey Turnpike Authority

Projected Revenues, Expenditures, and Debt Service Coverage ($000s)

(Based on Bond Resolution Provisions, Not in Accordance with GAAP)

Fiscal Year Ending 12/31	Actual 2019	Act./Est. 2020	Budget 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025	Projected 2026
Revenues								
Toll Revenues								
Turnpike Tolls (1)	1,176,476	1,014,858	1,414,971	1,524,507	1,611,284	1,706,871	1,798,581	1,910,154
Parkway Tolls (1)	435,792	372,510	505,770	533,546	559,728	588,559	615,668	649,390
E-ZPass Fees	80,329	93,217	84,500	86,190	87,914	89,672	91,466	93,295
Federal Subsidy for Series 2009 F and Series 2010 A Bonds (2)	76,725	77,766	77,010	77,010	77,010	77,010	77,010	77,010
Concession Revenue	33,104	31,927	31,000	33,000	36,000	38,000	38,760	39,535
Other Revenue	59,579	34,757	36,217	35,686	36,399	37,127	37,870	38,000
Total Revenues	**1,862,005**	**1,625,034**	**2,149,468**	**2,289,939**	**2,408,335**	**2,537,239**	**2,659,355**	**2,807,384**
Operating Expenses (3)	**(530,935)**	**(515,595)**	**(622,324)**	**(637,882)**	**(653,829)**	**(670,175)**	**(686,929)**	**(704,102)**
Total Revenues Available for Debt Service	**1,331,070**	**1,109,439**	**1,527,144**	**1,652,057**	**1,754,506**	**1,867,064**	**1,972,425**	**2,103,282**
Future Debt Issuance	-		500,000	750,000	1,000,000	1,000,000	1,000,000	1,000,000
Existing Debt Service (4)(5)(6)	(824,281)	(659,017)	(764,274)	(820,794)	(787,893)	(801,035)	(759,709)	(812,032)
Series 2021A Debt Service			(18,258)	(20,100)	(20,100)	(20,100)	(20,100)	(20,100)
Series 2021B Debt Service			(14,719)	(18,205)	(65,165)	(99,093)	(149,761)	(99,092)
Proposed Debt Service on $500M in 2021, $750M in 2022 & $1B 2023 onwards	-		(14,450)	(72,250)	(130,050)	(187,850)	(245,650)	(303,450)
Net Debt Service	(824,281)	(659,017)	(811,700)	(931,349)	(1,003,208)	(1,108,078)	(1,175,220)	(1,234,673)
Total Revenues Available After Debt Service	**506,789**	**450,422**	**715,444**	**720,708**	**751,298**	**758,986**	**797,205**	**868,608**
Payments to Charges Fund	-	-	-	-	-	-	-	-
Cash Flow Available for Reserves	**506,789**	**450,422**	**715,444**	**720,708**	**751,298**	**758,986**	**797,205**	**868,608**
Maintenance Reserve Fund (3)	(131,468)	(134,097)	(160,000)	(200,000)	(210,000)	(220,000)	(230,000)	(236,900)
Special Project Reserve Fund (3)	(41,300)	(41,300)	(50,000)	(50,000)	(51,500)	(53,045)	(54,636)	(56,275)
Net Revenues Available for General Reserve Fund	**334,021**	**275,025**	**505,444**	**470,708**	**489,798**	**485,941**	**512,569**	**575,433**
TTF Payments	(22,000)	(22,000)	(22,000)	(22,000)	(22,000)	(22,000)	(22,000)	(22,000)
Feeder Road Maintenance Agreement	(3,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)
Existing State Transportation Funding Agreement (7)	(154,000)	(129,000)	(77,000)	-	-	-	-	-
Anticipated Amounts for Additional State Transfers (8)	-	-	(187,500)	(375,000)	(375,000)	(375,000)	(375,000)	(375,000)
General Reserve Spending	(103,732)	(50,543)	(53,345)	(53,345)	(53,345)	(53,345)	(53,345)	(53,345)
Transfer to Construction Fund Account - Net	(25,000)	(100,653)	(52,530)	(29,050)	(30,800)	(30,035)	(29,000)	(30,000)
Net Annual General Reserve Fund Increase (Decrease)	**25,789**	**(29,671)**	**110,569**	**(11,187)**	**6,153**	**3,061**	**30,724**	**92,588**
Ending General Reserve Fund Balance	**440,128**	**410,457**	**521,026**	**509,839**	**515,991**	**519,052**	**549,777**	**642,365**
Debt Service Coverage Ratio								
Net Revenues to Debt Service Coverage Ratio	**1.61**	**1.68**	**1.88**	**1.77**	**1.75**	**1.68**	**1.68**	**1.70**
Net Revenues to Debt Service and Reserves Coverage Ratio	**1.34**	**1.33**	**1.49**	**1.40**	**1.39**	**1.35**	**1.35**	**1.38**

Totals may not add due to rounding

Footnotes:

(1) From 2020 Draw Down Letter of CDM Smith dated October 14, 2020

(2) Assumes a 5.7% reduction in BAB Subsidy throughout projection period

(3) From Consulting Engineer Report by HNTB Corporation dated January 10, 2021

(4) Existing debt service assumes swapped debt will achieve synthetic fixed rate and includes the applicable spreads of the FRNs. The unhedged portion of the 2015A Bonds ($5,000,000) assumes the maximum interest rate of 12%

(5) Bonds with mandatory tender dates are assumed to roll over at their respective current spreads through maturity

(6) Net of debt service refunded by the Series 2021 B Bonds

(7) Includes $129 annual payments through 6/30/2021 and $12.5 million payment towards the debt service on Portal North Bridge Project

(8) Anticipates $375 million annual payments are made from 7/1/2021 forward including $25 million payment towards debt service on Portal North Bridge Project

Environmental Matters

The Turnpike

The Authority continues with the remediation of environmental contamination resulting from historical discharges from underground/above-ground storage tanks located at the service areas, maintenance districts and interchanges along the Turnpike. Progress is being made in addressing the contamination with Unrestricted and/or Limited Restricted Response Action Outcomes ("RAOs") being issued at multiple locations. The Authority met the New Jersey Department of Environmental Protection ("NJDEP") Remedial Investigation deadline of May 2016 for all applicable Turnpike sites with the focus now on Remedial Action ("RA"). The Authority has submitted RA timeframe extensions for multiple sites in order to extend the regulatory and/or mandatory timeframes. The remediation progress has eliminated all but one groundwater treatment system located at a single service area on the Turnpike. This single groundwater treatment system will remain in operation for the foreseeable future and will necessitate periodic monitoring, sampling and maintenance under directives issued by the NJDEP. The Authority and the current operator of the service areas on the Turnpike have undertaken an aggressive remedial program, including, but not limited to, contaminated soil removal as part of the improvement program for the service areas, which will extend through 2025.

In the late 1980's, the NJDEP determined that residues from the processing of chromium ore were distributed as fill material on construction projects throughout Hudson County, New Jersey, and in surrounding environs. The contaminant levels at certain sites receiving chromium ore processing residue exceed the currently established standards. Seven sites owned or controlled by the Authority are included on the NJDEP's list of sites containing contamination from chromium ore processing residue above the currently established levels; however, as described below, the Authority has accepted responsibility to remediate conditions at three of the affected sites and bears no remedial responsibility for any of the additional sites.

In May 2005, the NJDEP instituted litigation against the three firms which had generated the chromium ore processing residue. The Authority was not named as a defendant in such litigation by the NJDEP. In March 2006, the Authority was named as a third-party defendant by one of the firms as a result of the Authority's ownership of certain parcels impacted by the residue. The Authority accepted responsibility to remediate conditions at three affected sites with the understanding that, by doing so, it will not have any responsibility for any additional sites. The cost to complete the remediation of the three sites is estimated to be approximately $17 million over a 30-year period. Remediation of one of those affected sites has been completed and a RAO was issued to close the site. Remediation design is complete at another one of those sites and it is possible the remediation of that site will be complete by 2021. Remedial activities at the third site are delayed due to site operations.

The Parkway

The Authority continues with the remediation of environmental contamination resulting from historical discharges from underground/above ground storage tanks located at the service areas, toll plazas, maintenance districts, a former communication tower, and State Police barracks along the Parkway. Progress is being made in addressing the contamination and Unrestricted and/or Limited Restricted RAOs have been issued at multiple locations. The Authority met the NJDEP Remedial Investigation (RI) deadline of May 2016 for all but two Parkway sites. Of these two sites, the Remedial Investigation (RI) for one site was completed with the focus now on Remedial Action (RA). The Authority has submitted RA timeframe extensions for multiple sites in order to extend the regulatory and/or mandatory timeframes.

The remediation progress has eliminated all but one groundwater treatment system located at one service area on the Parkway roadway. This groundwater treatment system will be in operation for the foreseeable future and will necessitate periodic monitoring, sampling and maintenance under directives issued by the NJDEP.

Generally

With respect to the Turnpike System generally, soil contamination, groundwater contamination and/or solid waste found on off-site properties, Authority properties, and properties for which the Authority has assumed remediation responsibility, as well as waterway contamination that is alleged to have resulted from operations conducted at Parkway facilities, have resulted in claims against the Authority and may lead to additional claims in the future. Claims for reimbursement of remediation costs and other alleged damages have been asserted or may be forthcoming from other parties responsible for undertaking remediation activities at these properties. As a result, it may be necessary for the Authority to undertake, fund or reimburse others for remediation activities at these properties. The Authority believes the ultimate resolution of these claims will not have a material adverse impact on the financial position of the Authority. As to environmental regulatory compliance expenditures, such costs are also not expected to have a material adverse impact on the financial position of the Authority.

State and Interstate Highways

The following is a summary of the relationship between the Turnpike or Parkway and certain existing or planned major State and Interstate highways. In certain cases, these routes serve as "feeders" of traffic to the Turnpike or Parkway, while in other cases, as indicated, the complete routes or certain segments thereof are competitive with the Turnpike or Parkway. In addition, the Turnpike and Parkway intersect each other at Interchange 11 and Interchange 129, respectively, in Woodbridge.

Interstate Route 95 (I-95). This route constitutes the principal north-south Interstate Route between Maine and Florida, and is a very heavily traveled highway. I-95 enters the State in the north via the George Washington Bridge. Just west of the bridge, I-95 becomes part of the Turnpike for a distance of approximately 70 miles to Interchange 6 and across the Pearl Harbor Memorial Extension. Thereafter, I-95 continues onto the Pennsylvania Turnpike to a point west of the Delaware River.

Interstate Route 195 (I-195). This route begins at I-295 just south of Trenton and extends easterly, intersecting with the Turnpike at Interchange 7A. It continues easterly through Monmouth County, terminating at Route 34 just west of the Parkway. This route provides an east-west connection between Trenton and the Jersey Shore.

Interstate Route 295 (I-295). This route extends from the Delaware Memorial Bridge northeasterly in a corridor between the Turnpike and the Delaware River, to an intersection with I-195 west of Interchange 7A. Beyond I-195, I-295 continues northerly to an intersection with US Route 1, north and west of Trenton. The I-295 segment from the Delaware Memorial Bridge to Interchange 7 is in close proximity and roughly parallel to the Turnpike.

Interstate Route 278 (I-278). This route is an auxiliary Interstate Highway in New Jersey and New York. The New York segment travels through four of the five boroughs, excluding Manhattan. The New Jersey segment begins at US Route 1 & 9 traveling easterly to the Goethals Bridge and intersects with the New Jersey Turnpike at Interchange 13.

Interstate Route 287 (I-287). This route is a circumferential bypass of the New York-Northern New Jersey Metropolitan Area. At its southern end, it joins the Turnpike at Interchange 10, swings westward to the area of Bound Brook, thence in a large circular pattern through Morristown and connects at its northern end with the New York State Thruway at Suffern, New York.

Interstate Route 78 (I-78). This route enters the State at the Holland Tunnel, follows the Turnpike's Newark Bay-Hudson County extension (which has been designated I-78) to its intersection with the mainline Turnpike at Newark Airport (Interchange 14) and continues westward and connects with the Parkway in Union and then runs roughly along the alignment of US Route 22 to Phillipsburg, New Jersey – Easton, Pennsylvania.

Interstate Routes 80 and 280 (I-80 and I-280). I-80 is one of the principal east-west routes of the Interstate System extending from New York City to San Francisco. It begins in the State in the vicinity of Ridgefield Park and crosses the State along the same general alignment as US Route 46 as far as Netcong, New Jersey, then swings along a more northerly alignment to the vicinity of the Delaware Water Gap. Crossing Pennsylvania, the route is known as the Keystone Shortway. I-80 directly connects with the Parkway in Saddlebrook and with the Turnpike via I-95 at Ridgefield Park. I-280, an alternate route of I-80, branches off from I-80 in the vicinity of Parsippany-Troy Hills, Morris County, and follows a southeasterly alignment through the Oranges, Newark and Harrison, connecting with the Parkway in East Orange and the Turnpike at Interchange 15W, just north of the Passaic River.

US Route 1 & 9. US Route 1 is a principal urban arterial route and, before the existence of the interstate highway system, served as the original Maine to Florida highway. In the State, US 1 follows a generally northeast-southwest path, closely paralleling the Turnpike from New Brunswick north to the vicinity of Jersey City. South of New Brunswick the paths diverge as US 1 continues on a direct path to Trenton. North of New Brunswick, US 1 joins with US 9. The northern section of US 1&9 and its companion truck route, US 1&9T, serve as feeder roads to the Holland Tunnel. To a limited extent, US 1 and US 1&9T, represent competitive routes to the Turnpike notwithstanding the presence of numerous signal controlled intersections and heavy congestion during peak travel times.

US Route 130. The northern terminus of this highway is south of New Brunswick, where it intersects with US 1. The road roughly parallels the Turnpike throughout its length between the northern terminus and the Camden area. The road has a character similar to southern sections of US 1. There are numerous signalized intersections and such road is heavily congested.

US Route 9. US Route 9 begins in the State at the Cape May Lewes Ferry west of the southernmost terminus of the Parkway in Cape May County. US Route 9 generally parallels the Parkway along the southern half of the Parkway from Cape May to Toms River. There, US Route 9 runs west of the Parkway and rejoins the Parkway at Interchange 123 in Sayreville, just south of the Raritan River. The Parkway and US Route 9 share river crossings at Great Egg Harbor and the Mullica River, and are co-aligned in a four mile section of the Parkway in Cape May County and a three mile section in Ocean County. US Route 9 is a competitive route to the Parkway for the southernmost eighty miles of the Parkway.

Atlantic City Expressway. The Atlantic City Expressway is a limited access toll road operated by the South Jersey Transportation Authority. It runs northwesterly across the State from Atlantic City across the Parkway to Route 42, southeast of Camden. The Atlantic City Expressway provides access to the South Jersey beach resorts from the Philadelphia/Camden area.

Route 17. Route 17 runs northwesterly through Bergen County from North Arlington to Mahwah, where it merges with Interstate 287. This route provides a connection between the George Washington Bridge and Lincoln Tunnel to the New York State Thruway.

Route 72. Route 72 runs northwesterly from the midpoint of Long Beach Island to Route 70 in Pemberton Township. Route 72 provides access from the northern part of the State to the shore resorts in southern Ocean County from the Parkway.

Route 33. Route 33 begins in Trenton, Mercer County. It continues easterly across the State and terminates in Neptune Township. This route provides and east-west connection between Trenton and Monmouth County.

Route 37. Route 37 is a principal arterial route in northern Ocean County. This route begins on Ocean County's northern barrier island and terminates at Route 70 in Lakehurst. Route 37 serves as a collector for traffic traveling both north and south on the Parkway and provides access to the shore area from the north, via the Parkway.

Route 70. Route 70 begins in southern Monmouth County, just north of the Manasquan River. It continues westerly across the State and terminates in Camden. This route provides an east-west connection between Philadelphia/Camden and southern Monmouth County.

Route 440. There are two segments of Route 440, one in Middlesex County and the other in Hudson County. The Middlesex County segment links the New Jersey Turnpike and the southerly terminus of Interstate 287 to Staten Island, New York. This segment then intersects the Garden State Parkway 2 miles east, then continues easterly to the Outerbridge Crossing in Perth Amboy. The Hudson County segment of Route 440 runs from the Bayonne Bridge in Bayonne to US Route 1 Truck in Jersey City. Route 440 intersects at the New Jersey Turnpike Interchange 14A in Jersey City.

US Route 206. Route 206 extends from the Pennsylvania state line in northwest New Jersey to the Atlantic City Expressway in the vicinity of Hammonton. The road runs essentially north-south and intersects the Turnpike at Interchange 7. The road has many closely spaced signalized intersections near population centers such as Trenton, Princeton and Somerville and more rural characteristics along its northern and southern limits.

State Route 18. The northern terminus of State Route 18 is located in Piscataway, just south of its intersection with Interstate Route 287. The roadway extends in a southeasterly direction and terminates at Interstate 195 in Wall Township. The northern portion of Route 18 is similar to US 1 in that it is flanked with retail development and has many closely spaced traffic signals for cross streets and turning movements. South of Old Bridge the roadway becomes a four lane expressway providing direct access to the Parkway and shore towns from the New Brunswick area.

Interstate Route 495 (I-495). This route intersects the Turnpike at Interchanges 16E and 17 and provides direct access to New York City via the Lincoln Tunnel.

CERTAIN RISK FACTORS

The Series 2021 B Bonds are revenue obligations of the Authority which are payable solely from the Pledged Revenues and the other moneys, funds and accounts pledged to the payment thereof pursuant to the Resolution. The following is a discussion of certain risk factors that should be considered in evaluating an investment in the Series 2021 B Bonds. This discussion does not purport to be either comprehensive or definitive. The order in which risks are presented is not intended to reflect either the likelihood that a particular event will occur or the relative significance of such an event. Moreover, there may well be other risks associated with an investment in the Series 2021 B Bonds in addition to those set forth herein.

General

The financial forecasts set forth in this Official Statement are based generally upon certain assumptions and projections as to estimated revenues and operating and maintenance expenses. See "2020 DRAW DOWN LETTER AND SUPPLEMENT, AND REPORT OF TRAFFIC ENGINEER" included as Appendix B to this Official Statement. Inevitably, some underlying assumptions and projections used to develop the forecasts will not be realized, and unanticipated events and circumstances may occur. Therefore, the actual results achieved during the forecast periods will vary from the forecasts, and such differences may be material.

Forward-Looking Statements

The statements contained in this Official Statement that are not purely historical are forward-looking statements, including statements regarding the Authority's expectations, hopes, intentions or strategies regarding the future and the projections contained in this Official Statement and in the 2020 Draw Down Letter and Report of the Traffic Engineer included as Appendix B to this Official Statement. All forward-looking statements included in this Official Statement are based on information available to the Authority on the date hereof, and the Authority assumes no obligation to update any such forward-looking statements.

The forward-looking statements herein are necessarily based on various assumptions and estimates that are inherently subject to numerous risks and uncertainties, including risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes or developments in social, economic, business, industry, market, legal and regulatory circumstances and conditions and actions taken or omitted to be taken by third parties, including customers, suppliers, business partners and competitors, and legislative, judicial and other governmental authorities and officials. Assumptions related to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions and future business decisions, all of which are difficult or impossible to predict accurately and, therefore, there can be no assurance that the forward-looking statements included in this Official Statement will prove to be accurate.

COVID-19 Pandemic

As a result of the spread of the COVID-19 pandemic to the State of New Jersey in March 2020 and several Executive Orders issued by the Governor of the State of New Jersey in response thereto, including, specifically, Executive Orders 107 and 108 issued on March 21, 2020, which ordered all residents of the State to remain at home and the closure of all non-essential retail businesses in the State until further notice, beginning in March 2020 and continuing since then, the Authority has experienced a decrease in toll transactions and a loss of revenues from tolls collected on the Turnpike and the Parkway. Since the low point in April 2020, the number of toll transactions on both roadways has recovered substantially and toll revenue from the Turnpike and the Parkway has increased each month since September due mostly to the toll increases on the Turnpike and Parkway that became effective on September 13, 2020.

The financial impacts of the COVID-19 pandemic on the Authority were partially offset by lower than expected operating expenses in 2020. Operating expenses were under budget through November 2020 primarily due to lower than budgeted snow and severe weather costs, health benefit costs, salaries and electronic toll collection costs. Snow and severe weather costs were under budget as 2020 had generally milder winter weather than previous years. Health benefits, salaries, electronic toll collection costs were all lower than budget due to the impacts of the COVID-19 pandemic.

The financial impacts of the COVID-19 pandemic on the Authority were also offset by the Authority's issuance of its Series 2020 B Bonds and Series 2020 C Bonds in June 2020, which refunded and restructured certain maturities of the Authority's outstanding Bonds, thereby reducing the Authority's interest and principal debt service payments in the last six months of 2020.

CDM Smith has projected that COVID-19 will have a negative impact on the Authority's toll revenues through 2025.

Given that the duration and severity of the COVID-19 pandemic is unknown at this time, the Authority cannot predict what the impact of COVID-19, if any, will be on its operational and/or financial performance in the future.

Certain Matters Relating to Enforceability of Obligations

The remedies available to the holders of the Series 2021 B Bonds upon the occurrence of an Event of Default under the Resolution are, in many respects, dependent upon regulatory and judicial actions that are often subject to discretion or delay. Under existing law and judicial decisions, including specifically the United States Bankruptcy Code, the remedies specified in the Resolution may not be readily available or may be limited. In addition, enforcement of such remedies (i) may be subject to general principles of equity which may permit the exercise of judicial discretion, (ii) are subject to the exercise in the future by the State and its agencies and political subdivisions of the police power inherent in the sovereignty of the State, (iii) are subject, in part, to the provisions of the United States Bankruptcy Code and other applicable bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or affecting the enforcement of creditors' rights generally, now or hereafter in effect, and (iv) are subject to the exercise by the United States of the powers delegated to it by the Constitution of the United States of America. The various legal opinions to be delivered concurrently with the delivery of the Series 2021 B Bonds will be qualified to the extent that the enforceability of certain legal rights related to the Series 2021 B Bonds is subject to limitations imposed by bankruptcy, reorganization, insolvency or other similar laws affecting the rights of creditors generally and by equitable remedies and proceedings generally.

Legislative Action

Legislation is introduced from time to time in the State Legislature which, if adopted, may affect the Authority and/or the Turnpike System. The Authority cannot predict whether or not these bills will be enacted into law or how such legislation may affect the Authority and its ability to pay debt service on the Series 2021 B Bonds.

Decline in Toll Revenues

The information provided with respect to toll revenues collected by the Authority is based on historical data. The amount of future toll revenues to be collected by the Authority depends upon a number of factors, some of which are not in the control of the Authority. Some of these factors include a decline in traffic on the Turnpike System due to general economic conditions, severe weather conditions, diversion of traffic to alternative non-toll routes, increased fuel costs, availability of alternate forms of travel and shipping, and government regulations, such as Clean Air Act requirements, increased mileage standards or higher fuel taxes, which could significantly restrict motor vehicle use. Although the Authority has covenanted in the Resolution to fix, charge and collect tolls for the use of the Turnpike System in amounts so that, in each calendar year, the Net Revenues shall at least equal the Net Revenue Requirement for such year, there can be no assurance that the traffic on the Turnpike System will continue to be sufficient for the Authority to generate the necessary revenues to meet its obligations under the Resolution.

Adverse Changes to Third Party Financial Institutions

Adverse changes in the financial condition of certain third-party financial institutions may adversely affect the Authority's financial position. Different types of investment and contractual arrangements may create exposure for the Authority to such institutions including: (i) risk to the Authority's investment portfolio due to defaults or changes in market valuation of the debt securities of such institutions; and (ii) counterparty risk related to the Qualified Swap Agreements used by the Authority to hedge its interest rate risks with respect to a portion of its Outstanding Bonds.

Failure to Pay Mandatory Purchase Price and other Market Disruptions

As described under the section entitled "DIRECT PURCHASE TRANSACTIONS" herein, in the event the Authority cannot pay the purchase price for all or a portion of its Direct Purchase Bonds on any extraordinary mandatory purchase date, such Direct Purchase Bonds will be subject to mandatory redemption in the amounts and on the dates as described under the section entitled "DIRECT PURCHASE TRANSACTIONS" herein. In addition, the Authority's Outstanding Series 2017 C-6 Bonds are also subject to mandatory tender on January 1, 2023 as set forth in the Resolution. In the event the Authority cannot pay the purchase price for all or a portion of the Series 2017 C-6 Bonds on January 1, 2023, a Delayed Remarketing Period will commence with respect to any unpurchased Series 2017 C-6 Bonds on January 1, 2023 as described in the Resolution, during which such Series 2017 C-6 Bonds will bear interest at the Stepped Interest Rate as described in the Resolution.

The credit markets experience substantial disruption from time to time. There can be no assurance as to the timing of any disruption or the extent of any recovery that may be made by the credit markets. The Authority's currently plans to raise additional funds to pay the costs of the 2020 Long-Range Capital Plan through the issuance of additional Series of Bonds under the Resolution. If the Authority is unable to access the credit markets as a result of any such disruption, it is likely to have to delay the commencement and/or completion of the 2020 Long-Range Capital Plan through the issuance of additional Series of Bonds under the Resolution. If the Authority is unable to until such time as the capital markets rebound. The effect of such delays could result in increased costs for the Projects comprising the 2020 Long-Range Capital Plan.

Risks Associated With Qualified Swap Agreements

Based upon the current ratings of the applicable Bonds, the Authority is currently not required to post collateral under any of its Qualified Swap Agreements. With respect to all Qualified Swap

Agreements, other than the Series 2017 D-2, D-3 and D-4 Swap Agreement with Citibank, N.A., the rating on the applicable Bonds would have to drop below either Baa2 from Moody's or below BBB from S&P, for any collateral posting requirements to be imposed upon the Authority under such agreements. With respect to the Series 2017 D-2, D-3 and D-4 Swap Agreement with Citibank, N.A. only, the rating on the Series 2017 D-2, D-3 and D-4 Bonds would have to drop below A2 from Moody's, below A from S&P and below A from Fitch for any collateral posting requirements to be imposed upon the Authority under such agreements. If the Authority is required to post collateral under any such agreements, it could have a material adverse effect on the Authority's liquidity position.

The Authority is exposed to basis risk under its current Qualified Swap Agreements as the variable rate received from the counterparties under the Qualified Swap Agreements may not perfectly match the variable rate paid on the Bonds intended to be hedged by such Qualified Swap Agreements.

Each of the Authority's current Qualified Swap Agreements provides that an automatic, immediate termination of such Agreement shall take place upon the occurrence of the dissolution, bankruptcy, insolvency, liquidation or any similar related events involving or related to the Authority's counterparty under such Agreement. If a Qualified Swap Agreement is automatically and immediately terminated as a result of any such event and the fair value of such Qualified Swap Agreement is negative to the Authority on the date of such automatic immediate termination, the Authority could be obligated to make a substantial termination payment to the counterparty and the Authority's financial position could be materially adversely affected during the period in which such termination payment would be required to be paid by the Authority.

Changes and Reforms Relating to LIBOR

On July 27, 2017, the Financial Conduct Authority (the "FCA") announced that it will no longer persuade or compel banks to submit rates for the calculation of the LIBOR rates after December 31, 2021. Subsequently, on November 30, 2020, the ICE Benchmark Administration Limited (commonly referred to as "ICE") announced its plan to extend the date that most U.S. LIBOR values would cease being computed and announced from December 31, 2021 to June 30, 2023. All of the Authority's Qualified Swap Agreements use a LIBOR based rate as a reference rate for determining the payment obligations of the counterparties thereunder. Additionally, several Series of the Authority's Outstanding variable rate Bonds use a LIBOR based rate as a reference rate for determining the interest rate on such Series of Bonds. It is not possible to predict the effect of the cessation of the computation and announcement of U.S. LIBOR values, any changes in the methods pursuant to which the LIBOR rates are determined or any other reforms to LIBOR that may be enacted, any of which may adversely affect the determination of LIBOR rates or result in the phasing out of LIBOR as a reference rate. Any such effects could result in a sudden or prolonged increase or decrease in reported LIBOR rates, or result in the replacement of LIBOR with other reference rates, and could have a negative impact on the market value of the Authority's Qualified Swap Agreements and the payment obligations of the counterparties thereunder, and/or significantly increase the interest payable on the Authority's Outstanding variable rate Bonds.

Costs of Construction of the Projects Included in the Capital Improvement Programs

In connection with the Projects included in the 2008 CIP, the 2019 CIP and the 2021-2025 CIP, there is a possibility of time delays and cost increases resulting from (i) design and construction problems and resulting change orders, (ii) environmental litigation or environmental administrative matters, (iii) the unavailability or cost of acquiring right-of-way, (iv) archeological, historic and unidentified subsurface conditions, (v) utility relocation problems, (vi) hazardous materials, (vii) force majeure events, (viii) litigation, or (ix) inflation. As a result, there can be no assurance that the costs of completion for the 2008 CIP, the 2019 CIP and/or the 2021-2025 CIP will not exceed current estimates, or that the completion of such projects will not be delayed beyond the scheduled completion date. Variations in cost estimates and delays in construction could be material.

There is also a possibility of insolvency or bankruptcy of the contractors during construction of one or more of the Projects included in the 2008 CIP, the 2019 CIP and/or the 2021-2025 CIP. While the contractors will be required to provide a performance bond and a payment bond, there can be no assurance that such bonds will be sufficient to assure timely completion of the Projects. Moreover, in the event that a default occurs under a construction contract by the contractor, there is a possibility of litigation between the Authority and the providers of the performance bonds and payment bonds and/or the contractor, which could further delay construction and the opening of the Projects. Any such delays and/or cost overruns could result in a substantial increase in the costs of the 2008 CIP, the 2019 CIP and/or the 2021-2025 CIP.

CDM Smith Traffic and Revenue Study

As the Traffic Engineer for the Authority, CDM Smith was requested by the Authority to prepare the Report presenting its analyses and findings relative to recent trends in traffic and revenue on the Turnpike and the Parkway. See APPENDIX B – "2020 DRAW DOWN LETTER AND SUPPLEMENT, AND REPORT OF TRAFFIC ENGINEER" attached to this Official Statement. The revenue forecasts contained in the Report are based upon certain assumptions set forth or incorporated therein. The Report is not a guarantee of any future events or trends and the forecasts therein are subject to future economic and social conditions and demographic developments that cannot be predicted with certainty. Further, the estimates and assumptions in the Report are inherently subject to significant economic and competitive uncertainties and contingencies, many of which are beyond the control of the Authority. Failure to achieve or realize any of the assumptions listed in the Report may have a materially adverse effect upon the Net Revenues actually realized by the Authority.

Federal Subsidy on Build America Bonds

A series of automatic Federal deficit reduction spending cuts known as "sequestration" took effect on March 1, 2013. Sequestration reduced the Federal subsidy paid to the Authority with respect to its outstanding Build America Bonds for the Federal fiscal years 2013, 2014, 2015, 2016, 2017, 2018, 2019 and 2020. Continued reductions in such Federal subsidy are anticipated for Federal fiscal year 2021 and beyond. The Authority currently has $3,225,000,000 in principal amount of Build America Bonds outstanding, and is entitled to receive approximately $81,665,325 in Federal subsidy annually through 2034 eventually declining to a final annual amount receivable in 2040 of approximately $16,898,609 with respect to such Build America Bonds. The Federal subsidy paid to the Authority with respect to its Build America Bonds was reduced by approximately 8.7% for the payment received in June 2013 for Federal fiscal year 2013, which ended September 30, 2013. The Federal subsidy payable to the Authority with respect to its Build America Bonds for Federal fiscal year 2014 was reduced by approximately 7.2%. The Federal subsidy payable to the Authority with respect to its Build America Bonds for Federal fiscal year 2015 was reduced by approximately 7.3%. The Federal subsidy payable to the Authority with respect to its Build America Bonds for Federal fiscal year 2016 was reduced by approximately 6.8%. The Federal subsidy payable to the Authority with respect to its Build America Bonds for Federal fiscal year 2017 was reduced by approximately 6.9%. The Federal subsidy payable to the Authority with respect to its Build America Bonds for Federal fiscal year 2018 was reduced by approximately 6.6%. The Federal subsidy payable to the Authority with respect to its Build America Bonds for Federal fiscal year 2019 was reduced by 6.2%. The Federal subsidy payable to the Authority with respect to its Build America Bonds for Federal fiscal year 2020 was reduced by 5.9%. The Federal subsidy payable to the Authority with respect to its Build America Bonds for Federal fiscal year 2021 will be reduced by 5.7% from the amounts anticipated at the time the Build America Bonds were issued. There can be no assurance that additional sequestration measures will not be enacted which will further reduce the amount of the subsidy the Authority receives on its Build America Bonds. The reduction in the amount of the Federal subsidy the Authority received and any future reduction in subsidy will require the Authority to use other funds to offset the loss of this subsidy. In addition, if any future shutdowns of the Federal government occur and continue or an extended period of time, the Federal subsidy payments to the Authority with respect to its Build America Bonds could be suspended or delayed.

Other Factors

Additional factors which may affect the financial condition of the Authority and the future operation of the Turnpike System include the following:

- Increased and/or unanticipated costs of operating the Turnpike System;
- Work stoppage, slowdown or action by unionized Authority employees;
- More and expanded mass transit systems;
- Complete or partial destruction or temporary closure of the Turnpike System for extended periods of time;
- Increased pension costs, unfunded healthcare and other non-pension postemployment benefits; and
- The potential for future Authority payments for non-Turnpike System purposes. See “SECURITY FOR THE BONDS – Potential Future Authority Payments for Non-Turnpike System Purposes” herein.

RATINGS

Moody’s Investors Services, Inc. (“Moody’s”) has assigned a rating of “A2” to the Series 2021 B Bonds. S&P Global Ratings, acting through Standard & Poor’s Financial Services LLC (“S&P”), has assigned a rating of “A+” to the Series 2021 B Bonds. Fitch Ratings (“Fitch”) has assigned a rating of “A” to the Series 2021 B Bonds.

Any desired explanation of the significance of such ratings should be obtained from Moody’s, S&P and Fitch, respectively. Certain information and materials, including information and materials not included in this Official Statement, were furnished by the Authority to Moody’s, S&P and Fitch. Generally, Moody’s, S&P and Fitch base their respective ratings on the information and materials so furnished and on their respective investigations, studies and assumptions.

There is no assurance that a particular rating will be maintained for any given period of time or that it will not be lowered, suspended or withdrawn entirely if, in the judgment of Moody’s, S&P or Fitch, as the case may be, circumstances so warrant. Any such change in or withdrawal of such rating could have an adverse effect on the market price or the marketability of the Series 2021 B Bonds.

UNDERWRITING

Citigroup Global Markets Inc., as representative, on behalf of itself and the other Underwriters listed on the cover page hereof (the “Underwriters”), has agreed, subject to certain conditions, to purchase all, but not less than all, of the Series 2021 B Bonds from the Authority at a purchase price of

$993,664,481.78 (which represents the principal amount of the Series 2021 B Bonds of $995,235,000.00, less an Underwriters' discount of $1,570,518.22).

The Underwriters will be obligated to purchase all of the Series 2021 B Bonds if any of the Series 2021 B Bonds are purchased. The Series 2021 B Bonds may be offered and sold to certain dealers (including underwriters and other dealers depositing such Series 2021 B Bonds into investment trusts) at yields higher/prices lower than the public offering yields/prices set forth on the inside front cover page of this Official Statement, and such public offering yields/prices may be changed from time to time by the Underwriters.

The following two paragraphs have been furnished by the Underwriters for inclusion in this Official Statement. The Authority does not guarantee the accuracy or completeness of the information contained in such paragraphs and such information is not to be construed as a representation of the Authority.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, advisory, investment management, principal investment, hedging, financing and brokerage activities. Certain of the Underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various investment banking services for the Authority, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the Underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt securities (or related derivative securities) and financial instruments (which may include bank loans and/or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve securities and instruments of the Authority.

The following paragraph has been furnished by Citigroup Global Markets Inc. ("Citigroup"), one of the Underwriters of the Series 2021 B Bonds, for inclusion in this Official Statement. The Authority does not guarantee the accuracy or completeness of the information contained in such paragraph and such information is not to be construed as a representation of the Authority.

Citigroup has entered into a retail distribution agreement (the "Citigroup Distribution Agreement") with Fidelity Capital Markets, a division of National Financial Services LLC (together with its affiliates, "Fidelity"). Under the Citigroup Distribution Agreement, Citigroup may distribute municipal securities to retail investors at the original issue price through Fidelity. As part of this arrangement, Citigroup will compensate Fidelity for its selling efforts.

The following paragraph has been furnished by J.P. Morgan Securities LLC ("JPMS"), one of the Underwriters of the Series 2021 B Bonds, for inclusion in this Official Statement. The Authority does not guarantee the accuracy or completeness of the information contained in such paragraph and such information is not to be construed as a representation of the Authority.

JPMS has entered into negotiated dealer agreements (each, a "Dealer Agreement" and together, the "Dealer Agreements") with each of Charles Schwab & Co., Inc. ("CS&Co.") and LPL Financial LLC ("LPL") for the retail distribution of certain securities offerings at the original issue prices. Pursuant to each Dealer Agreement, each of CS&Co. and LPL may purchase Series 2021 B Bonds from JPMS at the original issue price less a negotiated portion of the selling concession applicable to any Series 2021 B Bonds that such firm sells.

The following paragraph has been furnished by Morgan Stanley & Co. LLC, one of the Underwriters of the Series 2021 B Bonds, for inclusion in this Official Statement. The Authority does not guarantee the accuracy or completeness of the information contained in such paragraph and such information is not to be construed as a representation of the Authority.

Morgan Stanley & Co. LLC has entered into a retail distribution arrangement with its affiliate Morgan Stanley Smith Barney LLC. As part of the distribution arrangement, Morgan Stanley & Co. LLC may distribute municipal securities to retail investors through the financial advisor network of Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may compensate Morgan Stanley Smith Barney LLC for its selling efforts with respect to the Series 2021 B Bonds.

The following two paragraphs have been furnished by Wells Fargo Bank, National Association, acting through its Municipal Finance Group ("WFBNA"), one of the Underwriters of the Series 2021 B Bonds, for inclusion in this Official Statement. The Authority does not guarantee the accuracy or completeness of the information contained in such paragraphs and such information is not to be construed as a representation of the Authority.

Wells Fargo Securities is the trade name for certain securities-related capital markets and investment banking services of Wells Fargo & Company and its subsidiaries, including Wells Fargo Bank, National Association, which conducts its municipal securities sales, trading and underwriting operations through the Wells Fargo Bank, NA Municipal Finance Group, a separately identifiable department of Wells Fargo Bank, National Association, registered with the Securities and Exchange Commission as a municipal securities dealer pursuant to Section 15B(a) of the Securities Exchange Act of 1934.

WFBNA has entered into an agreement (the "WFA Distribution Agreement") with its affiliate, Wells Fargo Clearing Services, LLC (which uses the trade name "Wells Fargo Advisors") ("WFA"), for the distribution of certain municipal securities offerings, including the Series 2021 B Bonds. Pursuant to the WFA Distribution Agreement, WFBNA will share a portion of its underwriting compensation with respect to the Series 2021 B Bonds with WFA. WFBNA has also entered into an agreement (the "WFSLLC Distribution Agreement") with its affiliate, Wells Fargo Securities, LLC ("WFSLLC"), for the distribution of municipal securities offerings, including the Series 2021 B Bonds. Pursuant to the WFSLLC Distribution Agreement, WFBNA pays a portion of WFSLLC's expenses based on its municipal securities transactions. WFBNA, WFSLLC and WFA are each wholly-owned subsidiaries of Wells Fargo & Company.

TAX MATTERS

General

Interest on the Series 2021 B Bonds is includable in gross income for federal income tax purposes.

The following is a summary of certain United States federal income tax consequences of the ownership of the Series 2021 B Bonds as of the date hereof. Each prospective investor should consult with its own tax advisor regarding the application of United States federal income tax laws, as well as any state, local, foreign or other tax laws, to its particular situation.

This summary is based on the Internal Revenue Code of 1986, as amended (the "Code"), as well as Treasury Regulations and administrative and judicial rulings and practice. Legislative, judicial and administrative changes may occur, possibly with retroactive effect, that could alter or modify the continued validity of the statements and conclusions set forth herein. This summary is intended as a general explanatory discussion of the consequences of holding the Series 2021 B Bonds generally and does not purport to furnish information in the level of detail or with the investor's specific tax circumstances that would be provided by an investor's own tax advisor. For example, this summary is addressed only to original purchasers of the Series 2021 B Bonds that are "U.S. holders" (as defined below), deals only with the Series 2021 B Bonds held as a capital asset within the meaning of Section 1221 of the Code and does not address tax consequences to holders that may be relevant to investors subject to special rules. In addition, this summary does not address alternative minimum tax issues or the indirect consequences to a holder of an equity interest in the Series 2021 B Bonds.

As used herein, a "U.S. holder" is a "U.S. person" that is a beneficial owner of the Series 2021 B Bonds. A "non-U.S. investor" is a holder (or beneficial owner) of the Series 2021 B Bonds that is not a U.S. person. For these purposes, a "U.S. person" is a citizen or resident of the United States, a corporation or partnership created or organized in or under the laws of the United States or any political subdivision thereof (except, in the case of a partnership, to the extent otherwise provided in Treasury Regulations), an estate the income of which is subject to United States federal income taxation regardless of its source or a trust if (i) a United States court is able to exercise primary supervision over the trust's administration, and (ii) one or more U.S. persons have the authority to control all of the trust's substantial decisions.

Sale or Redemption of Series 2021 B Bonds

An owner's tax basis for the Series 2021 B Bonds is the price such owner pays for the Series 2021 B Bonds plus amounts of any original issue discount included in income, reduced on account of any payments received (other than "qualified periodic interest" payments) and any amortized premium. Gain or loss recognized on a sale, exchange or redemption of the Series 2021 B Bonds, measured by the difference between the amount realized and the Series 2021 B Bonds' basis as so adjusted, will generally give rise to capital gain or loss if the Series 2021 B Bonds are held as a capital asset.

Possible Recognition of Taxable Gain or Loss Upon Defeasance of Series 2021 B Bonds

Defeasance of any Series 2021 B Bonds may result in a deemed exchange under Section 1001 of the Code, in which event the holder of such Series 2021 B Bonds will recognize taxable gain or loss in an amount equal to the difference between the amount realized from the deemed exchange (less any accrued qualified stated interest that will be taxable as such) and the holder's adjusted basis in such Series 2021 B Bonds.

Backup Withholding

An owner of the Series 2021 B Bonds may, under certain circumstances, be subject to "backup withholding" (currently the rate of this withholding tax is 28%, but may change in the future) with respect to interest or original issue discount on the Series 2021 B Bonds. This withholding generally applies if the owner of the Series 2021 B Bonds (a) fails to furnish the Authority or its paying agent with its taxpayer identification number; (b) furnishes the Authority or its paying agent an incorrect taxpayer identification number; (c) fails to report properly interest, dividends or other "reportable payments" as defined in the Code; or (d) under certain circumstances, fails to provide the Authority or its paying agent with a certified statement, signed under penalty of perjury, that the taxpayer identification number provided is its correct number and that the holder is not subject to backup withholding. Backup withholding will not apply, however, with respect to certain payments made to the Series 2021 B Bond owners, including payments to certain exempt recipients (such as certain exempt organizations) and to certain Nonresidents (as defined below). Owners of the Series 2021 B Bonds should consult their tax advisors as to their qualification for exemption from backup withholding and the procedure for obtaining the exemption.

The amount of "reportable payments" for each calendar year and the amount of tax withheld, if any, with respect to payments on the Series 2021 B Bonds will be reported to the Series 2021 B Bond owners and to the Internal Revenue Service.

Foreign Owners of Series 2021 B Bonds

Under the Code, interest and original issue discount income with respect to the Series 2021 B Bonds held by nonresident alien individuals, foreign corporations or other non-United States persons ("Nonresidents") generally will not be subject to the United States withholding tax (or backup withholding) if the Authority or its paying agent (or other person who would otherwise be required to withhold tax from such payments) is provided with an appropriate statement that the beneficial owner of the Series 2021 B Bonds is a Nonresident. The withholding tax may be reduced or eliminated by an applicable tax treaty, if any. Notwithstanding the foregoing, if any such payments are effectively connected with a United States trade or business conducted by a Nonresident owner of the Series 2021 B Bonds, they will be subject to regular United States income tax, but will ordinarily be exempt from United States withholding tax.

ERISA

The Employees Retirement Income Security Act of 1974, as amended ("ERISA"), and the Code generally prohibit certain transactions between a qualified employee benefit plan under ERISA (an "ERISA Plan") and persons who, with respect to that plan, are fiduciaries or other "parties in interest" within the meaning of ERISA or "disqualified persons" within the meaning of the Code. All fiduciaries of ERISA Plans, in consultation with their advisors, should carefully consider the impact of ERISA and the Code on an investment in the Series 2021 B Bonds.

In all events, all investors should consult their own tax advisors in determining the federal, state, local and other tax consequences to them of the purchase, ownership and disposition of the Series 2021 B Bonds.

State Taxation

Bond Counsel is of the opinion that, based upon existing law, interest on the Series 2021 B Bonds and any gain on the sale thereof are not included in gross income under the New Jersey Gross Income Tax Act.

THE OPINIONS EXPRESSED BY BOND COUNSEL WITH RESPECT TO THE SERIES 2021 B BONDS ARE BASED UPON EXISTING LAWS AND REGULATIONS AS INTERPRETED BY RELEVANT JUDICIAL AND REGULATORY CHANGES AS OF THE DATE OF ISSUANCE OF THE SERIES 2021 B BONDS, AND BOND COUNSEL HAS EXPRESSED NO OPINION WITH RESPECT TO ANY LEGISLATION, REGULATORY CHANGES OR LITIGATION ENACTED, ADOPTED OR DECIDED SUBSEQUENT THERETO. PROSPECTIVE PURCHASERS OF THE SERIES 2021 B BONDS SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE POTENTIAL IMPACT OF ANY PENDING OR PROPOSED FEDERAL OR STATE TAX LEGISLATION, REGULATIONS OR LITIGATION.

See Appendix E to this Official Statement for the complete text of the proposed form of Bond Counsel's opinion with respect to the Series 2021 B Bonds.

LITIGATION

There is no litigation pending or, to the knowledge of the Authority, threatened, which (i) questions the official existence of the Authority or the power of the Authority to collect and pledge revenues in accordance with the terms of the Resolution to pay the Series 2021 B Bonds or to establish and adjust tolls, or (ii) seeks to restrain or enjoin the issuance of the Series 2021 B Bonds or to question or affect the validity of the Series 2021 B Bonds or the proceedings of the Authority under which they are to be issued. In addition to commitments in the normal course of business (which includes investigation and remediation of existing and projected action level environmental conditions), the Authority is contingently liable under pending lawsuits and claims, relating principally to construction programs and personal injury claims, in which the Authority is named a defendant. The Authority believes the aggregate liability of the Authority under such actions, if adversely determined, would not materially adversely affect the financial position of the Authority and sufficient funds are expected to be available to satisfy any payments required in connection therewith.

In 2017, a Petition for Rule Change seeking to have the Authority revoke its rule imposing an administrative fee in connection with collecting unpaid tolls from toll violators on the Turnpike and Parkway was filed with the Authority. In the Petition, the petitioners argue that the administrative fee is unreasonable and therefore not authorized by the Act. The Petition also includes a demand for a refund of the administrative fees collected by the Authority to the extent unreasonable, which amount the petitioners claim is nearly $200,000,000. After reviewing a financial analysis of the costs of processing, prosecuting and collecting unpaid tolls from toll violators, the Authority concluded that the administrative fee is reasonable and consistent with the Act and, in a written response dated October 18, 2017, the Executive Director of the Authority denied the Petition. On December 1, 2017 the petitioners filed an appeal of that denial with the Appellate Division of the Superior Court of the State of New Jersey and oral argument occurred on February 4, 2019. On March 8, 2019, the Appellate Division issued its decision rejecting the petitioners' contention that the Authority violated the Administrative Procedures Act or notions of due process or fundamental fairness, when it initially promulgated the regulation in 2011, and in 2017, when it considered the Petition for Rule Change. However, the Appellate Division remanded the case to the lower court in Middlesex County, New Jersey, for purposes of supplementing the record. The Authority continues to conduct discovery and work with experts to defend the reasonableness of the Authority's administrative fee. The evidentiary hearing, which was scheduled for early March 2020, was adjourned due to ongoing and extensive discovery process between the parties. A new trial date has not been scheduled yet. The Authority intends to vigorously defend its conclusion that the administrative fee is reasonable and consistent with the Act. Additionally, the Authority believes that, in the unlikely event a court should ultimately rule that some portion of the administrative fee is not reasonable and must be refunded by the Authority, the aggregate amount required to be refunded would be substantially less than the amount claimed by the petitioners given that the total aggregate amount of administrative fees collected by the Authority since the fee was established is substantially less than $200,000,000.

On December 1, 2017, the law firm representing the petitioners also filed a class action lawsuit in the United States District Court for the District of New Jersey alleging, among other things, that the administrative fee violates the Fair Debt Collections Practices Act (FDCPA) and the Eighth Amendment to the United States Constitution. With the agreement of the parties, on January 17, 2018, the Court issued an order staying this lawsuit pending the resolution of the appeal with the Appellate Division of the Superior Court of the State of New Jersey described above. If and when this lawsuit is reactivated, the Authority intends to vigorously defend its conclusion that the administrative fee does not violate the FDCPA or the United States Constitution.

Please see "THE AUTHORITY – Environmental Matters" herein for a discussion of certain litigation involving the Authority and the potential costs and/or liabilities of the Authority associated therewith.

STATE NOT LIABLE

THE SERIES 2021 B BONDS ARE REVENUE OBLIGATIONS OF THE AUTHORITY. THE SERIES 2021 B BONDS ARE NOT A DEBT OR LIABILITY OF THE STATE OR OF ANY POLITICAL SUBDIVISION THEREOF (OTHER THAN THE AUTHORITY) AND NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OR OF ANY POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF THE SERIES 2021 B BONDS. THE AUTHORITY HAS NO TAXING POWER.

COVENANT OF THE STATE

In the Act, the State pledges to and agrees with the holders of bonds of the Authority (including the holders of all Bonds issued under the Resolution) that it will not limit or restrict the rights thereby vested in the Authority to maintain, construct, reconstruct, and operate any project as defined therein, or to establish and collect such charges and tolls as may be convenient or necessary to produce sufficient revenue to meet the expenses of maintenance and operation thereof and to fulfill the terms of any agreements made with the bondholders or in any way impair their rights or remedies until all bonds issued by the Authority under the Act, together with interest thereon, are fully paid and discharged.

CONTINUING DISCLOSURE

In accordance with the requirements of Rule 15c2-12 (the "Rule") adopted by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended, the Authority will enter into an agreement with the Co-Trustees (the "Continuing Disclosure Agreement") pursuant to which the Authority will covenant for the benefit of the holders of the Series 2021 B Bonds to annually provide or cause to be provided to the Municipal Securities Rulemaking Board, through the EMMA system, certain financial and operating data relating to the Authority. Pursuant to the Continuing Disclosure Agreement, the Authority will agree to provide, by no later than May 1 of each year during which any of the Series 2021 B Bonds remain Outstanding, such annual financial and operating data prepared for the respective fiscal year of the Authority ending the immediately preceding December 31 (or if the fiscal year of the Authority shall end on any date other than December 31, the Authority shall provide such annual financial and operating data not later than the first day of the fifth month next following the end of such other fiscal year). The Authority will also covenant in the Continuing Disclosure Agreement to provide notices of the occurrence of certain enumerated events. The form of the Continuing Disclosure Agreement is included in APPENDIX F - "FORM OF CONTINUING DISCLOSURE AGREEMENT" attached hereto.

The Underwriters' obligations to purchase and accept delivery of the Series 2021 B Bonds is conditioned upon the Authority entering into the Continuing Disclosure Agreement at or prior to the delivery of the Series 2021 B Bonds.

A failure by the Authority to comply with the provisions of the Continuing Disclosure Agreement will not constitute an Event of Default under the Resolution, and the holders and Beneficial Owners of the Series 2021 B Bonds are limited to the remedies set forth in the Continuing Disclosure Agreement. However, failure by the Authority to comply with the Continuing Disclosure Agreement must be reported in accordance with the Rule and must be considered by any broker or dealer before recommending the purchase or sale of Series 2021 B Bonds in the secondary market. Consequently, such a failure may adversely affect the transferability and liquidity of the Series 2021 B Bonds and their market price.

In April 2020, the Authority became aware that the annual financial and operating data, notices of certain enumerated events and other information it was filing on EMMA in compliance with its continuing disclosure agreements for its Outstanding Bonds was inadvertently not properly linked to the CUSIP numbers for its Series 2019 A Bonds. The Authority corrected the problem promptly and has taken steps to ensure that all of its future filings on EMMA will be properly linked to the CUSIP numbers for all of its Outstanding Bonds that are the subject of a continuing disclosure agreement.

CERTAIN LEGAL MATTERS

All legal matters incident to the authorization, issuance, sale and delivery of the Series 2021 B Bonds are subject to the approval of McManimon, Scotland & Baumann, LLC, Roseland, New Jersey, Bond Counsel to the Authority, whose approving legal opinion will be delivered with the Series 2021 B Bonds, substantially in the form attached hereto as Appendix E. Certain legal matters will be passed upon for the Authority by Ann Christine Monica, Esq., Acting Director of Law of the Authority, and for the Underwriters by their counsel, Wilentz, Goldman & Spitzer, P.A., Woodbridge, New Jersey.

LEGALITY FOR INVESTMENT

Under the Act, the Series 2021 B Bonds are securities in which the State and all political subdivisions of the State, their officers, boards, authorities, departments or other agencies, all banks, bankers, savings banks, trust companies, savings and loan associations, investment companies and other persons carrying on a banking business, all insurance companies, insurance associations and other persons carrying on an insurance business, and all administrators, executors, guardians, trustees and other fiduciaries, and all other persons whatsoever who may be authorized to invest in bonds or other obligations of the State, may properly and legally invest any funds, including capital belonging to them or within their control; and the Series 2021 B Bonds are securities which may properly and legally be deposited with and received by any State or municipal officers or agency of the State for any purpose for which the deposit of bonds or other obligations of the State may be authorized by law.

VERIFICATION OF MATHEMATICAL CALCULATIONS

In connection with the issuance of the Series 2021 B Bonds, American Municipal Tax-Exempt Compliance Corporation d/b/a AMTEC, of Avon, Connecticut (the “Verification Agent”), will deliver a report indicating that the Verification Agent has verified the mathematical accuracy of the computations in the schedules provided by the Underwriters. Included in the scope of the report will be a verification of the mathematical accuracy of the adequacy of the cash and the maturing principal of and interest on the Defeasance Securities deposited with the Escrow Agent to pay, when due (i) the interest on the Refunded Bonds coming due on January 1 and July 1 of each year on and prior to each applicable Redemption Date for the Refunded Bonds, and (ii) the Redemption Price of the Refunded Bonds coming due on each applicable Redemption Date for the Refunded Bonds.

FINANCIAL ADVISOR

Hilltop Securities Inc. is employed as Financial Advisor to the Authority in connection with the issuance of the Series 2021 B Bonds (the “Financial Advisor”). The Financial Advisor's fee for services rendered with respect to the sale of the Series 2021 B Bonds is contingent upon the issuance and delivery of the Series 2021 B Bonds. Hilltop Securities Inc., in its capacity as Financial Advisor, does not assume any responsibility for the information, covenants and representations contained in any of the legal documents with respect to the Federal income tax status of the Series 2021 B Bonds, or the possible impact of any present, pending or future actions taken by any legislative or judicial bodies.

The Financial Advisor to the Authority has provided the following sentence for inclusion in this Official Statement: The Financial Advisor has reviewed the information in this Official Statement in accordance with, and as part of, its responsibilities to the Authority and, as applicable, to investors under the Federal securities laws, as applied to the facts and circumstances of this transaction, but the Financial Advisor does not guarantee the accuracy or completeness of such information.

FIDUCIARIES

The Bank of New York Mellon, Woodland Park, New Jersey and U.S. Bank National Association, Edison, New Jersey serve as Co-Trustees under the Resolution. The Bank of New York Mellon serves as the Trustee, Paying Agent and Registrar for the Series 2021 B Bonds. The duties of U.S. Bank National Association are limited to administration of certain investments in the Debt Reserve Fund and certain other Authority funds.

INDEPENDENT AUDITORS

The financial statements of the Authority as of and for the years ended December 31, 2019 and 2018, included in Appendix A to this Official Statement, have been audited by KPMG LLP, independent auditors, as stated in their report which appears therein.

MISCELLANEOUS

The information contained herein has been obtained from the Authority and other sources which the Authority believes to be reliable. There is no guarantee that any of the assumptions or estimates contained herein will be realized.

The references herein to the Act, the Resolution and the Series 2021 B Bonds are brief outlines of certain provisions thereof. Such outlines do not purport to be complete and accordingly, are qualified by reference to the Act, the Resolution and the Series 2021 B Bonds and are subject to the full texts thereof. The respective references herein to the Traffic Engineer and of the Consulting Engineer have been approved by said engineers and consultants but do not purport to be complete in all respects, and, accordingly, are qualified by reference to the 2020 Draw Down Letter and Report of the Traffic Engineer in Appendix B and to the Report of the Consulting Engineer in Appendix C, respectively, and are subject to the full texts thereof.

The authorization, agreements and covenants of the Authority are set forth in the Resolution and neither this Official Statement nor any advertisement of the Series 2021 B Bonds is to be construed as a contract with the holders of the Series 2021 B Bonds. Any statements made in this Official Statement involving matters of opinion or of estimates, whether or not expressly so identified, are intended merely as such and not as representations of fact.

NEW JERSEY TURNPIKE AUTHORITY

By: /s/John M. Keller
JOHN M. KELLER
Executive Director

APPENDIX A

FINANCIAL STATEMENTS OF THE AUTHORITY
FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018
WITH INDEPENDENT AUDITORS' REPORT THEREON

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NEW JERSEY TURNPIKE AUTHORITY

(A Component Unit of the State of New Jersey)

Financial Statements

For the Years Ended December 31, 2019 and 2018

(With Independent Auditor's Report Thereon)

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NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

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NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

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KPMG LLP
New Jersey Headquarters
51 John F. Kennedy Parkway
Short Hills, NJ 07078-2702

Independent Auditors' Report

The Commissioners
New Jersey Turnpike Authority:

We have audited the accompanying basic financial statements of the New Jersey Turnpike Authority (the Authority), a component unit of the State of New Jersey, as of and for the years ended December 31, 2019 and 2018, and the related notes to the basic 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 U.S. generally accepted accounting principles; 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.

Auditors' 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. 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 auditors' 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 entity'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 entity'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 financial position of the New Jersey Turnpike Authority, as of December 31, 2019 and 2018, and the respective statements of revenues, expenses, and changes in net position, and cash flows thereof for the years then ended in accordance with U.S. generally accepted accounting principles.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis, the Schedule of Changes in Total OPEB Liability and Related Ratios (Schedule 1) and the Schedule of

Proportionate Share, Employer Contributions and Notes (Schedule 2), as listed in the table of contents (collectively referred to as Required Supplementary Information), 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.

Other Supplementary Information

Our audits for the year ended December 31, 2019 and 2018 were conducted for the purpose of forming an opinion on the basic financial statements that collectively comprise the Authority's basic financial statements. The supplementary information included on Schedules 3 through 11B as listed in the table of contents is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The supplementary information included in Schedules 3 through 11B is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. This information, except for those schedules and portions of schedules marked "unaudited," on which we express no opinion, has been subjected to the auditing procedures applied in the audits of the basic financial statements for the years ended December 31, 2019 and 2018 and certain additional procedures including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information included in Schedules 3 through 11B, except for those schedules and portions of schedules marked "unaudited," on which we express no opinion, is fairly stated in all material respects, in relation to the basic financial statements as a whole.

KPMG LLP

July 28, 2020

The management of the New Jersey Turnpike Authority (the Authority) offers this narrative overview and analysis of the Authority’s financial activities for the years ended December 31, 2019 and 2018, which should be read in conjunction with the Authority’s financial statements.

Overview of the Financial Statements

This discussion and analysis is intended to present an overview of the Authority’s financial performance for the years ended December 31, 2019 and 2018. The Authority’s financial statements are prepared in accordance with Generally Accepted Accounting Principles (GAAP) as prescribed by the Governmental Accounting Standards Board (GASB). This section is intended to provide an assessment of how the Authority’s financial position has improved or deteriorated, and identify the factors that, in management’s view, significantly affected the Authority’s overall financial position. It may contain opinions, assumptions, or conclusions by the Authority’s management that should not be considered a replacement for the financial statements included in this report.

The Statement of Net Position provides information about the nature and amount of investments in resources (assets) and the obligations to Authority creditors (liabilities), as well as the deferred outflows and inflows of resources, with the difference between these amounts reported as net position.

The Statement of Revenues, Expenses, and Changes in Net Position, which accounts for all of the current year’s revenues and expenses, measures the success of the Authority’s operations over the past year and can be used to determine how the Authority has funded its costs.

The Statement of Cash Flows provides information about the Authority’s cash receipts, cash payments, and net changes in cash resulting from operating, investing and financing activities.

The notes to the Financial Statements provide:

- Information that is essential to understand the basic financial statements, such as the Authority’s accounting methods and policies.

- Details of contractual obligations, future commitments and contingencies of the Authority.

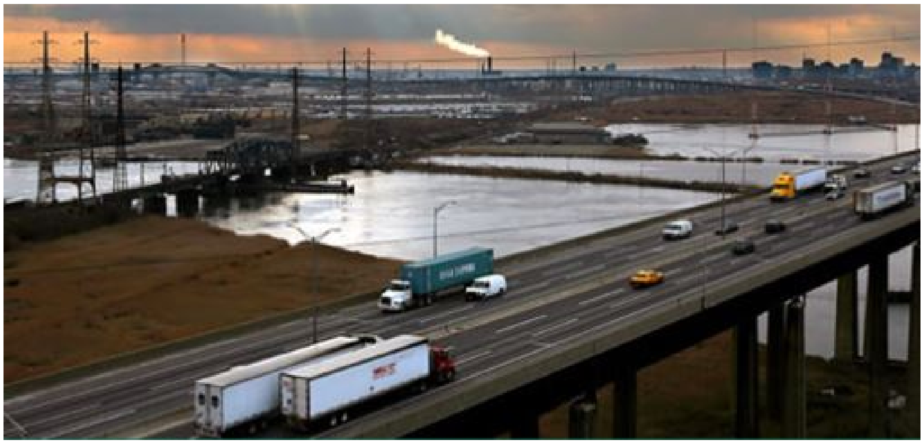
- Other events or developing situations that could materially affect the Authority’s financial position.

The Required Supplementary Information included in Schedule 1 presents information regarding the Authority’s changes in total other postemployment benefits (OPEB) liability, related ratios and notes to the Authority's OPEB plan.

The Required Supplementary Information included in Schedule 2 presents information regarding the Authority’s proportionate share, employer contributions and notes related to the State of New Jersey Public Employees’ Retirement System (PERS).

The Other Supplementary Information included in Schedules 3 through 11B presents information regarding the Authority's accounting and compliance with its 1991 Turnpike Revenue Bond Resolution, as amended, restated and supplemented (the Resolution), and the Authority's interpretation of such Resolution.

The Authority's Business



The Authority is a body corporate and politic created by the New Jersey Turnpike Authority Act of 1948, as amended and supplemented (the Act). The Act authorizes the Authority to construct, maintain, repair, and operate the New Jersey Turnpike (the Turnpike System or the Turnpike); to fix and establish tolls for the use of the Turnpike System; and to issue Turnpike revenue bonds or notes of the Authority, subject to prior approval in writing from the Governor and from either or both the State Treasurer and the Director of the Division of Budget and Accounting of the Department of the Treasury, payable solely from tolls and other revenues of the Authority. Under the provisions of the Act, the Turnpike bonds, notes, and interest thereon shall not be deemed to constitute a debt, liability or pledge of the faith and credit of the State of New Jersey (the State) or any political subdivision thereof. The Act further provides that the powers conferred upon the Governor and the Treasurer of the State described shall be exercised with due regard for the rights of the holders of bonds of the Authority at any time outstanding; and nothing in, or done pursuant to, the Act shall in any way limit, restrict or alter the obligation or powers of the Authority, or any representative or officer of the Authority, to carry out and perform in every detail each and every covenant, agreement or contract at any time made or entered into by, or on behalf of, the Authority with respect to its bonds or for the benefit, protection or security of the holders thereof.

On May 27, 2003, the Act was amended. The amendment empowered the Authority, effective on the Transfer Date which was July 9, 2003, to assume all powers, rights, obligations and duties of the New Jersey Highway Authority (the Highway Authority), which owned and operated the Garden State Parkway (the Parkway) and the PNC Bank Arts Center.

Highlights

- In January 2019, the Authority’s bonds were rated by three main credit rating agencies as follows: A2 by Moody's Investors Services Inc., A+ by S&P Global Ratings, and A with "Positive Outlook" by Fitch Ratings. The Authority's investment grade bond ratings demonstrate a strong capacity to meet Authority’s financial obligations, and represents a relatively low risk to investors.

- On February 7, 2019, the Authority issued $449,110 of Turnpike Revenue Bonds, Series 2019A (Series 2019A bonds). The bonds bear interest at fixed rates from 4.00% to 5.00% and mature on January 1, 2048. The interest on the Series 2019A bonds is paid semi-annually. The purpose of the Series 2019A bonds is to (i) pay the cost of construction of various projects which are part of the Authority's ongoing capital improvement program for the Turnpike System, and (ii) pay the costs of issuance of the Series 2019A bonds.

- In March 2019, the Authority marked the opening of the new state-of-the-art facility for the New Jersey State Police on the Turnpike in Newark. The new 34,000 square foot facility is located at Interchange 14.
  It includes three holding cells, a secure processing area, a sally port, emergency backup power and a 1,250 square foot briefing room. These police barracks are a part of the Authority's Facilities Improvement Program under $7 Billion Capital Improvement Program. In total, there are four new State Police stations included in this program. The other stations were constructed in Moorestown, on the Turnpike, and Bloomfield and Galloway on the Parkway.

- In April 2019, the Authority adopted a $500 million 2019 Capital Improvement Program (CIP). The program consists of the design, supervision and construction of 17 capital improvement projects on both the Turnpike and the Parkway. Two major projects included in this program are Turnpike Installation of Hybrid Changeable Message Signs and Parkway Shoulder Widening from Milepost 30 to 35. The $500 million 2019 CIP will be funded through bond proceeds. In addition to the 2019 CIP, the $7 Billion CIP was amended to extend the date of the program by two years to December 2020.

- On May 22, 2019 and June 25, 2019, respectively, the Monmouth Service Area on the Parkway and the Thomas Edison Service Area on the Turnpike reopened after they were demolished and rebuilt. These are the first two service areas of the total of fourteen restaurants and twenty-one fuel service facilities which will be remodeled, rebuilt or refurbished on the Parkway and the Turnpike as part of the HMS Host Tollroads Inc. (HMS) and Sunoco Retail LLC (Sunoco) contracts in the coming 25 years. The Monmouth Service Area and the Thomas Edison Service Area have been a huge success. Since the reopening dates, 2019 food concession sales at Monmouth and Thomas Edison are up 25.6% when compared to the same period in 2018.

- On July 23, 2019, the Authority issued its Comprehensive Annual Financial Report (CAFR) for the years ended December 31, 2018 and 2017. The financial statements were prepared in accordance with Generally Accepted Accounting Principles (GAAP) in the United States and received an unmodified opinion from the Authority's external auditors.

- In August 2019, the Authority received the Government Finance Officer's Association's (GFOA) Distinguished Budget Presentation Award for the submission of its Annual Budget for the fiscal year beginning January 1, 2019. The program was established by the GFOA in 1945 to assist state and local governments in preparing financial reports of the highest quality, for the spirit of transparency and full disclosure. In addition, for the fifth consecutive year, the Authority received the GFOA’s Certificate of Achievement for Excellence in Financial Reporting for the submission of its Comprehensive Annual Financial Report (CAFR) for the years ended December 31, 2018 and 2017. The program was established by the GFOA in 1945 to assist state and local governments in preparing financial reports that evidence the spirit of transparency and full disclosure.

- In August 2019, the Authority's Board of Commissioners approved the Strategic Plan 2020-2029. This first ever Strategic Plan provides clear direction and measurable goals for the next 10 years. Goals of the Strategic Plan are divided into five major categories, which are: Safety, Finance, Mobility, State of Good Repair and People.

Some of the goals of the Strategic Plan include reducing incidents (crashes and fatalities) on the roads and service areas, improving credit strength, reducing travel time during peak periods, increasing the useful life of Authority assets, establishing and maintaining good or excellent customer satisfaction and improving job satisfaction. The Strategic Plan can be found on the official website.

- In September 2019, the Authority conducted a winter season preparedness exercise known as the Snow Road-eo. This event incorporated driver training, equipment preparation, plow repairs, and snow vehicle maneuverability. The Authority's event was one of five events taking place across the state and included the Southern Jersey Turnpike Authority (SJTA) and New Jersey Department of Transportation (NJDOT).

- As of September 2019, the Authority closed the Vince Lombardi, Richard Stockton, and Forked River Service Areas for construction and remodeling. The existing facilities for the Vince Lombardi Service Area and the Forked River Service Area will be demolished, and new ones built in their place. The Richard Stockton Service Area will be extensively remodeled and enlarged.

- Toll revenue in 2019 was $1,612,268, which was essentially flat when compared to 2018. Despite being flat, toll revenue was 0.40% greater than the 2019 budget. Toll revenue was essentially flat due mainly to the full-year impacts of the reopening of the Pulaski Skyway which offered Turnpike customers shorter and less expensive trips, and the conversion to one-way tolling at Interchange 145 on the Garden State Parkway. In 2019, traffic on the Turnpike increased by 1.1% and toll revenue decreased slightly by 0.2% compared to the same period in 2018. Traffic on the Parkway decreased by 0.8% and revenue increased by 0.6% as compared to 2018.
- The Authority's net position increased by $191,019 or 48.0%, from $398,255 in 2018 to $589,274 in 2019. The increase in net position is in part due to higher net operating income due to higher nonoperating revenue, including higher investment income in 2019.

(Dollars shown in thousands)

Implementation of GASB 88

The Authority adopted GASB Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements* (GASB 88) in 2019. The primary objective of GASB 88 is to improve the information disclosed in notes to governmental financial statements related to debt, including direct borrowings and direct placements. The adoption of GASB 88 did not have any impact on the financial statements, other than revised note disclosures. See note 2(u).

Condensed Summary of Net Position

	2019	2018	2017
Assets:			
Current assets	$ 2,174,701	1,915,324	1,839,772
Other noncurrent assets	694,519	556,994	759,208
Capital assets, net of accumulated depreciation	12,094,445	11,960,282	11,841,066
Total assets	$ 14,963,665	14,432,600	14,440,046
Deferred outflows	$ 388,890	449,605	391,437
Liabilities:			
Current liabilities	$ 970,744	865,680	899,866
Noncurrent liabilities	13,490,235	13,462,680	12,578,049
Total liabilities	$ 14,460,979	14,328,360	13,477,915
Deferred inflows	$ 302,302	155,590	105,555
Net position:			
Net investment in capital assets	$ 1,687,349	1,517,792	1,379,079
Restricted under trust agreements	246,242	225,094	242,544
Unrestricted	(1,344,317)	(1,344,631)	(373,610)
Total net position	$ 589,274	398,255	1,248,013

Discussion of Condensed Summary of Net Position 2019, 2018, 2017

2019 – 2018

The Authority's total net position is reported at $589,274 and $398,255 as of December 31, 2019 and 2018, respectively, representing an increase in 2019 of $191,019, or 48.0%, compared to 2018. This increase is mainly due to higher nonoperating revenue. The major factors were an increase of $14,555 in investment income and a reduction in the contractual payments to the State by $13,500. Capital assets increased by $134,163 or 1.1%, and other noncurrent assets increased by $137,525 or 24.7%. Capital assets increased because of the continued spending on the $7 Billion CIP and the 2019 CIP.

Other noncurrent assets increased primarily due to the increase in restricted investments due to the unspent proceeds of the Series 2019A bonds. Current liabilities increased by $105,064 or 12.1% primarily due to the increase in current portion of bonds payable, unearned revenue, accounts payable and accrued expenses. Noncurrent liabilities increased by $27,555, or 0.2%, primarily due to the increase in the bonds payable from the issuance of the Series 2019A bonds. This increase is offset by a decrease in the other postemployment benefit (OPEB) liability and net pension liability. The deferred inflows of resources related to OPEB, increased as a result of differences between the actual and expected experience and the changes of assumptions which are not reflected in the current year's OPEB expense.

2018 – 2017

The Authority's total net position is reported at $398,255 and $1,248,013 as of December 31, 2018 and 2017, respectively, representing a decrease of $849,758 or 68.1%, compared to 2017. The major factors causing this decrease was the cumulative effect of implementing GASB 75 during 2018. Without the implementation of GASB 75, net position would have increased by $209,768 primarily due to an increase in toll revenue. Capital assets increased by $119,216, or 1.0%, and other noncurrent assets decreased by $202,214, or 26.6%. Capital assets increased as a result of the continued spending on the ongoing $7 Billion CIP. Other noncurrent assets decreased primarily due to the reduction in restricted investments comprised of the proceeds of the Series 2017A Turnpike Bonds which were spent on capital assets. Noncurrent liabilities increased by $884,631, or 7.0%, primarily due to the increase in the other postemployment benefit (OPEB) liability with the adoption of GASB 75. The deferred outflows and deferred inflows of resources related to OPEB are the result of differences between the actual and expected experience and the changes of assumptions which are not reflected in the current year's OPEB expense. Deferred outflows relating to OPEB also include the payments of the retiree health benefits payments subsequent to the measurement date of the liability.

(Dollars shown in thousands)

Adjusted Net Position

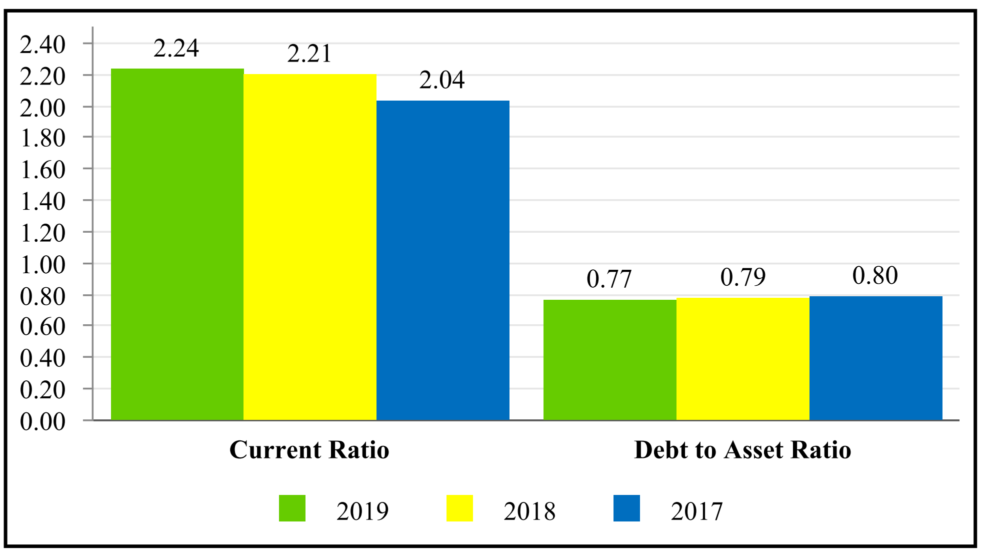
	2019	2018	2017
Net position as per GAAP Financials	$ 589,274	$ 398,255	$ 1,248,013
Other postemployment benefit liability/deferral GASB 75, net	1,546,471	1,520,301	402,773
Pension liability/deferral GASB 68, net	395,021	403,410	444,229
Derivatives Instruments/deferrals GASB 53, net	(104,409)	(113,145)	(110,811)
Pollution Remediation GASB 49	11,658	10,593	10,681
Other long-term liabilities	—	21,760	24,901
Leases GASB 62, net	34,344	—	—
Total Non-Cash Adjustments	$ 1,883,085	$ 1,842,919	$ 771,773
Garden State Arts Foundation	(680)	(607)	(719)
Net Position as Per Bond Resolution	$ 2,471,679	$ 2,240,567	$ 2,019,067

Shown above is the Authority's adjusted net position calculated as per the Authority's Bond Resolution. Net position as per the Bond Resolution has been calculated after adjusting for primarily GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligation* (GASB 49), GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments* (GASB 53), GASB Statement No. 68, *Accounting and Financial Reporting for Pensions* (GASB 68) and GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* (GASB 75) which are all non-cash liabilities. Over the past several years, the implementation of new GASB pronouncements has resulted in significant non-cash accounting reductions in the Authority's net position. Additionally, in accordance with the accounting under GASB 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements* which includes leases, the Authority was required to recognize capital assets funded by the lessee and a corresponding unearned revenue (see note 18). Management believes that the net position as per the Bond Resolution provides an alternate view of the strength of the Authority's operations and its financial position.

(Dollars shown in thousands)

Net Position Ratio Analysis - GAAP Basis

Ratio	2019	2018	2017	Explanation
Current Ratio	2.24	2.21	2.04	The current ratio is calculated as the Authority's current assets divided by current liabilities. A strong current ratio is over 1.0, and indicates an organization's ability to meet their short-term obligations. The Authority's current ratio has continued to improve each year, with the average over the three year period being 2.16. For 2019, the Authority has more than two times the amount of current assets as compared with current liabilities. Further, year over year the Authority's current ratio has increased, reflecting the positive cash flow generated from operations.
Debt to Asset Ratio	0.77	0.79	0.80	The debt to assets ratio is calculated by dividing total debt by total assets. The debt to asset ratio continues to decline, decreasing to 0.77 in 2019 from 0.79 in 2018, as a portion of capital assets are paid for through excess net revenues.

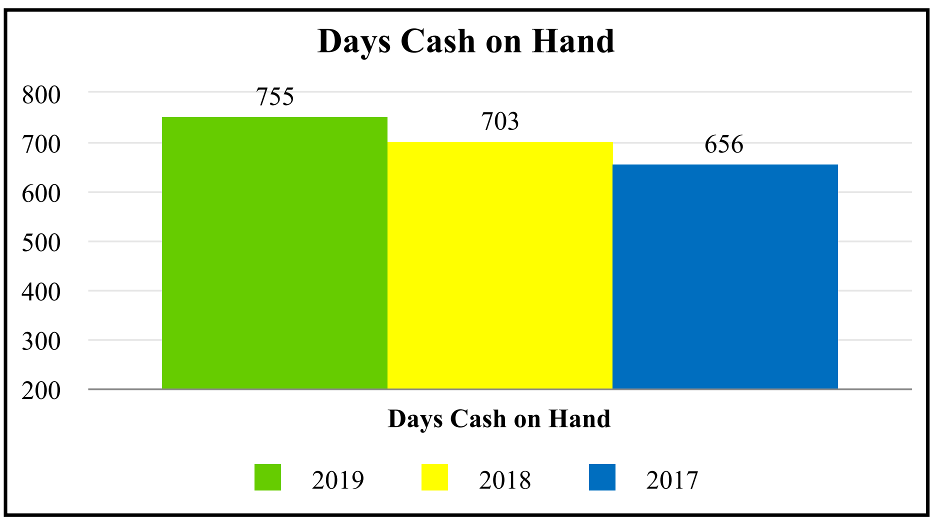


(Dollars shown in thousands)

Key Performance Metric - Net Position

Days Cash on Hand – Days cash on hand is calculated by combining unrestricted cash and unrestricted investments and dividing by daily operating expenses (from the Revenue Fund). This calculation shows how long (in days) the Authority would be able to pay its operating expenses without the generation of revenue. As a result, a larger number of days cash on hand is desirable. As shown in the graph, the days cash on hand has consistently increasing year over year. Based on this calculation, in 2019, the Authority could go 755 days without generating any revenue and still pay its operating expenses. Days cash on hand has improved due to the positive cash flow generated from operations.

	2019	2018	2017
Unrestricted Cash & Investments	$ 1,098,509	1,043,478	913,459
Daily Operating Expenses (Revenue Fund)	$ 1,455	1,485	1,392
Days cash on hand	755	703	656



Capital Improvement Program (CIP)

The Authority currently has two active Capital Improvement Programs (CIP) – (I) the $7 Billion CIP and (II) the 2019 CIP. The $7 Billion CIP and the 2019 CIP have been or will be funded through proceeds generated from the issuance of Turnpike Revenue Bonds.

I. $7 Billion Capital Improvement Program

The Authority is nearing the conclusion of a $7 Billion CIP that included large scale projects such as widening stretches of both the Turnpike and the Parkway and smaller projects that improve interchanges, rehabilitate bridges, and deploy new technologies. The $7 Billion CIP continues on budget with some scheduling changes as projects have been added from savings. Most of the projects are completed or are on target to be completed ahead of schedule and under budget. The Newark Bay Hudson County Extension (NBHCE) project is expected to go beyond its original completion date due to location and scheduling conflicts. This work could not be started until the New Jersey State Department of Transportation (NJDOT) completed their Pulaski Skyway project. The Pulaski Skyway reopened on July 2, 2018.

On September 25, 2018, the $7 Billion CIP was amended to extend the end date by two years, until December 31, 2020. This amendment was required as the Authority has added new work to the program without any additional financial impact through savings achieved as many original projects were completed under budget. Certain of these added projects could not be started or completed within the original 10-year program schedule. In addition, the amendment approved and added $16,000 of design work for new projects while maintaining the original $7 billion budget. At the eleventh year of the program, the Authority has spent or committed approximately 99%, or $6.9 billion of its original $7 billion budget with minimal impact to traffic.

The bond proceeds are deposited in the Construction Fund to support the $7 Billion CIP. Total expenditures for the $7 Billion CIP for the twelve months ended December 31, 2019 were approximately $220,000. Spending included approximately $71,000 for the NBHCE Bridge Re-decking Project, approximately $43,000 for the Interchange Improvements Project, approximately $29,000 for the Facilities Improvements Phase I Project, approximately $19,000 for the Parkway Interchange 125 Improvements Phase I Project, approximately $15,000 for the Widening of Parkway Mileposts 35 to 63 Project, and approximately $11,000 for the Sign Replacements Phase II Project. In addition to these expenditures, there are open contracts and commitments totaling approximately $346,000.

As a part of the $7 Billion CIP the Authority has taken great measures to increase mobility and reduce commuting times on both the Parkway and Turnpike. One of the main projects that was successfully completed and opened to the public in late 2014 was the widening between Interchanges 6 and 9 on the Turnpike. In addition, through multiple phases, the Authority completed the widening of the Parkway from milepost 35 to 80. The Authority has also undertaken additional projects beyond the Turnpike and the Parkway widening to improve the safety and mobility of traffic on both roadways such as bridge rehabilitation and interchange improvements. Since the program began, the Authority has expanded and rehabilitated major bridges on both the roadways and more than a dozen interchanges have been re-built, expanded or improved to provide better access to and from both roadways.

(Dollars shown in thousands)

The Projects currently included in the $7 Billion CIP are the following:

Project	**Current Budget**	**Amount Spent or Committed to Date**	**Percent Spent & Committed to Date**
Turnpike Widening (Interchange 6-9)	$ 2,133,453	2,133,369	100 %
Bridge Improvements	1,704,441	1,672,851	98 %
Roadway Improvements	834,275	831,066	100 %
Interchange Improvements	1,060,496	1,032,407	97 %
Facilities Improvements	684,086	675,100	99 %
Parkway Widening (Milepost 35-80)	583,249	580,479	100 %
	$ 7,000,000	**6,925,272**	**99 %**

Turnpike Widening*:* The Turnpike Interchanges 6 to 9 widening, which was completed on schedule and under budget, was opened to traffic in November 2014. The Turnpike widening provides three additional travel lanes in each direction between Interchanges 6 and 8A, and one additional lane in each direction between Interchanges 8A and 9. All construction is complete and final program close out is in progress. This Turnpike widening is perhaps the most significant and successful project in recent years, allowing free-flow of traffic at all times, as previous significant peak-period delays in the widening area have been eliminated.

Bridge Improvements: Bridge improvements in the $7 Billion CIP include re-decking, seismic retrofitting, security measures, cleaning and repainting of structural steel, substructure repairs and other improvements to the 16 major Turnpike and Parkway bridges and other high-priority structures. The $7 Billion CIP includes approximately $1.7 billion for bridge improvements. In 2019, the major projects included portions of the Delaware River Turnpike Bridge and the NBHCE on the Turnpike, and the Great Egg Harbor and the Drag Channel bridges on the Parkway. The Authority will continue its bridge deck reconstruction work on the NBHCE in 2020, while the Delaware River Turnpike Bridge and the Great Egg Harbor bridge projects are complete and close out is in progress.

Roadway Improvements: Roadway improvements totaling approximately $834,300 are also included in the $7 Billion CIP. This includes widening and strengthening roadway shoulders, replacing deteriorated guide rail, improving drainage, repairing median barriers, installing variable message signs, replacing weathered and outdated guide signs, and making other investments to improve the safety and operation of the Turnpike and Parkway. All work has been spent or committed as of December 31, 2019. The design work for the new Hybrid Changeable Message Signs to replace the existing signs on the Turnpike was added as a part of $7 Billion CIP amendment in September 2018. The last contract of the Variable Message Sign Program was awarded in April 2019. The projected completion date for this work is approximately the first quarter of 2021.

Interchange Improvements: The $7 Billion CIP also includes approximately $1.1 billion for Interchange Improvements on both roadways. The projects include Interchanges 9, 10, and 14A on the Turnpike and Interchanges 9, 10, 11, 36, 37, 41, 91, 105, 109, 125, 145 and 163 on the Parkway. As of December 31, 2019, all planned interchange work has been completed, except for the work on Interchanges 109 and 125 on the Garden State Parkway which is expected to be completed in 2020 and Interchange 145 on the Garden State Parkway which is expected to be completed in 2022.

Facility Improvements: The $7 Billion CIP includes approximately $684,100 for facilities improvements. In total, the Authority has or will build forty-two new structures and rehabilitate eighteen existing structures. Projects include the replacement of four State Police Troop D Stations, the rehabilitation of sixteen maintenance districts, minor improvements at all Turnpike toll plaza buildings, and construction of a total of twelve salt storage facilities on both roadways. The Facilities Improvement Program is near its completion. To date, thirteen maintenance district facilities, four State Police Stations, a Central Services facility, twelve salt sheds, and all Turnpike toll building repairs have been completed. The program is scheduled to be completed in 2020.

Parkway Widening: The Parkway widening project added a third travel lane and full-width shoulders between Mileposts 35 and 80 and was completed as follows:

Phase I – Mileposts 63 to 80 – Construction was completed and the section opened to motorists in 2011.

Phase II – Mileposts 48 to 63 –The widening between Mileposts 52 and 63 was opened in 2014, with the remaining widening of this section to Milepost 48 opened in 2015.

Phase III – Mileposts 35 to 48 –The widening between Mileposts 41 and 48 was completed in 2016 and the widening between Mileposts 35 and 41 was completed in the fall of 2018 and opened to traffic. Contracts for the work between mileposts 35 to 42 are in final close out.

The total costs for the Parkway Mileposts 35 to 80 Widening Program are approximately $583,200; however, $100,000 of those costs were financed from the proceeds of bond anticipation notes prior to the adoption of the $7 Billion CIP, therefore only $483,200 of the costs were included in the $7 Billion CIP.

(Dollars shown in thousands)

II. 2019 Capital Improvement Program (2019 CIP)

The Authority adopted a $500 million 2019 CIP in April 2019 which consists of the design, supervision and construction of 17 capital improvement projects on both roadways and will be funded through Turnpike Revenue Bond proceeds. The projects include several bridge deck replacements on both roadways, the Garden State Parkway shoulder widening between mileposts 30 and 35, and the replacement of the hybrid changeable message signs on the New Jersey Turnpike. These projects are separated into the following categories: Roadway Improvements, Bridge Improvements, Facilities Improvements, Interchange Improvements and Contingency.

As of December 31, 2019 the total expenditure for this program was approximately $17,100 and there are open contracts and commitments totaling approximately $52,300.

The Projects currently included in the 2019 CIP are the following:

Project		Current Budget	Amount Spent or Committed to Date	Percent Spent & Committed to Date
Roadway Improvements	$	254,200	39,603	16 %
Bridge Improvements		192,525	28,010	15 %
Facilities Improvements		10,000	1,790	18 %
Interchange improvements		22,275	—	—
Contingency		5,000	—	—
	$	**484,000**	**69,403**	**14 %**

Roadway Improvements: The 2019 Capital Improvement Program includes approximately $254,200 for roadway improvements. This includes several improvement, installation and rehabilitation projects, such as the Parkway Rehabilitation of the Concrete Median Barrier Project, the Turnpike Installation of Hybrid Changeable Message Signs Project, the Turnpike Berm Surfacing Revisions Project, and the Parkway Weathering Guiderail Replacement Project. These projects are currently under design.

Bridge Improvements: The 2019 Capital Improvement Program includes approximately $192,500 in bridge improvements**.** This includes the repair, rehabilitation, and lengthening of several bridge and deck reconstruction projects. Most are currently under design, including the Turnpike Bridge Reconstruction Project, the Turnpike Foundation Improvements to the Three Bridge Piers, the Parkway Bridge Deck and Median Barrier Reconstruction at Milepost 140 to 143

Project, the Parkway Bridge Deck and Median Barrier Reconstruction at Milepost 160.6 to 162.5 Project, and the Turnpike and Parkway Bridge Fender Repairs and Rehabilitation Project.

Facilities Improvements: The 2019 Capital Improvement Program includes approximately $10,000 in facilities improvements. Included is the PNC Bank Arts Center Intersection Improvements Project, in which more efficient intersections with the Parkway ramps and the east-west roadway will be constructed at the PNC Bank Arts Center. This project is currently under design.

Interchange improvements*:* The 2019 Capital Improvement Program includes approximately $22,300 in interchange improvements. This includes several interchange improvement projects such as the Turnpike Interchange 6 Express E-ZPass Improvements Project, which will add a second Express E-ZPass lane to both directions, and the Turnpike Interchange 18E Express E-ZPass and 16E Improvements Project, which will design and construct an Express E-ZPass bypass to improve traffic flow. The Turnpike Interchange 6 Express EZ-Pass Improvements Project is in construction with an anticipated completion date of December 2020.

(Dollars shown in thousands)

Capital Assets

	December 31		
	2019	2018	2017
Land	$ 833,761	833,761	832,460
Construction-in-progress	572,496	535,904	1,561,960
Roadways	4,581,959	4,642,741	4,143,232
Bridges	4,345,580	4,348,351	3,829,827
Buildings and improvements	850,588	637,904	559,488
Equipment	910,061	961,621	914,099
Total capital assets, net of accumulated depreciation	$12,094,445	11,960,282	11,841,066

Capital assets consist of land, construction in progress, infrastructure, buildings, and equipment. Infrastructure assets are typically items that are immovable, such as highways and bridges. Detailed information on capital asset activity can be found in note 4.

2019 – 2018

The Authority's capital assets as of December 31, 2019 were $16,545,946 of gross asset value with an accumulated depreciation of $4,451,501, leaving a net book value of $12,094,445. This represents 80.8% of the Authority's total assets.

Capital assets, net of accumulated depreciation, increased by $134,163 and construction in progress increased by $36,592 in 2019 primarily due to the continued spending on the Authority's $7 Billion CIP and the new 2019 Capital Improvement Program adopted in April of 2019. Major projects include the Parkway widening between Milepost 35 and 63, Parkway Interchange 125 improvements, facilities improvements and service area reconstructions. Buildings increased by $212,684, or 33.3%, in 2019 due to the completion of work related to facilities improvement and service area reconstruction. All other categories of capital assets decreased in 2019 compared to 2018. Roadways decreased by $60,782, or 1.3%, Bridges decreased by $2,771, or 0.06%, Equipment decreased by $51,560, or 5.4% in 2019. Although there were additions to these assets during 2019, the depreciation for these categories was higher than additions which caused the overall decrease.

The Authority had open commitments related to construction contracts totaling $427,400 as of December 31, 2019. These construction contracts include work related to the Authority’s two active CIP's.

2018 – 2017

The Authority’s capital assets as of December 31, 2018 were $16,056,825 of gross asset value with an accumulated depreciation of $4,096,543, leaving a net book value of $11,960,282. This represents 82.9% of the Authority’s total assets.

Capital assets, net of accumulated depreciation, increased by $119,216 in 2018 primarily due to the continued spending on the Authority’s $7 Billion CIP. Major projects include the Parkway widening between Milepost 35 and 63, facility and interchange improvements and bridge reconstructions. Land increased by $1,301 in 2018 due to the continued acquisition of parcels needed for the Parkway Interchange 125 Project. Construction in progress decreased by $1,026,056 in 2018 because of substantial completion of various roadways, bridges, buildings, and equipment projects. Roadways increased by $499,509, or 12.1%, in 2018 mainly due to continued spending on the Parkway widening, and Turnpike Interchange 14A Reconstruction and increased resurfacing completed on both roadways. Bridges increased by $518,524, or 13.5%, in 2018 due to substantial completion of several bridge improvement projects on the Turnpike and Parkway which included portions of the NBHCE Bridge re-decking, Great Egg Harbor Drag Channel Bridge, and the Delaware River Turnpike Bridge as well as continued re-decking of several minor bridges on both roadways. Buildings increased by $78,416, or 14.0%, in 2018 due to the substantial completion of the Newark State Police Station at Interchange 14 and several maintenance district buildings. Equipment increased by $47,522, or 5.2%, in 2018 due to the addition of sign structures and safety devices after substantial completion as part of the Parkway widening between Mileposts 35 and 65 as well as the Turnpike 14A reconstruction.

The Authority had open commitments related to construction contracts totaling $353,000 as of December 31, 2018. These construction contracts include work related to the Authority’s $7 Billion CIP and will be completed over the next few years.

(Dollars shown in thousands)

Condensed Summary of Revenue, Expenses and Changes in Net Position

	2019	2018	2017
Operating revenues:			
Toll revenue	$ 1,612,268	1,612,326	1,579,896
Other operating revenue	131,657	140,677	118,697
Total operating revenues	1,743,925	1,753,003	1,698,593
Operating expenses, excluding depreciation (1)	(576,329)	(616,182)	(584,880)
Net operating revenue	1,167,596	1,136,821	1,113,713
Depreciation expense	(381,389)	(326,616)	(304,989)
Operating income	786,207	810,205	808,724
Nonoperating revenues (expenses):			
Nonoperating revenues	133,844	117,767	170,507
Nonoperating expenses	(729,232)	(718,404)	(661,997)
Total nonoperating revenues (expenses), net	(595,388)	(600,637)	(491,490)
Change in net position, before capital contributions	190,819	209,568	317,234
Capital contributions	200	200	12,470
Change in net position	191,019	209,768	329,704
Net position – Beginning of period	398,255	1,248,013	918,309
Cumulative effect of adoption of GASB 75	—	(1,059,526)	—
Net position – End of period	$ 589,274	398,255	1,248,013

(1) Operating expenses include both the funded and the non-cash portion of the annual OPEB cost.

Discussion of Condensed Summary of Revenue, Expenses and Changes in Net Position

2019 – 2018

Operating Revenues

Operating revenues totaled $1,743,925 for the year ended December 31, 2019, representing a slight decrease of $9,078, or 0.5%, from the year ended December 31, 2018. The principal source of revenue for the Authority is toll revenue. During 2019, toll revenue totaled $1,612,268 and constituted 93.0% of the Authority's operating revenues, as compared to $1,612,326, or 92.0%, in 2018. On the Turnpike, passenger car traffic increased 1.3% while commercial vehicle traffic increased by 0.2% resulting in an overall increase of 1.1%. On the Parkway, passenger car toll transactions decreased by 0.9% while commercial vehicle toll transactions increased by 6.8% resulting in an overall decrease of 0.8%. Toll transactions increased while toll revenue decreased on the Turnpike from the prior year. Toll transactions increased primarily due to less severe winter weather, normal growth and lower gas prices. Toll revenue has slightly decreased due to the reopening of the Pulaski Skyway, offering customers shorter and less expensive trips. On the Parkway, toll revenue increased while toll transactions decreased. This is a result of the conversion of interchange 145 to one-way tolling. Adjusting for this impact, traffic on the Parkway increased by 1.1%.

Electronic toll collection remains popular and overall usage rates continue to be strong. On the Turnpike, the E-Z Pass usage rate for passenger cars was 85.9% and for commercial vehicles was 93.7%, resulting in an overall usage rate of 86.9% in 2019, an increase from 85.9% in 2018. On the Parkway, passenger cars had a usage rate of 84.7% and commercial vehicles had a usage rate of 92.1%. The overall E-Z Pass usage rate on the Parkway increased to 84.8% in 2019 from 83.2% in 2018.

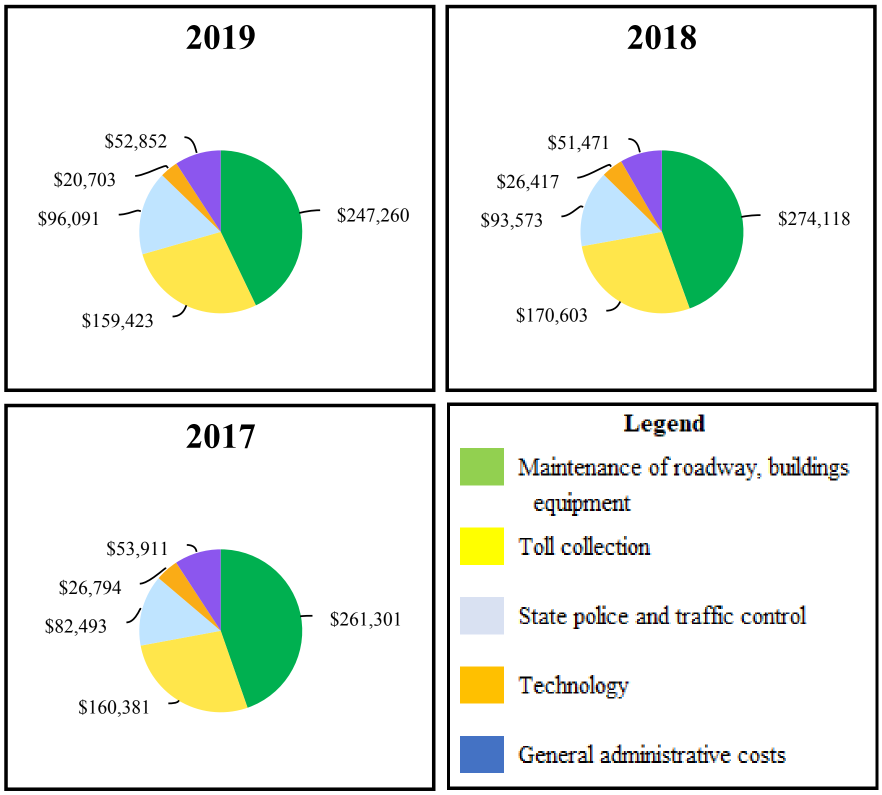
E-Z Pass fees totaled $80,329 and $84,417 for the years ended December 31, 2019 and 2018, respectively, representing a decrease of $4,088 or 4.8%. E-Z Pass fees consist of monthly membership fees, transponder sales, lost or damaged tag fees, returned check fees, administrative fees, revoked account collection fees, interest on prepaid accounts and monthly statement fees. The decrease mostly resulted from lower administrative fees collected due to an overall decline in Advisory Payment Requests collection rates.

Concession revenues consist of amounts paid to the Authority from the sale of food, fuel and convenience store items from the companies which operate the service areas on both roadways. Concession revenues were $33,104 in 2019, which represents a decrease of $3,088 or 8.5% from $36,192 in 2018. Concession revenue was lower primarily due to the closure of service areas for renovation. On the Turnpike, Thomas Edison Service Area was closed from September 2018 to June 2019 and the Alexander Hamilton Service Area was closed from January 2019 to August 2019. In addition, the Vince Lombardi and Richard Stockton Service Areas are currently closed and have been since September 2019. On the Parkway, the Monmouth Service Area was closed from September 2018 to May 2019 and the Forked River Service Area is currently closed and has been since September 2019. The Authority does receive minimum guaranteed rent payments while the service areas are closed. On the Turnpike, food sales decreased by 3.8%, fuel sales decreased by 14.3% and convenience store sales increased by 7.6% compared to last year. On the Parkway, food sales increased by 5.4%, fuel sales decreased by 9.2%, and convenience store sales increased by 37.7% compared to the same period in 2018. The Authority receives a percentage of food and convenience store sales, a per gallon fee for gasoline sales, and 50% of the gross profit margin on all diesel fuel sold for both roadways.

Miscellaneous revenue totaled $18,224 for the year ended December 31, 2019, representing a decrease of $1,844 or 9.2%, compared to $20,068 for the year ended December 31, 2018. Miscellaneous revenue includes rentals of cell tower sites, fiber lease revenue, fiber optic lines, towing commissions, park and ride receipts, and easements. The decrease in 2019 is due to one time insurance receipt of $5,900 for the Delaware River Turnpike Bridge insurance claim in 2018. This decrease is offset by $1,000 FEMA recovery for Winter Storm Quinn (which occurred in March 2018), $1,200 for the insurance claim for Delaware River Turnpike Bridge and $1,300 for surplus land sale in 2019.

Operating Expenses

Operating expenses by category for the last three years are shown below:



General operating expenses, excluding depreciation, totaled $576,329 for the year ended December 31, 2019, representing a decrease of $39,853, or 6.5%, from $616,182 for the year ended December 31, 2018. The lower operating expenses are primarily the result of a decrease in maintenance, toll collection, and technology costs by $26,858, $11,180 and $5,714, respectively, for the year ended December 31, 2019. The primary factors causing this decrease are lower snow removal and severe weather costs due to the milder winter weather, lower OPEB expense based on the actuarial report issued for the year ended December 31, 2019 and lower pension expenses based on the GASB 68 report for the year ended June 30, 2019. These savings are partially offset by an increase in the payroll cost based on the union contracts and an increase in the health benefits cost based on the actual experience and claims processed.

Maintenance expenses decreased by $26,858 to $247,260 for the year ended December 31, 2019 from $274,118 for the year ended December 31, 2018. This decrease is mainly because of less snow removal and severe weather costs because of milder weather and comparatively higher accident damage recovery. This decrease was partially offset by an increase in roadway, building and equipment maintenance for the upkeep of the Turnpike system.

Toll collection costs decreased by $11,180 to $159,423 from $170,603, for the years ended December 31, 2019 and 2018. This is partially due to a decrease in transponder expenses, as fewer transponders were issued in 2019 following the completion of the most recent tag swap program. Also, transponder expense decreased as no additions were made to the tag swap reserve as the reserve is fully funded to cover the costs of the next tag swap. This decrease is partially offset by higher credit card fees based on the increased tolls processed through E-Z Pass and an increase in the payroll costs based on contractual wage increases and increased toll technician salary costs.

State police and traffic control costs increased by $2,518 to $96,091 for the year ended December 31, 2019 from $93,573 for the year ended December 31, 2018. The primary reasons for this increase are a marginal increase in the state trooper salary and an increase in the fringe benefit rate for the trooper pension and health benefit costs.

Technology costs decreased by $5,714 to $20,703 for the year ended December 31, 2019 from $26,417 for the year ended December 31, 2018. This decrease is due to lower software and equipment maintenance costs and an increase in the allocation of costs from the technology department to the toll collection department. The purpose of this allocation is to reflect the cost of employees who perform toll equipment maintenance work as toll collection expense and not technology expense. Additionally, there were less technology improvement project related expenses during 2019.

General administrative expenses increased by $1,381 to $52,852 for the year ended December 31, 2019 from $51,471 for the year ended December 31, 2018. The increase is mainly due to an increase in the Authority's insurance costs and higher legal fees and expenses when compared to 2018. These increases were partially offset by lower self-insured settlement costs.

Finally, depreciation expense for the year ended December 31, 2019 totaled $381,389 on the gross depreciable capital asset base of $15,139,689 as compared to $14,687,160, for the year ended December 31, 2018 showing an increase of $54,773 due to an increase in the gross depreciable capital asset base by $452,529 during 2019 and a full year of depreciation expense on the assets put into service during 2018.

Nonoperating Revenues (Expenses)

Net nonoperating expenses decreased by $5,249 to $595,388 for the year ended December 31, 2019 from $600,637 for the year ended December 31, 2018 primarily due to the reduction in the contractual payments made under the State Transportation Funding Agreement (2016-2021) and the increase in investment income due to a relatively higher investment balance during 2019 as compared to 2018. This is offset by an increase in interest expense which is a result of the issuance of the Series 2019A bonds in February 2019.

The Build America Bonds subsidy represents a direct payment by the United States Treasury to the Authority originally equal to 35% of the interest payable on the Series 2009F Bonds and the Series 2010A Bonds. The Build America Bonds subsidy in 2019 increased by $286 to $76,725 in 2019 from $76,439 in 2018 due to a decline in the automatic Federal deficit reduction spending cuts. The subsidy payment received for the July 1, 2019 interest payment was reduced by 6.2% and the subsidy payment due for the

January 1, 2020 interest payment is reported to be reduced by 5.9%, while in 2018 the comparable payments were reduced by 6.6% and 6.2%, respectively.

Payments to the State of New Jersey decreased by $13,500 to $179,500 in 2019 from $193,000 in 2018. This is primarily due to a reduction in state payments under the State Transportation Projects Funding Agreement (2016-2021) and the Feeder Road Maintenance Agreement. Under the terms of the State Transportation Projects Funding Agreement dated June 28, 2016, the Authority made payments totaling $129,000 in 2019 and $166,500 in 2018. The agreement was amended in October 2018 to provide an additional one-time $25,000 payment in State fiscal 2019 (Authority calendar year 2019) for a total of $154,000 in 2019. The Authority also made annual payments to the State totaling $3,500 in 2019 and $4,500 in 2018 under the Feeder Road Maintenance and Cost Sharing Agreement, dated July 1, 2016, for feeder road maintenance provided by the New Jersey Department of Transportation. Payments under all agreements are made from the General Reserve Fund and are subordinate to debt service payments on outstanding bonds and all other obligations under the Authority's General Bond Resolution (note 16).

Investment earnings were $51,423 in 2019 as compared to $36,868 in 2018. This increase is primarily due to higher investment balances in 2019 as compared to 2018, which includes unspent proceeds from the issuance of the Series 2019A bonds in February 2019. Interest income earned by the Authority on investments generated from revenues increased to $37,985 in 2019 from $30,845 in 2018 primarily due to a general increase in short term interest rates and an increase in average invested balances. Additionally, investment earnings from unspent bond proceeds to be used for capital projects increased to $13,431 in 2019 from $6,016 in 2018, primarily as bond proceeds on hand increasing the following issuance of the Series 2019 A bonds.

Interest expense increased by $23,630 to $548,426 for the year ended December 31, 2019 as compared to $524,796 for the year ended December 31, 2018. This increase is primarily due to the interest expense incurred by the issuance of the Series 2019A bonds in February 2019. Additionally, the Authority has fully amortized the hybrid instrument borrowing associated with the 2013B, 2013 C1 and 2013 C2 interest rate swap and so no interest expense on the hybrid instrument borrowing was recognized in 2019.

2018 – 2017

Operating Revenues

Operating revenues totaled $1,753,003 for the year ended December 31, 2018, representing an increase of $54,410 or 3.2% from the year ended December 31, 2017. The principal source of revenue for the Authority is tolls. During 2018, toll revenue totaled $1,612,326 and constituted 92.0% of the Authority's operating revenues, as compared to $1,579,896, or 93.0%, in 2017. On the Turnpike, passenger car traffic increased 1.1% while commercial vehicle traffic increased by 4.8% resulting in an overall increase of 1.6%. On the Parkway, passenger car toll transactions decreased by 0.8% while commercial vehicle toll transactions increased by 3.4% resulting in an overall decrease by 0.8%. Toll transactions and toll revenue increased on the Turnpike from the prior year. This can be attributed to normal growth, the favorable economic conditions, reopening of Interchanges 6 and 6A which were closed for a significant part of the first quarter of 2017 and a stronger than projected commercial traffic growth on the Turnpike in 2018. On the Parkway, toll revenue increased while toll transactions decreased. This is a result of the conversion of interchange 145 to one-way tolling. Adjusting for this impact, traffic on the Parkway increased by 0.6%.

The increase in overall revenue was tempered by winter storms Grayson, Quinn, and Toby which negatively affected traffic and revenue on both roadways. For the Turnpike, the storms resulted in 2,013 fewer transactions and approximately $8,283 less revenue when compared to similar days in January and March. For the Parkway, the storms resulted in 3,148 fewer transactions and approximately $3,441 less revenue when compared to similar days in January and March.

Electronic toll collection remains popular and overall usage rates continue to be strong. On the Turnpike, the E-ZPass usage rate for passenger cars was 84.8% and for commercial vehicles was 92.8%, resulting in an overall usage rate of 85.9% in 2018, an increase from 84.2% in 2017. On the Parkway, the overall E-ZPass usage rate increased to 83.2% from 81.4% in 2017. During 2018, passenger cars had a usage rate of 83.1% and commercial vehicles had a usage rate of 91.0%.

E-ZPass fees totaled $84,417 and $60,505 for the years ended December 31, 2018 and 2017, respectively, representing a significant increase of $23,912 or 39.5%. E-ZPass fees consist of monthly membership fees, transponder sales, lost or damaged tag fees, returned check fees, administrative fees, revoked account collection fees, interest on prepaid accounts and monthly statement fees. The increase in part resulted from both greater administrative fees collected and higher interest income. Administrative fees have increased due to greater collection efforts from the Motor Vehicle Commission registration suspension program. Interest income rose in 2018 as a result of better returns due to a general market increase in short term interest rates and higher invested balances.

Concession revenues consist of amounts paid to the Authority from the sale of food, fuel and convenience store items from the companies which operate the service areas on both roadways. Concession revenues were $36,192 in 2018. This represents a increase of $601 or 1.7% from $35,591 in 2017. Overall, this modest increase is attributed to the change in contractual terms with HMS and Sunoco. In addition to receiving a percentage of gasoline, food and convenience store sales, the Authority receives 50% of the gross profit margin on diesel fuel sales. Fuel sales on the Turnpike decreased by 10.5% in 2018 as compared to 2017. Turnpike food sales increased 5.4%, and the convenience store sales decreased by 15.7%, compared to last year. On the Parkway, fuel sales decreased 12.5% and convenience store sales decreased 28.2% and food sales decreased 1.7%. The overall decrease in the sales, in part, can be attributed to the closure of the Thomas Edison service area on the Turnpike in September 2018 for reconstruction and the closure of the Monmouth Service area on the Parkway for reconstruction in September 2018. The Authority's revenue received from the service areas was impacted, to a certain degree, by the removal of cigarette sales in the gross sales calculations.

Miscellaneous revenue totaled $20,068 for the year ended December 31, 2018, representing an decrease of $2,533, and 11.2% respectively, compared to $22,601 for the year ended December 31, 2017. Miscellaneous revenue includes rentals of cell tower sites, fiber lease revenue, fiber optic lines, towing commissions, park and ride receipts and easements. The decrease is primarily due to inclusion of significant surplus land sale of $5,700 and a $2,925 one-time LIBOR settlement in 2017 and the lack thereof in 2018. The decline in revenue in 2018 was partially offset by an insurance recovery in 2018 representing advance payments on the Delaware River Turnpike Bridge claim filed by the Authority in 2017.

Operating Expenses

General operating expenses, excluding depreciation, totaled $616,182 for the year ended December 31, 2018, representing a increase of $31,302, or 5.4%, from $584,880 for the year ended December 31, 2017. The higher operating expenses are primarily the result of an increase in Maintenance expense and Toll Collection expenses as well as State Police costs by $12,817, $10,222 and $11,080, respectively, for the year ended December 31, 2018.

Maintenance expenses increased by $12,817 to $274,118 for the year ended December 31, 2018 from $261,301 for the year ended December 31, 2017 The main reasons for this increase is attributed to higher severe weather-related costs due to a harsh winter season in the beginning of 2018 and increase in roadway emergency repairs. In 2018, the Authority spent a total of $45,069 on snow/severe weather events, which was the second highest amount ever spent. This increase is partially offset by a savings in building rental due to the purchase of the Authority's headquarters building in last quarter of 2017.

Toll collection costs increased by $10,222 to $170,603 from $160,381, for the years ended December 31, 2018 and 2017, mainly due to higher credit card fees, as well as higher expenses payable to the New Jersey E-ZPass vendor, due to an increase in the dollar value and the number of transactions processed.

State police and traffic control costs increased by $11,080 to $93,573 for the year ended December 31, 2018 from $82,493 for the year ended December 31, 2017. The primary reason for this increase is due to more troopers patrolling on both the roadways, an increase in the trooper pension and health benefits costs effective July 1, 2018, and a decrease in trooper costs charged to capital projects.

Technology costs decreased by $377 to $26,417 for the year ended December 31, 2018 from $26,794 for the year ended December 31, 2017. Reasons for this slight decrease are lower hardware expenses and increase in the allocation of toll collection equipment maintenance cost to toll collection expense category. This decrease is marginally offset by the increased spending on technology improvement projects such as the New Jersey E ZPass contract implementation upgrade, and the new capital project management system.

General administrative expenses decreased by $2,440 to $51,471 for the year ended December 31, 2018 from $53,911 for the year ended December 31, 2017. The decrease is mainly due to lower claim settlements incurred under the deductible limit for various insurance claims and professional service charges compared with 2017.

Overall, the operating expenses also increased due to an increase in OPEB expense. OPEB expense increased due to the GASB 75 implementation. OPEB expense is reasonably allocated to all the operating departments based on salary.

Finally, depreciation expense for the year ended December 31, 2018 totaled $326,616 on the gross depreciable capital asset base of 14,687,160 as compared to $304,989, for the year ended December 31, 2017 showing an increase of $21,627 due to an increase in the gross depreciable capital asset base by $1,470,241 during 2018.

Nonoperating Revenues (Expenses)

Net nonoperating expenses increased by $109,147 to $600,637 for the year ended December 31, 2018 from $491,490 for the year ended December 31, 2017 primarily due the increase in interest expense and a decrease in investment income. The increase in interest expense is a result of the early adoption of GASB 89, as interest expense related to capital projects is no longer capitalized. An offset to this increase in interest expense was the contractual reduction in the payments to the State of New Jersey under the new State Transportation Projects Funding Agreement (2016-2021).

The Build America Bonds subsidy represents a direct payment by the United States Treasury to the Authority originally equal to 35% of the interest payable on the Series 2009F Bonds and the Series 2010A Bonds. The Build America Bonds subsidy in 2018 was $76,439, an increase of $286 from $76,153 in 2017 due to a decline in the automatic Federal deficit reduction spending cuts. The subsidy payment received for the July 1, 2018 interest payment was reduced by 6.6% and the subsidy payment received for January 1, 2019 interest payment was reduced by 6.2%, while in 2017 the comparable payments were reduced by 6.9% and 6.6%, respectively.

Payments to the State of New Jersey decreased by $39,500 in 2018 to $193,000 from $232,500 in 2017. The payments to the State include an annual payment of $22,000 in 2018 and 2017 to assist in transportation purposes. Under the terms of a State Transportation Projects Funding Agreement dated June 28, 2016, the Authority made payments totaling $166,500 in 2018 and 204,000 in 2017. The Authority also made annual payments to the State totaling $4,500 in 2018 and $6,500 in 2017 as per the Feeder Road Maintenance and Cost Sharing Agreement, dated July 1, 2016, for feeder road maintenance provided by the New Jersey Department of Transportation. Payments under all agreements are made from the General Reserve Fund and are subordinate to debt service payments on outstanding bonds and all other obligations under the Authority's General Bond Resolution (note 16).

Investment earnings were $36,868 in 2018 as compared to $87,529 in 2017. This decrease is mainly due to recognizing an investment gain of $79,938 representing the reclassification of the negative mark to market value of the Series 2000B-G interest rate swap in October 2017. In 2018, the Authority does not have any interest rate swaps classified as investments and therefore did not record any mark to market investment gain or loss. Interest income earned by the Authority on investments generated from revenues was $30,845 in 2018, and has significantly increased from $17,732 earned in 2017 primarily due to a general increase in short term interest rates and increase in average invested balances. In addition, in 2018 and 2017, investment earnings were $6,016 and $5,277, respectively representing interest income relating to unspent bond proceeds to be used for capital projects.

Interest expense increased by $102,883 to $524,796 for the year ended December 31, 2018 as compared to $421,913 for the year ended December 31, 2017. The Authority adopted GASB 89 effective January 1, 2018 and discontinued capitalization of interest expenses as of January 1, 2018 primarily causing the increase in interest expense. In addition, interest expense increased due to a full year of expense recognized on the Series 2017A Bonds issued in April 2017.

(Dollars shown in thousands)

Adjusted Revenue, Expenses and Change in Net Position

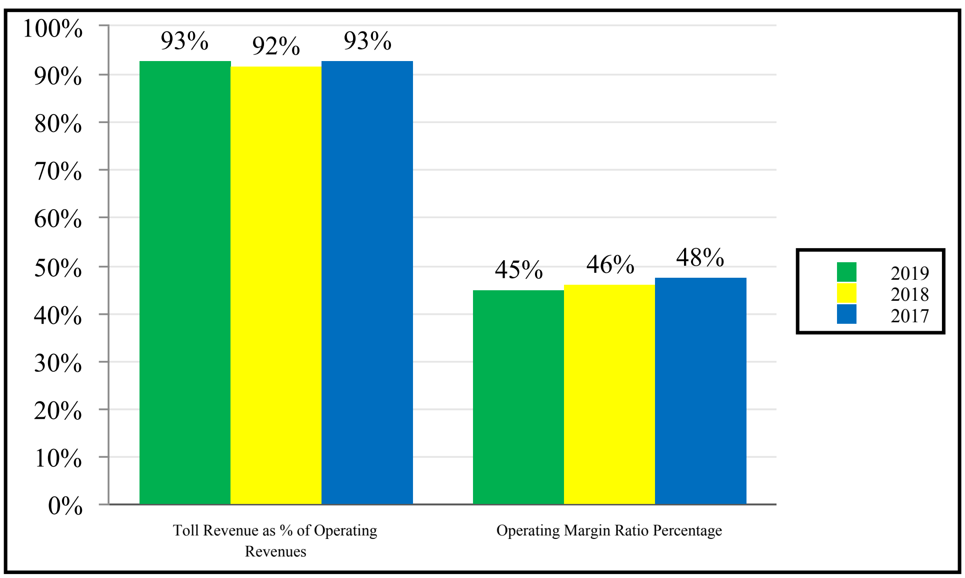
	2019	2018	2017
Change in Net Position as per GAAP Financials	$ 191,019	209,768	329,704
Non-cash adjustments:			
Miscellaneous Revenue	(1,422)	—	—
Total operating expenses	(2,915)	13,954	26,059
Interest expense, Turnpike Revenue Bonds	8,736	(10,635)	(136,270)
Investment income (loss)	—	—	(64,516)
Interfund transfers	—	8,301	(23,488)
Leases GASB 62, net	35,766	—	—
Total Non-Cash Adjustment	$ 40,165	11,620	(198,215)
Garden State Arts Foundation	(73)	112	79
Change in net position as per Bond Resolution	$ 231,111	221,500	131,568
Add other non-cash expenses			
Depreciation	381,389	326,616	304,989
Amortization	(56,386)	(52,064)	(46,327)
Change in Net Position - Non-GAAP	$ 556,114	496,052	390,230

Shown above is the change in Net Position as per the Bond Resolution and has been calculated by adjusting the change in Net Position as per GAAP for non-cash expenses such as the non-cash portion of the GASB 49, GASB 53, GASB 68, and GASB 75. The Change in Net Position – Non-GAAP is calculated by adding back the non-cash expenses such as depreciation and amortization of discounts and premium to the Adjusted Change in Net Position – Bond Resolution. Management believes that the Adjusted Change in Net Position above, which eliminates the more significant GAAP basis non-cash line items, presents an alternate view of the strength of the Authority's financial results.

(A Component Unit of the State of New Jersey) (Dollars shown in thousands)

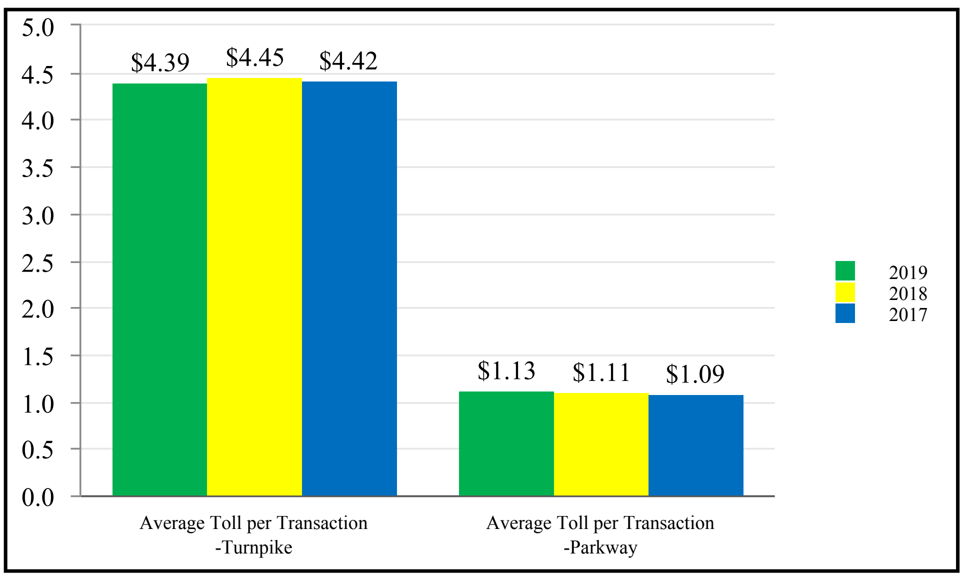
Revenue and Expense Ratio Analysis - GAAP Basis

Ratio	2019	2018	2017	Explanation
Toll Revenue as % of Operating Revenue	93%	92%	93%	Toll revenue as percentage of operating revenue is calculated by dividing toll revenue by operating revenue. This percentage remained relatively consistent over the years at an average of 93%, indicating that almost all of the Authority's revenue is earned from toll collection.
Operating Margin Ratio Percentage	45%	46%	48%	The operating margin ratio percentage is calculated by dividing operating income by total operating revenue. This ratio is 45% in 2019 as compared to 46% in 2018. This ratio has decreased in 2019 as operating expenses increased and operating revenue has decreased slightly in 2019 as compared to 2018.



(A Component Unit of the State of New Jersey) (Dollars shown in thousands)

Ratio	2019	2018	2017	Explanation
Average Toll per Transaction - Turnpike	4.39	4.45	4.42	Average toll per transaction is calculated by dividing toll revenue by the number of toll transactions. With no change in the toll rates, the decrease in the average toll per transaction in 2019 is a result of shorter average trip lengths. Overall there is no significant change in the average toll per transaction from 2017 to 2019.
Average Toll per Transaction - Parkway	1.13	1.11	1.09	The average toll per transaction on the Parkway remained essentially unchanged over the three year period with a slight increase in 2019 from 2018. This increase is mostly the impact of the conversion of Interchange 145 to a one-way tolling which resulted in fewer transactions increasing the average toll per transaction.



Toll Revenue Schedules

New Jersey Turnpike

Schedule of Toll Revenue

For the Twelve Months Ended December 31, 2019, 2018 and, 2017

(all amounts in thousands)

Class	Description	2019 Toll revenue	2019 Number of vehicles	2018 Toll revenue	2018 Number of vehicles	2017 Toll revenue	2017 Number of vehicles
			(Unaudited)		(Unaudited)		(Unaudited)
1	Passenger car, motorcycle, taxi or hearse, light truck	$ 839,516	233,454	825,876	230,497	797,953	227,978
2	Vehicles having two axles other than type described under Class 1	67,113	9,369	64,385	9,016	64,460	8,676
3	Vehicle (vehicles), single or in combination, having three axles	39,240	4,421	30,918	3,895	29,672	3,632
4	Vehicle (vehicles), single or in combination, having four axles	34,311	2,974	35,401	3,018	35,639	2,877
5	Vehicle (vehicles), single or in combination, having five axles	215,236	15,080	230,467	15,927	233,919	15,345
6	Vehicle (vehicles), single or in combination, having six or more axles	11,844	586	12,991	632	7,783	411
7	Buses having two axles	2,019	516	2,316	465	2,334	448
8	Buses having three axles	13,935	1,372	12,941	1,298	14,026	1,298
	Nonrevenue vehicles	—	1,333	—	1,556	—	1,559
		1,223,214	269,105	1,215,295	266,304	1,185,786	262,224
	Nonrevenue vehicles	—	(1,333)	—	(1,556)	—	(1,559)
	Toll adjustments and discounts	(4,407)	—	(4,423)	—	(4,237)	—
	Net Uncollected Tolls	(42,331)	—	(31,548)	—	(29,811)	—
		$1,176,476	267,772	1,179,324	264,748	1,151,738	260,665

Garden State Parkway

Schedule of Toll Revenue

For the Twelve Months Ended December 31, 2019, 2018 and, 2017

(all amounts in thousands)

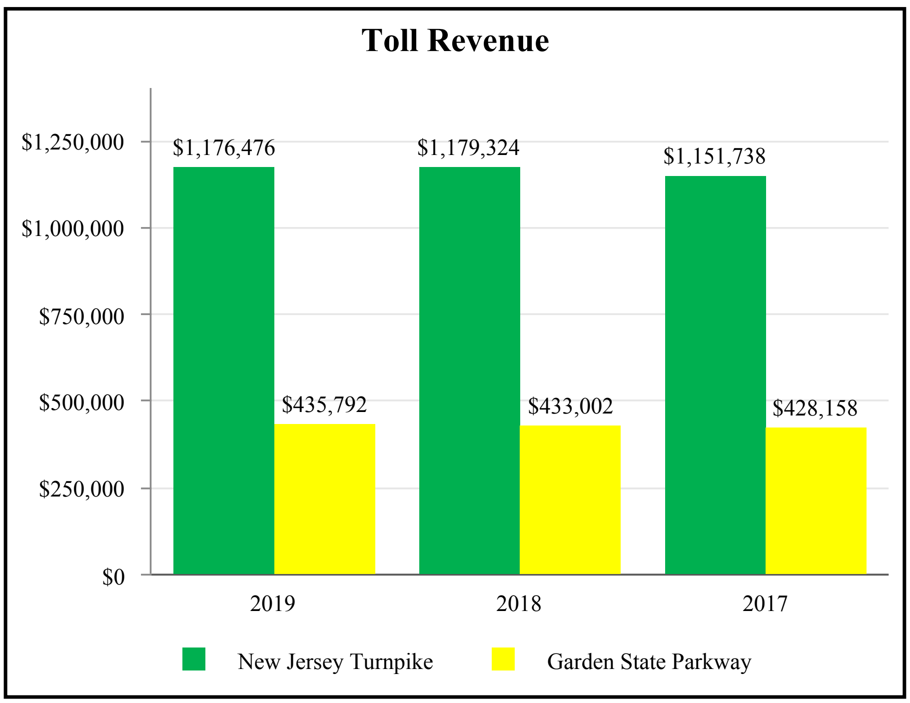
Class	Description	2019 Toll revenue	2019 Number of vehicles	2018 Toll revenue	2018 Number of vehicles	2017 Toll revenue	2017 Number of vehicles
			(Unaudited)		(Unaudited)		(Unaudited)
1	Passenger car, motorcycle, taxi or hearse, light truck	$ 426,261	381,110	422,778	384,509	420,385	387,787
2	Vehicles having two axles other than type described under Class 1	3,009	1,413	2,279	997	1,938	830
3	Vehicle (vehicles), single or in combination, having three axles	3,386	1,096	3,408	1,108	3,469	1,144
4	Vehicle (vehicles), single or in combination, having four axles	3,926	913	3,914	908	3,830	888
5	Vehicle (vehicles), single or in combination, having five axles	2,886	614	2,843	596	2,778	583
6	Vehicle (vehicles), single or in combination, having six or more axles	140	27	129	23	126	21
7	Buses having two axles	1,919	684	1,866	714	1,788	687
8	Buses having three axles	2,723	893	2,534	936	2,589	956
	Nonrevenue vehicles	—	1,575	—	1,566	—	1,532
		444,250	388,325	439,751	391,357	436,903	394,428
	Nonrevenue vehicles	—	(1,575)	—	(1,566)	—	(1,532)
	Toll adjustments and discounts	(347)	—	(341)	—	(318)	—
	Net Uncollected Tolls	(8,111)	—	(6,408)	—	(8,427)	—
		$ 435,792	386,750	433,002	389,791	428,158	392,896

(A Component Unit of the State of New Jersey) (Dollars shown in thousands)

Key Performance Metrics - Revenue and Expenses

Toll Revenue – Toll revenue has been relatively consistent over the past three years. When comparing 2019 to 2018, there is no change in the toll revenue on both the roadways. In total, toll revenue is consistent due to milder weather conditions and stable gas prices in 2019 and 2018. The increase in the revenue on the Parkway is due to an increase in the passenger car revenue despite the conversion to one-way tolling at Interchange 145, while the slight decline on the Turnpike is due to the full-year impact from the re-opening of the Pulaski Skyway. Toll revenue from 2018 to 2017 increased for both the roadways, for an overall increase of 2.1%. The increase in the toll revenue is due to milder weather conditions, favorable economic conditions, and strong commercial traffic throughout 2018. Toll revenue increased in 2018 despite the ongoing construction on the Newark Bay - Hudson County Extension.

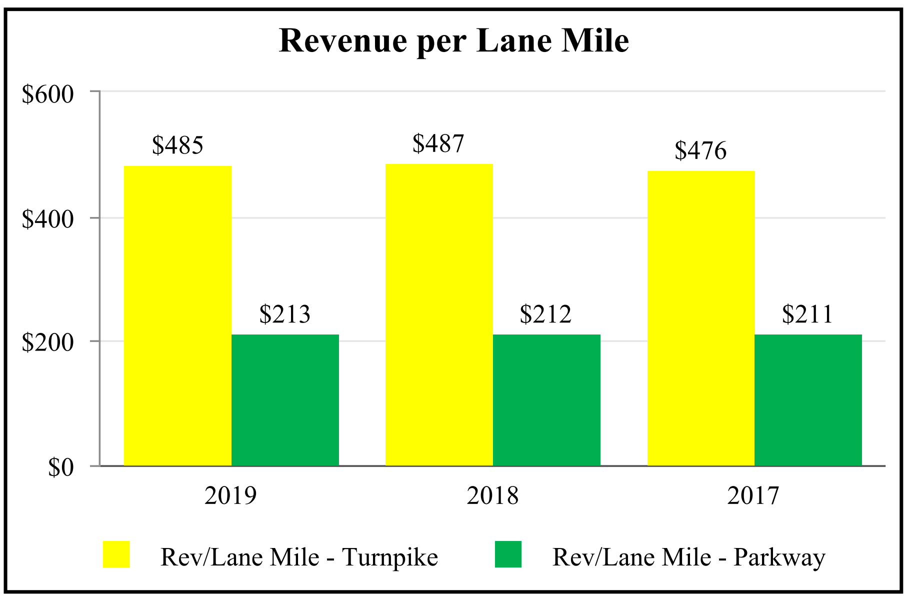
	New Jersey Turnpike	Garden State Parkway	Total
2019	$ 1,176,476	435,792	1,612,268
2018	$ 1,179,324	433,002	1,612,326
2017	$ 1,151,738	428,158	1,579,896
% change from 2018 to 2019	(0.2)%	0.6 %	— %
% change from 2017 to 2018	2.4 %	1.1 %	2.1 %



(Dollars shown in thousands)

Revenue per Lane Mile – Revenue per lane mile is consistent over the past two years as there is no significant change in the toll revenue or in the lane miles in this period. Toll revenue is consistent between 2019 and 2018 due to milder weather conditions and stable gas prices, even with the slight increase in lane miles in 2018 as compared to 2017, there is a significant increase in revenue per lane mile due to an increase in toll revenue. The increase in toll revenue is due to milder winter weather conditions, favorable economic conditions, and strong commercial traffic on the Turnpike.

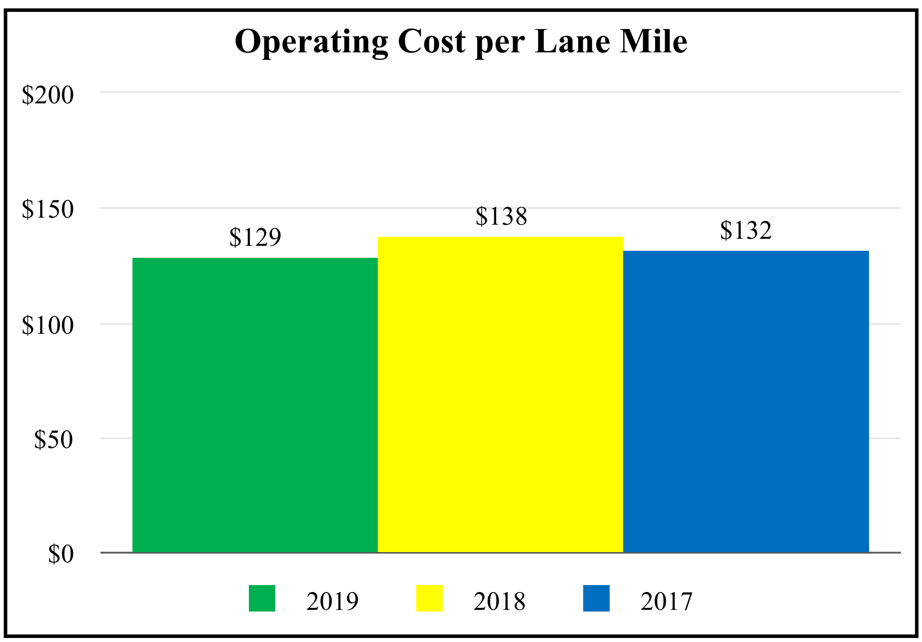
		2019	2018	2017
Toll Revenue - Turnpike	$	1,176,476	1,179,324	1,151,738
Toll Revenue - Parkway		435,792	433,002	428,158
Total Toll Revenue	$	1,612,268	1,612,326	1,579,896
Lane Miles (actual) - Turnpike		2,427	2,423	2,418
Lane Miles (actual) - Parkway		2,050	2,041	2,028
Total Lane Miles (actual)		4,477	4,464	4,446
Revenue per Lane Mile - Turnpike	$	485	487	476
Revenue per Lane Mile - Parkway	$	213	212	211
Revenue per Lane Mile - Authority	$	360	361	355



(A Component Unit of the State of New Jersey) (Dollars shown in thousands)

Operating Cost per Lane Mile – Operating expenses shown below include maintenance, toll collection, state police and traffic control, technology and general administrative expenses, but excludes depreciation. From 2018 to 2019, there was a decrease in the operating cost per lane mile which can be attributed to the decrease in total operating expenses in 2019 by $39,853 as compared to 2018. Lane miles remains consistent during this period. From 2017 to 2018, there was an increase in operating cost per lane mile which can be attributed to the increase in total operating expenses in 2018 by $31,302 as compared to 2017. During this period the increase in lane mile was marginal. Hence the increase in cost per lane mile is due to increase in the operating expenses.

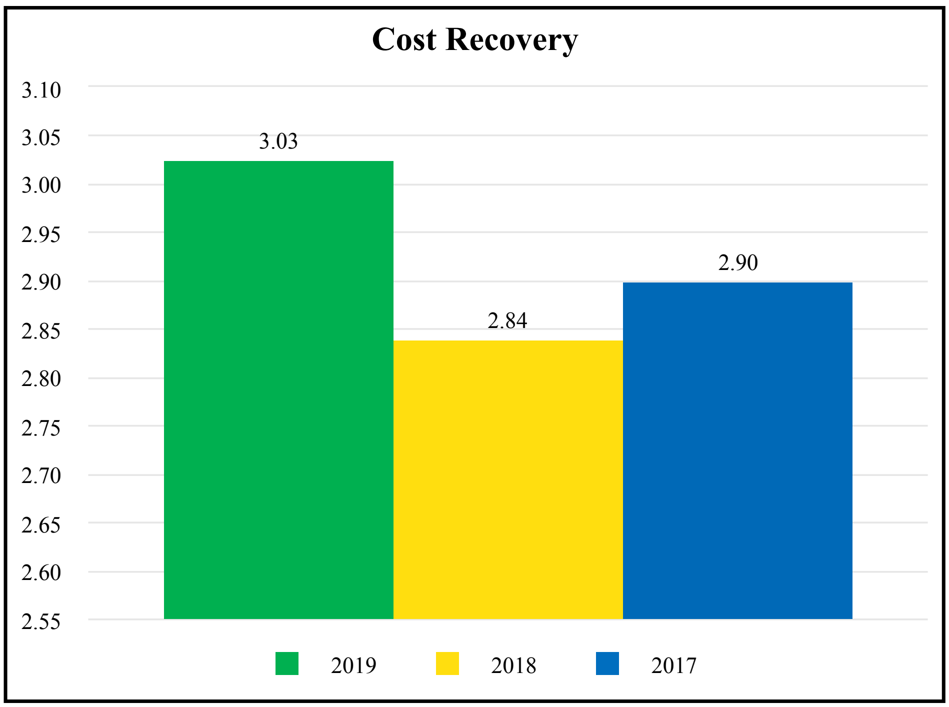
	2019	2018	2017
Total operating expenses	576,329	616,182	584,880
Lane Miles (actual) - Turnpike	2,427	2,423	2,418
Lane Miles (actual) - Parkway	2,050	2,041	2,028
Total Lane Miles	4,477	4,464	4,446
Operating cost Excluding Depreciation/Lane Mile - Authority	$ 129	138	132



(Dollars shown in thousands)

Cost Recovery – The cost recovery ratio is calculated by dividing operating revenues by operating expenses (excluding depreciation). Therefore, a ratio 1.0 or above is a positive sign as it indicates operating expenses are being fully recouped by operating revenues. The cost recovery ratio was over 2.0 in each of the years 2017 – 2019, which is a strong indicator of the Authority's ability to meet its operating expenses with its operating revenues. From 2018 to 2019, the cost recovery ratio increased due to an decrease in operating expenses. From 2017 to 2018, the ratio decreased due to an increase in operating expenses that is not proportional to the increase in operating revenue.

	2019	2018	2017
Operating Revenue	$ 1,743,925	1,753,003	1,698,593
Operating Expenses (excluding depreciation)	$ 576,329	616,182	584,880
Cost Recovery	3.03	2.84	2.90



Financial Management Principles and Guidelines

In December 2012, the Authority adopted its "Financial Management Principles and Guidelines" (the Guidelines). Among the policies established, the Authority will manage its toll rates, expense budget and debt issuance program to achieve minimum senior debt service coverage of 1.40x and total requirement coverage of 1.20x. The Authority will also manage its cash flow and total expenditure levels such that it maintains average unrestricted cash balance in the General Reserve Fund equal to at least $75,000. The Guidelines were amended in November 2015 to increase the minimum unrestricted cash balance in the General Reserve Fund to $100,000. In January 2017, the Authority once again amended its Guidelines with respect to the minimum General Reserve Fund Balance requirement. The amended Guidelines increase the unrestricted cash balance in the General Reserve fund as follows:

(1) a minimum balance of $125,000 at 12/31/17;
(2) a minimum balance of $150,000 at 12/31/18;
(3) a minimum balance of $175,000 at 12/31/19;
(4) beginning in 2020, by December 31st of each year, a minimum balance equal to 10% of that year's budgeted total annual revenue.

The Guidelines are implemented at the discretion of the Authority and are not a legal covenant with bondholders. Such Guidelines can be changed or eliminated at any time at the discretion of the Authority. As specified in the Guidelines, the Authority also adopted an Interest Rate Swap Management Plan in April 2013 which was amended in November 2015, an Investment Policy in September 2013, and a Debt Management Policy in January 2014. These documents may be found on the Authority's website at http://www.njta.com/investor-relations/about-investor-relations.

Debt Administration

The issuance of new bonds is conducted in accordance with the New Jersey Turnpike Act of 1948, constituting Chapter 454 of the Laws of New Jersey of 1948, as amended and supplemented and the Turnpike Revenue Bond Resolution adopted on August 20, 1991, as amended, restated and supplemented. The issuance of new bonds requires the approval of the Board of Commissioners and prior approval in writing from the Governor and from either or both the State Treasurer and the Director of the Division of Budget and Accounting of the Department of Treasury, payable solely from tolls and other revenues of the Authority. Detailed information on the Bonds activity during 2019 and 2018 can be found in note 6.

(Dollars shown in thousands)

Bonds payable are shown below:

Series	2019	2018	2017
Series 2004 (C-2)	132,850	132,850	132,850
Series 2005 (A-B, D1-D4)	382,385	414,885	414,885
Series 2009 (F, H)	1,411,695	1,411,695	1,430,820
Series 2010 (A)	1,850,000	1,850,000	1,850,000
Series 2012 (A-B)	661,000	819,435	819,435
Series 2013 (A, F)	397,360	402,980	602,330
Series 2014 (A, C)	1,198,730	1,201,860	1,201,860
Series 2015 (A-H)	1,125,585	1,125,585	1,125,585
Series 2016 (A-D)	325,035	325,035	325,035
Series 2017 (A-G)	3,078,965	3,080,305	3,080,305
Series 2019 (A)	449,110	—	—
Premium and discount, net	540,391	567,258	627,624
Total outstanding bonds	$ 11,553,106	11,331,888	11,610,729

2019 – 2018

On February 7, 2019, the Authority issued $449,110 of Series 2019A bonds. The purpose of the Series 2019A bonds was to (i) to continue to fund projects under the $7 Billion CIP, and (ii) to pay the costs of issuance of the Series 2019A bonds. Moody's Investors Services, Inc., S&P Global Ratings and Fitch Ratings assigned the ratings A2, A+ and A, respectively, to the Series 2019A bonds. In addition, Fitch Ratings assigned a Positive Outlook to the Authority's bonds.

2018 – 2017

During 2018, the Authority did not issue or refund any Turnpike Revenue Bonds. As of December 31, 2018, Moody's Investors Services, Inc., S&P Global Ratings and Fitch Ratings have the ratings A2, A+ and A, respectively, to the Authority's outstanding bonds.

Build America Bond Subsidy Payments

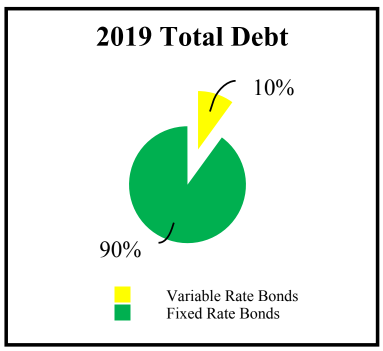
The Authority's Series 2009F and Series 2010A bonds were issued as Build America Bonds (BAB). The BAB program was authorized by the American Recovery and Reinvestment act enacted in February 2009 to encourage local spending on new construction. Under the program, the U.S. Treasury makes a direct payment to the Authority originally equal to 35% of the interest expense for eligible bonds.

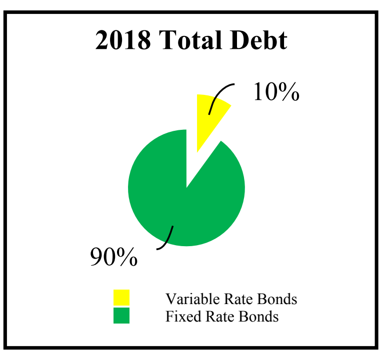
The Budget Control Act of 2011 reduced the amount of the subsidy paid by the Federal Government through automatic federal spending cuts commonly known as sequestration. The payment to the Authority received in April 2017 (for July 1, 2017 interest payment) was reduced by 6.9%, or $2,817. The payment received in December 2017 (for January 1, 2018) was reduced by $2,695 or 6.6%, the payments received in May 2018 (for July 1, 2018) was reduced by $2,695 or 6.6%, the payments received in November and December 2018 (for January 1, 2019) were reduced by $2,532 or 6.2%, the payment received in May

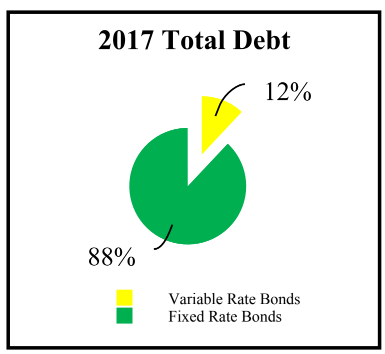
2019 (for July 1, 2019) was reduced by $2,532 or 6.2%, and the payment accrued in December 2019 due (for January 1, 2020) is expected to be reduced by $2,409 or 5.9%. The Internal Revenue Service has reported that the Authority's payment due on July 1, 2020 will also have a 5.9% reduction. There is uncertainty as to if the Federal Government will make further cuts to the program.

Debt Portfolio

The Authority's bond portfolio at December 31, 2019 had a par value outstanding of $11,012,715 as compared to $10,764,630 at December 31, 2018 and $10,983,105 at December 31, 2017. The par value of bonds outstanding increased in 2019 as compared to 2018 due to the of issuance of Series 2019A bonds. The percentage of fixed rate versus variable rate bonds has increased since 2015, as the Authority has solely issued fixed rate debt to finance the $7 Billion CIP to avoid the risks associated with variable rate debt. As of December 31, 2019 and 2018, total debt includes 90% of fixed rate bonds and only 10% of variable rate bonds. As of December 31, 2017, total debt included 88% of fixed rate bonds and 12% of variable rate bonds. These percentages are well within the Authority's Guidelines, which limit variable rate bonds to 20% of total bonds outstanding.







The Authority has been actively reducing the basis risk on its interest rate swap portfolio when possible over the past several years. Basis risk includes those variable rate bonds which have an interest rate index (either SIFMA or LIBOR) used to determine interest payments on the bonds which is different from the interest rate index (either SIFMA or LIBOR) used to calculate the variable payment received on the associated interest rate swap. At December 31, 2019, December 31, 2018, and December 31, 2017, the Authority was not exposed to basis risk, all interest rate swaps that had basis risk were amended to receive a variable rate based on the same rate or index as the hedged variable rate debt. The Authority's variable rate bonds and swaps currently use the LIBOR index, and LIBOR is not guaranteed after 2021. With the transition from LIBOR on the horizon, the Authority acknowledges the replacement language for swaps and bonds could have an impact on future basis risk.

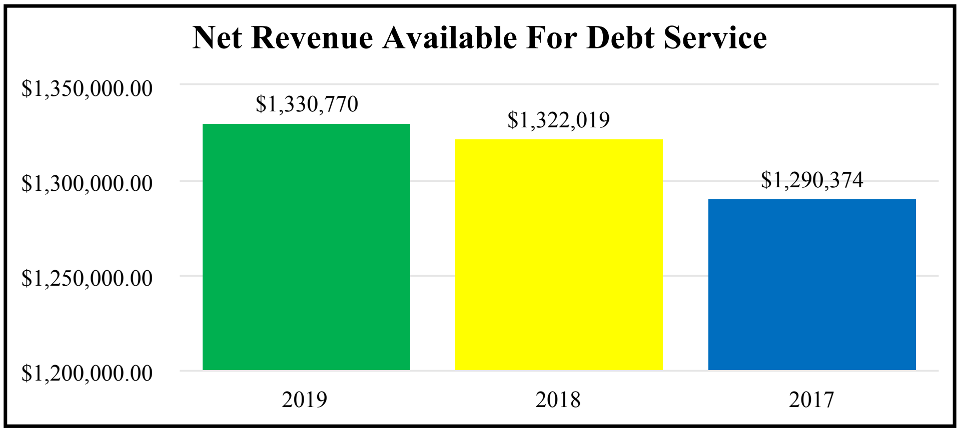
(Dollars shown in thousands)

Debt Service Coverage

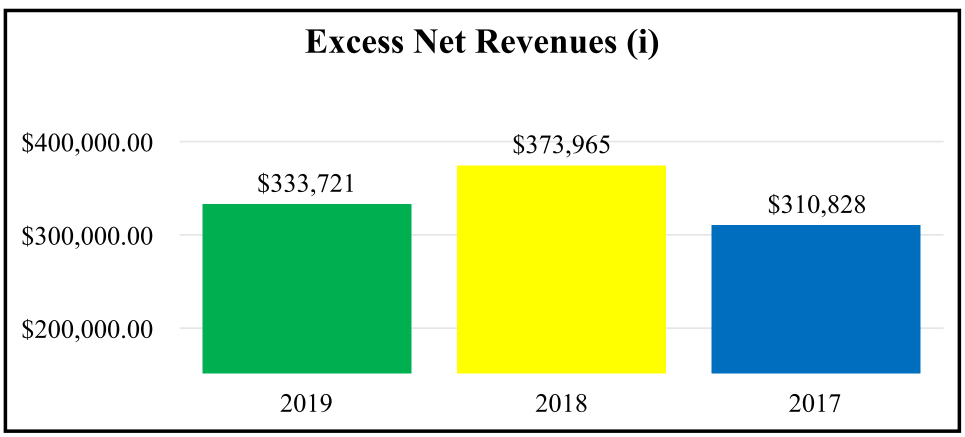
The Revenue Requirement under Section 713(b) of the Turnpike Revenue Bond Resolution states that in each calendar year, Net Revenues shall at least equal the Net Revenue Requirement for such year. The Net Revenue Requirement means with respect to any period of time, "an amount equal to the greater of (i) the sum of Aggregate Debt Service, Maintenance Reserve Payments, Special Project Reserve Payments and payments, if any, to the Charges Fund for such period or (ii) 1.20 times the Aggregate Debt Service for such period."

		2019	2018	2017
(i)				
Net revenue available for debt service	$	1,330,770	1,322,019	1,290,374
Less net revenue requirements (the sum of aggregate debt service, maintenance reserve, special project reserve and charges funds payments)		(997,049)	(948,054)	(979,546)
Excess net revenues	$	333,721	373,965	310,828
(ii)				
Net revenue available for debt service	$	1,330,770	1,322,019	1,290,374
Less net revenue requirements computed under test (120% of aggregate debt service requirements)		(989,137)	(946,174)	(987,581)
Excess net revenues	$	341,633	375,845	302,793
Net revenue available for debt service	$	1,330,770	1,322,019	1,290,374
Debt service requirements	$	824,281	788,478	822,984
Debt service coverage ratio		1.61	1.68	1.57

Net revenue available for debt service has increased in 2019 by 0.7%, or $8,751 to $1,330,770 from $1,322,019 in 2018. The primary reason for this increase is a decrease in operating expenses. In 2019, operating revenue decreased due to a decrease in E-Z Pass fees and concession revenue. This decrease was offset by a decrease in operating expenses from lower maintenance costs and toll collection costs. In 2018, net revenue available for debt service increased by $31,645 mainly due to an increase in operating revenue. This increase was partially offset by an increase in operating expenses from higher maintenance costs and state police costs in 2018.

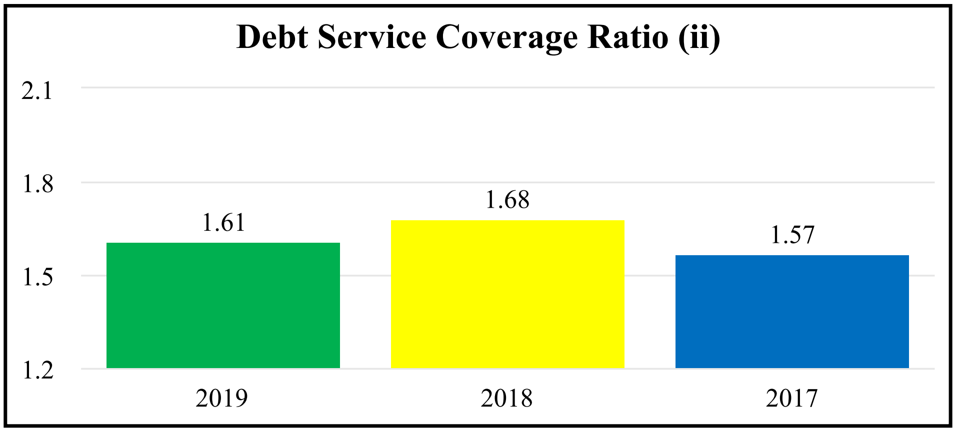


Excess net revenue has decreased in 2019 by 11% or $40,244 to $333,721 from $373,965 in 2018 even with higher net revenue available for debt service in 2019. The primary reason for this decline is an increase in the debt service requirements and revenue transfer to the maintenance reserve. In 2018, the excess net revenue increased by 20% or $63,137 to $373,965 from $310,828 in 2017 due to an increase in the operating revenue and reduction debt service requirements.



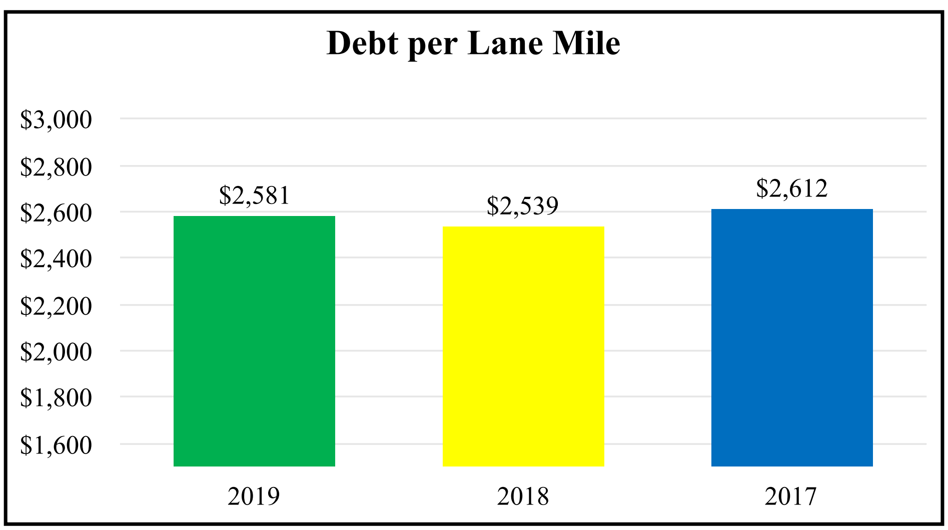
Debt service coverage ratio has decreased in 2019 by 4.2% or 0.07 to 1.61 from 1.68 in 2018. The primary reason for this decrease is an increase in principal payments and interest expense due on outstanding debt. In 2018, the debt coverage ratio has increased by 7.0% or 0.11 to 1.68 from 1.57 in 2017 due to an increase in net revenue available for debt service and lower principal payments and interest expense due to outstanding debt.

(Dollars shown in thousands)



Debt per Lane Mile – Debt per lane mile increased by $42 to $2,581 in 2019 from $2,612 in 2018 due to the increase in bonds outstanding from the issuance of the Series 2019A bonds in February 2019. The bonds financed improvement work which did not add lane miles to the system. The debt per lane mile decreased in 2018 to $2,539 from $2,612 in 2017 due to a decrease in the bond outstanding as of December 31, 2018 and also due to a marginal increase in the total lane mile in 2018 as compared to 2017.

	2019	2018	2017
Bond indebtedness, net	$ 11,553,106	11,331,888	11,610,729
Lane Miles (actual) – Turnpike	2,427	2,423	2,418
Lane Miles (actual) – Parkway	2,050	2,041	2,028
Total Lane Miles (actual)	4,477	4,464	4,446
Debt per Lane Mile – Authority	$ 2,581	2,539	2,612



Contacting Authority's Financial Management

The purpose of this narrative and the attached exhibits was to assist the readers in obtaining a general overview of the Authority's business and finances. If you should have any questions about this report or need clarification on its contents, please contact the Chief Financial Officer of the New Jersey Turnpike Authority, P.O. Box 5042, Woodbridge, New Jersey 07095-5042 or via email at info@njta.com.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Statements of Net Position

December 31, 2019 and 2018

(In thousands)

Assets		2019	2018
Current assets:			
Cash	$	152,528	144,298
Restricted cash		24,813	25,706
Investments		945,981	899,180
Restricted investments		897,242	716,763
Receivables, net of allowance		101,922	61,756
Inventory		22,365	27,400
Due from State of New Jersey		86	2,158
Restricted deposits		20,594	29,081
Prepaid expenses		9,170	8,982
Total current assets		2,174,701	1,915,324
Noncurrent assets:			
Restricted investments		694,493	556,994
Long term receivables		26	—
Capital assets, net of accumulated depreciation		12,094,445	11,960,282
Total noncurrent assets		12,788,964	12,517,276
Total assets	$	14,963,665	14,432,600
Deferred Outflows			
Deferred outflows:			
Accumulated decrease in fair value of hedging derivatives	$	12,555	—
Deferred amounts on refunding and derivative instruments		226,271	253,649
Deferred amount relating to pensions		47,715	76,452
Deferred amount relating to other postemployment benefit		102,349	119,504
Total deferred outflows	$	388,890	449,605
Liabilities			
Current liabilities:			
Accounts payable and accrued expenses	$	229,184	196,888
Due to State of New Jersey		2,943	2,831
Accrued interest payable		279,122	273,740
Unearned revenue		207,105	164,576
Current portion of bonds payable		228,205	201,025
Current portion of hybrid instrument borrowing		13,735	13,547
Current portion of other liabilities		10,450	13,073
Total current liabilities		970,744	865,680
Noncurrent liabilities:			
Bonds payable, net		11,324,901	11,130,863
Hybrid instrument borrowing		91,115	104,850
Other liabilities		112,849	113,717
Other postemployment benefits liability		1,602,269	1,740,913
Interest rate swap liabilities		29,567	6,738
Net pension liability		329,534	365,599
Total noncurrent liabilities		13,490,235	13,462,680
Total liabilities	$	14,460,979	14,328,360
Deferred Inflows			
Deferred inflows:			
Accumulated increase in fair value of hedging derivatives	$	—	15,369
Deferred amount relating to pensions		134,426	135,004
Deferred amount relating to other postemployment benefit		167,876	5,217
Total deferred inflows	$	302,302	155,590
Net Position			
Net position:			
Net investment in capital assets	$	1,687,349	1,517,792
Restricted under trust agreements		246,242	225,094
Unrestricted		(1,344,317)	(1,344,631)
Total net position	$	589,274	398,255

See accompanying notes to basic financial statements.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Statements of Revenues, Expenses, and Changes in Net Position

Years ended December 31, 2019 and 2018

(In thousands)

		2019	2018
Operating revenues:			
Toll revenue	$	1,612,268	1,612,326
E-ZPass fees		80,329	84,417
Concession revenue		33,104	36,192
Miscellaneous revenue		18,224	20,068
Total operating revenues		1,743,925	1,753,003
Operating expenses:			
Maintenance of roadway, buildings, and equipment		247,260	274,118
Toll collection		159,423	170,603
State police and traffic control		96,091	93,573
Technology		20,703	26,417
General administrative costs		52,852	51,471
Depreciation		381,389	326,616
Total operating expenses		957,718	942,798
Operating income		786,207	810,205
Nonoperating revenues (expenses):			
Build America Bonds subsidy		76,725	76,439
Federal and State reimbursements		1,006	7
Payments to the State of New Jersey		(179,500)	(193,000)
Interest expense, Turnpike Revenue Bonds		(548,426)	(524,796)
Other bond expenses		(1,306)	(11)
Loss on disposal of capital assets		—	(597)
Investment income		51,423	36,868
Arts Center		4,690	4,453
Total nonoperating (expenses), net		(595,388)	(600,637)
Change in net position, before capital contributions		190,819	209,568
Capital contributions		200	200
Change in net position		191,019	209,768
Net position – beginning of year		398,255	1,248,013
Cumulative effect of adoption of GASB 75		—	(1,059,526)
Net position – end of year	$	589,274	398,255

See accompanying notes to basic financial statements.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Statements of Cash Flows

Years ended December 31, 2019 and 2018

(In thousands)

		2019	2018
Cash flows from operating activities:			
Receipts from customers and other operating activities	$	1,786,719	1,752,619
Payments to suppliers		(258,428)	(312,636)
Payments to employees		(171,888)	(167,750)
Payments for self-insured health benefit claims		(86,004)	(75,330)
Net cash provided by operating activities		1,270,399	1,196,903
Cash flows from noncapital financing activities:			
Receipts from Federal and State reimbursements		1,006	8,915
Payments to State of New Jersey		(179,500)	(193,000)
Proceeds from Arts Center		4,690	4,453
Net cash used in noncapital financing activities		(173,804)	(179,632)
Cash flows from capital and related financing activities:			
Proceeds acquired from new capital debt		478,629	—
Purchases and sales of capital assets, net		(500,010)	(473,839)
Principal paid on capital debt		(201,025)	(218,475)
Proceeds from Build America Bonds subsidy		38,301	76,439
Interest paid on capital debt		(590,694)	(561,583)
Payments for bond expenses		(1,306)	(11)
Proceeds from capital contributions		200	200
Net cash used in capital and related financing activities		(775,905)	(1,177,269)
Cash flows from investing activities:			
Purchases of investments		(12,138,112)	(10,082,565)
Sales and maturities of investments		11,777,042	10,135,458
Interest received		47,717	33,907
Net cash (used in) provided by investing activities		(313,353)	86,800
Net increase (decrease) in cash		7,337	(73,198)
Cash and restricted cash – beginning of year		170,004	243,202
Cash and restricted cash – end of year	$	177,341	170,004
Reconciliation of operating income to net cash provided by operating activities:			
Operating income	$	786,207	810,205
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation expense		381,389	326,616
Changes in assets and liabilities:			
Receivables		305	(2,270)
Inventory		5,034	(4,325)
Prepaid expenses		(219)	(69)
Accounts payable and accrued expenses		23,680	(40,750)
Unearned revenue		42,529	12,878
Other liabilities		(2,856)	25,092
Other postemployment benefit liability		(138,644)	187,290
Net pension liability		(36,065)	(72,894)
Deferred outflows of resources related to pension		28,737	33,926
Deferred inflows of resources related to pension		(578)	35,737
Deferred outflows relating to other postemployment benefit		17,155	(119,504)
Deferred inflows relating to other postemployment benefit		162,659	5,217
Pollution remediation liability		1,066	(246)
Net cash provided by operating activities	$	1,270,399	1,196,903

See accompanying notes to basic financial statements.

(1) Organization

The New Jersey Turnpike Authority (the Authority) is a body corporate and politic organized and existing by virtue of the New Jersey Turnpike Authority Act of 1948, constituting Chapter 454 of the Laws of New Jersey of 1948, as amended and supplemented (the Act). The Authority is a public instrumentality exercising essential governmental functions. The Act authorizes the Authority to construct, maintain, repair, and operate transportation projects at locations established by law or by the Authority. Pursuant to the Act, the Authority has owned and operated the New Jersey Turnpike (the Turnpike) since the time the Turnpike opened for traffic in 1951. On May 27, 2003, the Act was amended to empower the Authority, effective at the Transfer Date, which was July 9, 2003, to assume all powers, rights, obligations and duties of the New Jersey Highway Authority (the Highway Authority), which owned and operated the Garden State Parkway (the Parkway) and the PNC Bank Arts Center. As a result, the assets and liabilities of the Authority and the Highway Authority are now combined under the ownership and operation of the Authority and the Turnpike and Parkway now constitute the Turnpike System.

The Act also authorizes the Authority to fix and establish tolls for the use of the Turnpike System, and to issue Turnpike revenue bonds or notes of the Authority, subject to prior approval in writing from the Governor and either or both the State Treasurer and the Director of the Division of Budget and Accounting of the Department of the Treasury, payable solely from tolls and other revenues of the Authority. Under the provisions of the Act, the Turnpike bonds or notes and the interest thereon shall not be deemed to constitute a debt or liability or a pledge of the faith and credit of the State or any political subdivision thereof.

The Authority has no stockholders or equity holders and all bond proceeds, revenues or other cash received must be applied for specific purposes in accordance with the provisions of the above Act and the Turnpike Revenue Bond Resolution of 1991 as amended, restated and supplemented (the Bond Resolution) for security of the bondholders. The Authority's Board of Commissioners is comprised of eight members as follows: the Commissioner of the New Jersey Department of Transportation, ex officio, or the Commissioner's designee; five members appointed by the Governor with the advice and consent of the Senate, and two members appointed by the Governor, one upon the recommendation of the President of the Senate and one upon the recommendation of the Speaker of the General Assembly. The Governor designates the chairman and vice chairman, who serve in these positions at the pleasure of the Governor and until their successors have been designated. As of December 31, 2019 and 2018, one seat was vacant.

Five members constitute a quorum and the vote of five members is necessary for any action taken by the Authority. The Act provides that the Governor shall have the right to veto any action of the Authority; however the Act prohibits the Governor or legislature from taking any actions that would impair the rights of Authority bondholders.

(2) Summary of Significant Accounting Policies

(a) Reporting Entity

The Governmental Accounting Standards Board (GASB) establishes the criteria used in determining which organizations should be included in these financial statements. The GASB's Codification of Governmental Accounting and Financial Reporting Standards, Section 2100, requires the inclusion of government organizations for which the Authority is financially accountable. Financial accountability is defined as: 1) appointment of a voting majority of the component unit's board and either (a) the ability to impose will by the primary government or (b) the possibility that the component unit will provide a financial benefit to or impose a financial burden on the primary government; or 2) fiscal dependency on the primary government.

The Garden State Arts Foundation, Inc. (the Foundation) (see note 14) is included in the financial statements presented in accordance with accounting principles generally accepted in the United States of America as a blended component unit. Although legally separate from the Authority, the Foundation's members include the Commissioners of the Authority, who represent a voting majority of the Foundation's members. The Authority can impose its will upon the Foundation by virtue of the fact that the entirety of the Foundation's Board is comprised solely of Authority Board members.

Additionally, the Authority is a component unit of the State of New Jersey, and its financial statements are included in the State of New Jersey's Comprehensive Annual Financial Report as a discrete component unit.

(b) Basis of Accounting

The Authority's activities are accounted for using the flow of economic resources measurement focus and the accrual basis of accounting. All assets, liabilities, net position, revenues and expenses are accounted for as an enterprise fund with revenues recorded when earned and expenses recorded at the time liabilities are incurred.

The financial statements of the Authority have been prepared in conformity with with the Generally Accepted Accounting Principles of the United States of America (GAAP) as applied to government units. The Authority follows GAAP as prescribed by GASB. The GASB is the accepted standard-setting body for establishing governmental accounting and financial reporting principles.

(c) Capital Assets

Capitalization Policy

The cost to construct, acquire or replace an existing asset (or otherwise prolong the useful life of an existing asset) is capitalized under the Authority's capitalization policy. The capitalization threshold is $50 and includes equipment valued over $50 or any purchase related to a capital project whose project value exceeds $50.

Capital assets are reported at cost, including all ancillary charges necessary to place the assets in their intended location and condition for use. If land is purchased, the capitalized amount includes the purchase price plus costs such as legal fees, filling, and excavation costs incurred to put the land in condition for its intended use. The capitalized amounts for building include both acquisition and capital improvement costs and net construction period interest. Beginning on January 1, 2018, the Authority no longer capitalizes interest costs incurred before the end of the construction period following the implementation of GASB Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period* (GASB 89).

(Dollars shown in thousands)

An asset is deemed substantially complete when the structure or project is ready for the purpose for which it was constructed.

Depreciation Policy

In 2016, the Authority performed a study of the useful lives and revised the useful lives of certain asset categories on a prospective basis. In 2018, the Building Improvements asset subclass was added to the depreciation policy. This class represents assets that are integral to building use but, have an estimated useful life less than the building structure. Capital assets are depreciated using straight-line method over their estimated useful lives as follows:

Roadways:	
Road Bed	100 yrs
Road Surface	10 yrs
Sound Barriers	35 yrs
Retaining Walls	75 yrs
Concrete Surfaces and Barrier Curb	40 yrs
Bridges:	
Piers and Abutments	75 yrs
Deck	40-50 yrs
Spans	40-50 yrs
Major Bridge Repairs	20 yrs
Buildings:	
Buildings	35-50 yrs
Buildings Improvements	20 yrs
Equipment	3-50 yrs

(d) Investments

Investments are reported at fair value based on quoted market prices or other fair value measurement methods allowed by GASB Statement No. 72, *Fair Value Measurements and Application* (GASB 72). All investment income, including changes in the fair value of investments, is reported as non-operating revenue.

Investment Objectives

All investment decisions will meet the following requirements:

(1) Safeguard and preserve the principal amount of invested funds.

(2) Manage and maintain adequate liquidity to meet cash flow requirements, including bond payments.

(3) Maintain demand bank balances at minimum levels consistent with sound operations.

(4) Maximize the total rate of return on invested funds.

Authorized Investments - Investment Policy

The investment policies of the Authority are established in conformity with the Investment Policy adopted by the Board of Commissioners on September 24, 2013, which defines investment securities to mean any of the following securities legal for investment of the Authority's funds at the time of the purchase thereof:

(a) Federal securities, which are (i) any direct and general obligations of, or any obligations guaranteed by, the United States of America, including but not limited to interest obligations of the Resolution Funding Corporation or any successor thereto, (ii) any obligations of any state or political subdivision of a state which bonds are fully secured as to principal and interest by an irrevocable pledge of moneys or direct and general obligations of, or obligations guaranteed by the United States of America, which moneys or obligations are segregated in trust and pledged for the benefit of the holders of the bonds, (iii) certificates of ownership of the principal or interest of direct and general obligations of, or obligations guaranteed by, the United States of America, which obligations are held in trust by a commercial bank which is a member of the Federal Reserve System,

(b) Bonds, debentures, notes or other evidences of indebtedness issued by any agency or instrumentality of the United States to the extent such obligations are guaranteed by the United States or by another such agency the obligations (including guarantees) of which are guaranteed by the United States,

(c) Bonds, debentures, notes or other evidences of indebtedness issued by any of the following agencies:

- Government National Mortgage Association (GNMA)
- Federal Home Loan Mortgage Corporation (FHLMC)
- Federal National Mortgage Association (FNMA)
- Federal Home Loan Banks (FHLB)
- Federal Land Banks
- Federal Intermediate Credit Banks
- Banks for Cooperatives
- Tennessee Valley Authority
- United States Postal Service
- Farmers Home Administration

- Export-Import Bank
- Federal Financing Bank
- Student Loan Marketing Association (SLMA);

(d) Negotiable or non-negotiable certificates of deposit issued by any bank, trust company or national banking association, which certificates of deposit shall be continuously secured or collateralized by obligations described in subparagraphs (a), (b), and (c) above, which shall have a market value (exclusive of accrued interest) at all times at least equal to the principal amount of such certificates of deposit and shall be lodged with the Trustee, as custodian, by the bank, trust company or national banking association issuing such certificates of deposit.

(e) Uncollateralized negotiable or non-negotiable certificates of deposit issued by any bank, trust company or national banking association, the unsecured obligations of which are rated in one of the two highest rating categories, without regard to rating sub-categories, by Moody's Investors Service (Moody's) and Standard & Poor's (S&P).

(f) Repurchase agreements collateralized by obligations described in subparagraphs (a), (b), and (c) above with any registered broker/dealer subject to the Securities Investors Protection Corporation jurisdiction, which has an uninsured, unsecured and unguaranteed obligation rated "Prime-1" or "A3" or better by Moody's and "A-1" or "A" or better by S&P, or any commercial bank with the above ratings provided:

(i) a master repurchase agreement or specific written repurchase agreement governs the transaction, which characterizes the transaction as a purchase and sale of securities.

(ii) the securities are held free and clear of any lien, by the Trustee or an independent third party acting solely as agent for the Trustee, and such third party is (i) a Federal Reserve Bank, (ii) a bank which is a member of the Federal Deposit Insurance Corporation and which has combined capital, surplus, and undivided profits of not less than $75,000, or (iii) a bank approved in writing for such purpose by each Credit Issuer, if any, and the Trustee shall have received written confirmation from such third party that it holds such securities, free and clear of any lien, as agent for the Trustee,

(iii) a perfected first security interest under the Uniform Commercial Code, or book entry procedures prescribed at 31 CFR 306.1 et seq. or 31 CFR 350.0 et seq. or a successor provision in such securities is created for the benefit of the Trustee,

(iv) the repurchase agreement has a term of six month or less, or the Authority will value the collateral securities no less frequently than monthly and will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within two business days of such valuation,

(v) the repurchase agreement matures on or before a debt service payment date (or other appropriate liquidation period), and

(vi) the fair market value of the securities in relation to the amount of the repurchase obligation is equal to at least 100%.

(g) Banker's acceptances, Eurodollar deposits and certificates of deposit (in addition to the certificates of deposit provided for by subparagraphs (d) and (e) above) of the domestic branches of foreign banks having a capital and surplus of $1,000,000, or more, or any bank or trust company organized under the laws of the United States of America or Canada, or any state or province thereof, having capital and surplus, in the amount of $1,000,000; provided that the aggregate maturity value of all such banker's acceptances and certificates of deposit held at an times as investment of funds under the Bond Resolution with respect to any particular bank, trust company or national association shall not exceed 5% of its capital and surplus; and provided further that any such bank, trust company, or national association shall be rated in one of the two highest rating categories, without regard to rating sub-categories, by both Moody's and S&P.

(h) Other obligations of the United States of America or any agency thereof which may then be purchased with funds belonging to the State of New Jersey or which are legal investments for savings banks in the State of New Jersey.

(i) Deposits in the New Jersey Cash Management Fund.

(j) Obligations of any state, commonwealth or possession of the United States or a political subdivision thereof or any agency or instrumentality of such a state, commonwealth, possession or political subdivision, provided that at the time of their purchase such obligations are rated in either of the two highest rating categories by both Moody's and S&P.

(k) Commercial paper with a maturity date not in excess of 270 days rated A1+ and P-1 by Moody's at the time of such investment, issued by an entity incorporated under the laws of the United States or any state thereof.

(e) Accounts Receivable

Accounts receivable consist primarily of toll revenue due from commercial companies and other agencies, Federal Emergency Management Agency (FEMA) disaster assistance, charges and amounts due from individuals, and revenues receivable from operators of food and fuel concessions at the service plazas. Toll revenue accounts receivable from E-ZPass postpaid commercial accounts are collateralized by either a surety bond or cash. Toll revenue accounts receivable from other E-ZPass agencies are guaranteed under an E-ZPass Group Agency Agreement (formerly known as Interagency Group Reciprocity Agreement). A reserve for uncollectible accounts receivable is established based on specific identification and historical experience. Other Government Receivables primarily consist of Build America Bonds subsidy receivable from the Internal Revenue Service.

(Dollars shown in thousands)

Accounts receivable and allowance for doubtful accounts consist of the following as of December 31, 2019 and 2018:

	December 31	
	2019	2018
E-ZPass Group Agencies	$ 36,739	35,672
FEMA	142	142
New Jersey E-Zpass Agencies	878	781
Other Government Receivables	39,266	77
Total Government Receivables	$ 77,025	36,672
NJ E-Zpass Customers (1)	$ 4,409	5,893
Postpaid E-Zpass Customers (2)	9,195	8,758
Property Damage Claims	2,577	1,378
Accounts Receivable - Other	9,930	11,122
Allowance for Doubtful Accounts	(1,214)	(2,067)
Total Non-Governmental Receivables, Net	24,897	25,084
Total Accounts Receivables, Net	$ 101,922	61,756

(1) New Jersey E-ZPass customer accounts receivable are collateralized by cash deposits totaling $2,277 at December 31, 2019 and $1,780 at December 31, 2018.

(2) Postpaid E-ZPass customer accounts receivable are collateralized by cash and/or surety bonds totaling $30,821 at December 31, 2019 and $30,603 at December 31, 2018.

(f) Supplies Inventory

Inventories are reported on an average cost basis. Inventories consist of rock salt/ calcium chloride, operating supplies (materials to maintain the roadway and vehicles), E-ZPass transponders, and fuel (gas and diesel).

Inventory consists of the following as of December 31, 2019 and 2018:

	December 31	
	2019	2018
Rock Salt - Calcium Chloride	$ 10,102	12,307
Operating Supplies	6,937	7,157
E-ZPass Transponders	4,540	7,164
Fuel	786	772
	$ 22,365	27,400

(g) Deposits

Deposits consist mainly of collateral deposits for owner controlled insurance programs for general liability and workers compensation claims related to the Authority's $7 Billion Capital Improvement Program and deposits for the Authority's self-funded health insurance.

(h) Bonds Payable

Bonds payable consist of the total amount of outstanding bonds plus unamortized premiums and less unamortized discounts.

(i) Compensated Absences

The Authority accrues employees' unused sick leave and vacation time to be used at a later date or paid in cash upon termination or retirement from the Authority. The liability for sick leave and vacation is based on the employment date and the limits vary based on the employee's specific union contract and/or Authority policy. The liability for both amounts is calculated based on the pay and salary rates in effect at the statement of net position date.

(j) Unearned Revenue

The Authority recognizes revenue when earned. Amounts received in advance of the periods in which related services are rendered are recorded as a liability. Unearned revenue includes prepayment of tolls from New Jersey E-ZPass customers, prepayment of rent by companies for the use of the Authority's fiber optic lines and communication towers, advance rent paid by Live Nation Worldwide, Inc, HMS Host and Sunoco (see further discussion in notes 17 and 18), as well as advance payments by the Pennsylvania Turnpike Commission for its share of maintenance work on a jointly owned facility.

(k) Deferred Outflows and Deferred Inflows of Resources

Deferred outflows include deferred amount on refunding and derivative instruments, deferred amount relating to pensions, deferred amount relating to other postemployment benefit (OPEB), and change in fair value of hedging instruments. Deferred outflows of resources are a consumption of net position that is applicable to a future reporting period.

Deferred inflows include change in fair value of hedging derivatives, deferred amount relating to pensions and deferred amount relating to other postemployment benefit (OPEB). Deferred inflows of resources are an increase in net position that is applicable to a future reporting period.

Change in fair value of hedging derivatives is resulting from the change due to deferred gain or loss and amortization of deferred gain or loss on interest rate swaps. Deferred amount on refunding is resulting from a loss in refinancing of debts due to a difference between the reacquisition price and the net carrying amount of the old debt and is amortized over the life of the related debt. Deferred outflows and deferred inflows of resources relating to pensions are reported for differences between expected or projected results compared to actual results related to the Authority's proportionate share in the cost sharing pension plan as well as changes in the Authority's proportion of the plan from the prior period. Deferred outflows also include the portion of employer contributions subsequent to the measurement date. Deferred outflows and deferred inflows of resources related to OPEB are the result of differences between the actual and expected experience and the changes of assumptions which are not reflected in the current year's OPEB expense. Deferred outflows relating to OPEB also include the payments of the retiree health benefits payments subsequent to the measurement date of the liability.

(l) Net Position

Net position is displayed in three components as follows:

Net investment in capital assets - This consists of capital assets, net of accumulated depreciation, less the outstanding balances of any bonds, notes, or other borrowings that are attributable to the acquisition, construction, or improvement of those assets.

Restricted under trust agreements - This consists of net position that is legally restricted by outside parties or by law through constitutional provisions or enabling legislation. When both restricted and unrestricted resources are available for use, generally it is the Authority's policy to use restricted resources first, and then unrestricted resources when they are needed.

Unrestricted - This consists of net position that does not meet the definition of "restricted" or "net investment in capital assets."

(m) Toll Revenue

Revenues from tolls are recognized in the period earned. Toll revenue is considered earned when a vehicle passes through a toll collection point and is recorded by the toll collection monitoring system. Toll revenue from transactions which are recorded as a violation by the toll collection monitoring system are recorded as an uncollected toll (reduction of toll revenue) on the day the transaction occurs, and any toll revenue collected from the violation enforcement process is recognized as violation toll revenue when received. Pursuant to the provisions of the Bond Resolution, the Authority has covenanted to charge and collect such tolls as are required in order that in each calendar year net revenue shall at least equal the net revenue requirement under the aforementioned resolution. The Act authorizes the Authority to set tolls subject to prior approval in writing from the Governor and from either or both the State Treasurer and the Director of Budget and Accounting of the Department of the Treasury. The Act further provides that the powers conferred upon the Governor and the Treasurer of the State described shall be exercised with due regard for the rights of the holders of bonds of the Authority at any time outstanding, and nothing in, or done pursuant to, the Act shall in any way limit, restrict or alter the obligation or powers of the Authority or officer of the Authority to carry out and perform in every detail each and every covenant, agreement or contract at any time made or entered into by or on behalf of the Authority with respect to its bonds or for the benefit, protection or security of the holders thereof.

(n) E-ZPass Fees

E-ZPass fees consist of the Authority's share of fees and charges generated from the operation of the New Jersey E-ZPass Customer Service Center (NJ E-ZPass CSC) as well as administrative fees collected on the Authority's behalf. The NJ E-ZPass CSC is currently operated by the NJ E-ZPass group and Conduent, Inc. (formerly known as Xerox State and Local Solutions, Inc.). The NJ E-ZPass group consists of the New Jersey Turnpike Authority, South Jersey Transportation Authority, Delaware River Port Authority, Delaware River Bay Authority, the Burlington County Bridge Commission, and the Delaware River Joint Toll Bridge Commission. Effective June 1, 2019, the Cape May County Bridge Commission joined the NJ E-ZPass group.

The fees and charges consist primarily of the monthly membership fee charged to New Jersey E-ZPass account holders and the administrative fee collected from toll evaders. In addition, other fees are charged to E-ZPass account holders for such items as monthly statement delivery, transponders sales, lost and stolen transponders and returned checks. Revenue is also generated from allowing certain parking lots to accept E-ZPass as payment and interest on prepaid and tag deposit account balances. For financial reporting purposes, fees and charges are recognized when earned, which is generally when a customers E-ZPass account is charged, for all but administrative fees and parking fees, which are recognized when received.

(o) Classification of Revenues over Expenses

The Authority has classified its revenues and expenses as either operating or nonoperating.

Operating revenues include activities that have the characteristics of exchange transactions including tolls, E-ZPass fees, rental fees received from concessionaires, and miscellaneous operating revenues. Nonoperating revenue includes activities that have the characteristics of non-exchange transactions, such as the Build America Bonds subsidy and investment income.

Operating expenses include the costs of operating and maintaining the toll roads, administrative expenses, and depreciation on capital assets. All expenses not meeting this definition, including interest expense, are reported as nonoperating expenses.

(p) Income Taxes

The Authority is exempt from federal income taxes under the Internal Revenue Code Section 115 and from state income taxes under N.J.S.A. 27:25-16. Accordingly, no provision is recorded for federal and state income taxes.

(q) Pension and Other Postemployment Benefits

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions* (GASB 68), establishes standards for the measurement and reporting of the proportionate share of the net pension liability and pension expense. For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pension expense, information about the fiduciary net position of the State of New Jersey Public Employees' Retirement System (PERS) and additions to/ deductions from PERS fiduciary net position have been determined on the same basis as they are reported by PERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments of the plan are reported at fair value (note 11).

GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* (GASB 75), establishes accounting and financial reporting for other postemployment benefits (OPEB) that are provided to the employees of state and local governmental employers. GASB 75 establishes standards for recognizing and measuring liabilities, deferred outflows of resources, deferred inflows of resources, and expenses related to OPEB in the basic financial statements. OPEB includes postemployment healthcare, as well as other forms of postemployment benefits (e.g., life insurance) when provided separately from a pension plan (note 12).

(r) Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

(s) Capital Contributions

Capital contributions include funding from outside sources, inclusive of state and local governments, agencies and authorities for highway, bridge and other capital improvement projects. The Authority recognized $200 in both 2019 and 2018 respectively as capital contributions from outside sources as partial funding for capital projects. In 2019 and 2018, capital contributions were received primarily for the parking lot improvement project at the Monmouth service area.

(t) Reclassification

Certain prior year amounts have been reclassified to conform with the current year's presentation.

(u) Adoption of Accounting Pronouncements

The Authority adopted GASB Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements* (GASB 88) in 2019. The primary objective of GASB 88 is to improve the information disclosed in notes to governmental financial statements related to debt, including direct borrowings and direct placements. The adoption of GASB 88 did not have any impact on the financial statements, other than revised note disclosures.

(v) Accounting Pronouncements Issued but Not Yet Effective

The accounting pronouncements issued but not yet effective are GASB Statement No. 87, *Leases* (GASB 87), GASB Statement No. 91, *Conduit Debt Obligations*

(GASB 91), GASB Statement No. 92, *Omnibus 2020* (GASB 92), GASB Statement No. 93, *Replacement of Interbank Offered Rates* (GASB 93), GASB Statement No. 94, *Public-Private and Public-Public Partnerships and Availability Payment Arrangements* (GASB 94), GASB Statement No. 96, *Subscription-Based Information Technology Arrangements* (GASB 96), and GASB Statement No. 97, *Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans-An Amendment of GASB Statements No.14 and No.18, and a Supersession of GASB Statement No. 32* (GASB 97).

GASB 87 requires a government entity to better meet the information needs of financial statement users by improving accounting and financial reporting for leases. GASB 91 provides a single method of reporting conduit debt obligations by issuers and eliminate diversity in practice associated with these obligations. GASB 92 helps in improving the consistency of authoritative literature by addressing process issues that have been identified during the implementation of certain GASB Statements. GASB 93 addresses accounting and financial reporting implications that result from the replacement of the interbank offered rate. GASB 94 helps in improving the financial reporting by addressing issues related to public-private and public-public partnership agreements (PPPs). GASB 96 helps in improving the accounting and financial reporting of subscription-based information technology arrangements (SBITAs) for government end users. GASB 97 helps in financial reporting associated with certain defined contribution pension plans and defined contribution other postemployment benefit (OPEB) plans. The Authority is currently evaluating the applicability and the impact of these new statements.

In May 2020, Governmental Accounting Standards Board issued GASB Statement No. 95, *Postponement of the Effective Dates of Certain Authoritative Guidance* (GASB 95). The primary objective of this Statement is to provide temporary relief to Governments and other stakeholders in the light of the COVID-19 pandemic. That objective is accomplished by postponing the effective dates of certain provisions in Statements and Implementation Guides that first became effective or are scheduled to become effective for periods beginning after June 15, 2018, and later. As a result of GASB 95, the Authority will defer the effective dates for the standards not yet implemented.

(3) Cash and Investments

The New Jersey Turnpike Authority is authorized to engage in investment activity pursuant to the Act, and the Bond Resolution. Specific investment policies and practices are set forth in certain sections of the Authority's Investment Policy adopted on September 24, 2013. These guidelines are adhered to by the Authority's Finance Department when making day-to-day investment decisions. The Authority principally invests in securities of United States agencies, highly rated commercial paper, demand accounts, certificates of deposit, and repurchase agreements. According to management, the Authority is not in violation of any provisions of the Act, the Bond Resolution or its Investment Policy.

(a) Cash

All moneys held under the Bond Resolution, except amounts held by the Trustee or amounts which constitute investment securities, shall be continuously and fully secured by pledging, as collateral security, direct obligations of or obligations guaranteed by the United States of America having a fair value not less than the amount of such moneys.

The total cash carrying amount as of December 31, 2019 and 2018 is $177,341 and $170,004, respectively. The actual amount of cash on deposit in all bank accounts as of December 31, 2019 and 2018 was $162,250 and $161,211, respectively. Authority accounts had a book balance as of December 31, 2019 and 2018 of $176,730 and $169,391, respectively, actual cash on deposit of $161,631 and $160,553, respectively, and are collateralized by pledged securities totaling $185,760 and $188,847, respectively, held in the Authority's name by the Authority's financial institutions or its agents. The Foundation's cash balance as of December 31, 2019 and 2018 includes a book balance of $611 and 613, respectively. The actual amount of cash on deposit in the Foundation's bank accounts as of December 31, 2019 and 2018 was $619 and $658, respectively, of which $435 and $434, respectively, was insured by the Federal Deposit Insurance Corporation (FDIC) and $184 and $224, respectively, which was not insured or collateralized.

(b) Investments

All securities, other than securities held by the respective trustees for the benefit of the bondholders, are held by the Authority. All investment transactions are recorded on a transaction date basis.

Fair Value Measurement

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the financial statement measurement date. The fair value hierarchy categorizes the inputs to valuation techniques used to measure fair value into three levels as follows:

- Level 1 - unadjusted quoted prices for identical assets or liabilities in active markets that a government can access at the measurement date
- Level 2 - quoted prices other than those included within Level 1 and other inputs that are observable for an asset or liability, either directly or indirectly
- Level 3 - unobservable inputs for an asset or liability

The fair value hierarchy gives the highest priority to Level 1 inputs and the lowest priority to Level 3. When the fair value of an asset or a liability is measured using inputs from more than one level of the fair value hierarchy, the measurement is considered to be based on the lowest priority level that is significant to the entire measurement.

(Dollars shown in thousands)

While the Authority believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

The following is a description of the valuation methodologies used for instruments measured at fair value:

- Certificates of Deposit - The fair value of certificates of deposits are based on matrix pricing based on the securities' relationship to benchmark quoted prices.
- Commercial Paper - The fair value is based on model-derived pricing based on the securities' purchase cost and date.
- Federal Agency Notes and U.S. Treasury Bills - The fair value of federal agency notes and U.S. treasury bills are based on quoted prices for identical securities in markets that are not active or quoted prices for similar securities in active markets.
- U.S. Treasury Notes - The fair value of U.S. treasury notes are based on quoted prices for identical securities in markets that are not active or quoted prices for similar securities in active markets.
- State of New Jersey Cash Management Fund - The fair value of the State of New Jersey Cash Management Fund is based on quoted or published prices.

The Authority's investments as of December 31, 2019 and 2018 are summarized in the following tables by their fair value hierarchy:

December 31, 2019

	Total	Level 1	Level 2
Investments measured at fair value:			
Certificates of Deposit	$ 734,682	—	734,682
Commercial Paper	409,761	—	409,761
Federal Agency Notes	795,092	688,781	106,311
State of New Jersey Cash Management Fund	25,206	25,206	—
U.S. Treasury Bills	547,890	547,890	—
U.S. Treasury Notes	25,085	25,085	—
Total investments	$ 2,537,716	1,286,962	1,250,754

(Dollars shown in thousands)

December 31, 2018

	Total	Level 1	Level 2
Investments measured at fair value:			
Certificates of Deposit	$ 468,305	—	468,305
Commercial Paper	511,090	—	511,090
Federal Agency Notes	842,017	287,025	554,992
State of New Jersey Cash Management Fund	49,854	49,854	—
U.S. Treasury Bills	301,671	301,671	—
Total investments	$ 2,172,937	638,550	1,534,387

Investment Maturity

The Authority's Investment Policy specifies maximum maturity limits by Bond Resolution Fund and by type of investment. At the time of purchase, the maturity of each security in the portfolio may not exceed the following maximum time frames for the respective fund in which the investment is made. The maximum maturity will take into account any call, put, prepayment or other features that may impact maturity. All investments mature no later than necessary to provide moneys when needed for payments to be made from such funds.

- Revenue Funds - 1 year (by Bond Resolution)
- Construction Funds - 5 years (by Authority Policy)
- Maintenance Reserve Fund - 2 years (by Bond Resolution)
- Special Projects Reserve Fund - 2 years (by Bond Resolution)
- General Reserve Fund - 3 years (by Bond Resolution)
- Debt Service Fund - 1 year (by Authority Policy)
- Charges Fund - 3 months (by Authority Policy)
- Debt Reserve Fund - 5 years (by Bond Resolution)

The Authority's Investment Policy limits the maturity of commercial paper investments to 270 days. There is no other specific maturity limit for other types of Investment Securities; however the maturities are limited by Bond Resolution Fund as noted above.

Investments are generally purchased with the intent of holding to maturity, but the Chief Financial Officer, or designee, has the flexibility to restructure and rebalance portfolio holdings to manage risk and take advantage of market opportunities.

As of December 31, 2019 and 2018 the Authority had the following investments by their maturity date range:

(Dollars shown in thousands)

	December 31, 2019		
		Investment maturities	
Investment type	**Fair value**	**1 year**	**1–5 years**
Investments:			
Certificates of Deposit	$ 155,990	155,990	—
Commercial Paper	263,855	263,855	—
Federal Agency Notes	470,482	470,482	—
U.S. Treasury Bills	55,654	55,654	—
Total investments	945,981	945,981	—
Restricted investments held by trustee:			
Certificates of Deposit	428,772	344,818	83,954
Commercial Paper	16,720	16,720	—
Federal Agency Notes	175,068	43,468	131,600
U.S. Treasury Bills	492,236	492,236	—
Total restricted investments held by trustee	1,112,796	897,242	215,554
Restricted investments held by Authority:			
Certificates of Deposit	149,920	149,920	—
Commercial Paper	129,186	129,186	—
Federal Agency Notes	149,542	149,542	—
State of New Jersey Cash Management Fund	25,206	25,206	—
U.S. Treasury Notes	25,085	25,085	—
Total restricted investments held by Authority	478,939	478,939	—
Total investments	$ 2,537,716	2,322,162	215,554

Note: Table includes $14,599 of accrued interest, and Federal agency notes include $36 in unrealized loss for the year ended December 31, 2019.

(1) Included in investments above at December 31, 2019 is $10,500 the Authority has designated as reserved for national toll interoperability requirements under Federal Law P.L. 112-131, the Moving Ahead for Progress in the 21st Century Act (Map-21).

(2) The Authority does not have any investments with maturities greater than 5 years.

(Dollars shown in thousands)

Investment type	December 31, 2018 Fair value	Investment maturities Less than 1 year	1–5 years
Investments:			
Certificates of Deposit	$ 117,435	117,435	—
Commercial Paper	315,172	315,172	—
Federal Agency Notes	272,938	272,938	—
U.S. Treasury Bills	193,635	193,635	—
Total investments	899,180	899,180	—
Restricted investments held by trustee:			
Certificates of Deposit	350,870	87,569	263,301
Commercial Paper	151,075	151,075	—
Federal Agency Notes	494,174	395,080	99,094
U.S. Treasury Bills	83,039	83,039	—
Total restricted investments held by trustee	1,079,158	716,763	362,395
Restricted investments held by Authority:			
Commercial Paper	44,843	44,843	—
Federal Agency Notes	74,905	74,905	—
State of New Jersey Cash Management Fund	49,854	49,854	—
U.S. Treasury Bills	24,997	24,997	—
Total restricted investments held by Authority	194,599	194,599	—
Total investments	$2,172,937	1,810,542	362,395

Note: Table includes $10,938 of accrued interest, and Federal agency notes include $263 in unrealized loss for the year ended December 31, 2018.

(1) Included in investments above at December 31, 2018 is $10,747 the Authority has designated as reserved for national toll interoperability requirements under Federal Law P.L. 112-131, the Moving Ahead for Progress in the 21st Century Act (Map-21) ($10,500), and emergency maintenance work ($247).

(2) The Authority does not have any investments with maturities greater than 5 years.

The Authority's investment portfolio is subject to the following risks:

Interest rate risk: Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. As a means of limiting its exposure to fair value losses arising from rising interest rates, the Authority's Investment.

Policy sets maximum maturity limits for investments and requires that investment maturities are matched to the Authority's liquidity needs. At the time of purchase, the maturity of each security in the portfolio may not exceed the following maximum time frames for the respective fund in which the investment is made in accordance with the Bond Resolution or Authority policy.

Credit risk: Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Authority's investment guidelines and policies are designed to protect principal by limiting credit risk. This is accomplished through ratings, and collateral requirements that vary according to the type of investment as defined in the Authority's Investment Policy. The Authority's Investment Policy states that all investments ratings shall be based on security ratings at the time of purchase. In the event of a downgrade in rating, the Chief Financial Officer, or designee, will determine whether to sell or hold the investment. The Authority will not make an investment in an issuer who has a negative outlook associated with their credit rating, except for US Treasury or Federal Agencies. The portfolio's average credit quality should be rated Aa3/AA- or better by Moody's/S&P. In addition, certain investment securities require collateral posting requirements as outlined in note 2(d).

(Dollars shown in thousands)

As of December 31, 2019 and 2018, the Authority's investment quality ratings as rated by Standard & Poor's and Moody's were as follows:

December 31, 2019
Standard and Poor's/Moody's ratings

	****A-1/P-1**	**A-1+/P-1**	**AA+/Aaa**	**Aa-/Aa1**	**Totals**
Certificate of Deposit	$ 27,519	674,228	—	32,935	734,682
Commercial Paper	—	409,761	—	—	409,761
Federal Agency Notes	—	663,492	131,600	—	795,092
U.S. Treasury Bills	—	547,890	—	—	547,890
U.S. Treasury Notes	—	25,085	—	—	25,085
	$ 27,519	2,320,456	131,600	32,935	2,512,510

December 31, 2018
Standard and Poor's/Moody's ratings

	****A-1/P-1**	**A-1+/P-1**	**AA+/Aaa**	**Aa-/Aa1**	**Totals**
Certificate of Deposit	$ 27,519	205,004	—	235,782	468,305
Commercial Paper	—	511,090	—	—	511,090
Federal Agency Notes	—	742,923	99,094	—	842,017
U.S. Treasury Bills	—	301,671	—	—	301,671
	$ 27,519	1,760,688	99,094	235,782	2,123,083

**At the time of the purchase, Wells Fargo (the issuer) was rated A-1+/P-1 in accordance with the Authority's Bond Resolution. In February 2018, the Issuer was downgraded to A-1/P-1. The investment for this Issuer matures on November 16, 2020.

Custodial credit risk: For investments, custodial credit risk is the risk that in the event of the failure of the counterparty, the Authority will not be able to recover the value of its investments that are in the possession of the outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the Authority, and are held by either the counterparty or the counterparty's trust department or agent but not in the name of the Authority.

The Authority manages custodial credit risk by limiting its investments to highly rated institutions, having its investments registered in its name, and requiring high quality collateral be held by the counterparty in the name of the Authority for certain investment securities. As of December 31, 2019 and 2018, the Authority was not exposed to custodial credit risk on its investment securities.

Concentration of credit risk: Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer that exceeds 5% or more of its total investments. Concentrations limits are established in the Authority's Investment Policy as follows:

There are no limitations on investments carrying the full faith and credit of the United States Government, including repurchase agreements collateralized by such investments;

a. Investments in any single Federal Agency not carrying the full faith and credit of the United States Government are limited to 40% of the portfolio;

b. Investments in Certificates of Deposit are limited to 30% of the portfolio;

c. Investments made in Commercial Paper are limited to 30% of the total portfolio;

d. Investments in Municipal securities are limited to 30% of the total portfolio;

e. Investments in any one single issuer (excluding US Treasury and Federal Agency securities) are limited to 5% of the portfolio.

The Investment Policy authorizes the management to deviate from the policy if it is in the general best interest of the Authority. At December 31, 2019, the Authority exceeded its concentration limits for a single issuer with U.S. Bank and DNB Bank ASA as discussed further below. The par amount of investments with U.S. Bank has decreased to $236,000 in 2019, 9.3% of the portfolio, from $247,000 in 2018, 11.4% of the portfolio. The investments within the U.S. Bank portfolio are long-term in nature and are slowly being decreased as they mature to ensure that the Authority does not exceed its concentration limits for a single issuer. DNB Nor Bank ASA holdings increased in 2019 because the bank offered the best rates and available securities when the Authority had available funds to invest. At December 31, 2018, the Authority exceeded its concentration limits for a single issuer with U.S. Bank, National Securities Clearing Corporation, and Nordea Bank as discuses further below. While the par amount of the investments with U.S. Bank has decreased to $247,000 in 2018 from $265,000 in 2017, U.S. Bank's holdings as a percentage of the total portfolio have increased due to the drop in total portfolio value. The investments within U.S. Bank portfolio are long-term in nature and are slowly being decreased as they mature to ensure that the Authority does not exceed its concentration limits for a single issuer. National Securities Clearing Corporation holdings increased in 2018 due to investments made under a $150,000 notional value forward delivery agreement between the Authority and Deutsche Bank in which Deutsche Bank delivers investment securities to the Debt Reserve Fund which are held in the Authority's name. Deutsche Bank invested $100,000 in National Security Clearing Corporation which exceeded the concentration limits for a single issuer. The concentration limit was exceeded for Nordea Bank because the bank offered the best rates and available securities when the Authority had available funds to invest. More than 5% of the Authority's investments are concentrated in the following issuers as of December 31, 2019 and 2018, respectively:

(Dollars shown in thousands)

	December 31	
Issuer	**2019**	**2018**
DNB Bank ASA	5.1 %	N/A
Federal Home Loan Bank	23.0	26.5 %
Federal Home Loan Mortgage Corp.	N/A	7.4
National Securities Clearing Corp.	N/A	7.2
Nordea Bank	N/A	5.1
U.S. Bank	9.3	11.4
U.S. Treasury	22.6	13.9

(Dollars shown in thousands)

(4) Capital Assets

Capital assets consist of land, construction in progress, infrastructure, buildings, and equipment. Infrastructure assets are typically items that are immovable, such as highways and bridges. These assets are capitalized as per the Authority's capitalization policy and depreciated as per the depreciation policy. The schedule below shows a summary of changes in the capital assets as of December 31, 2019 and 2018 is as follows:

Classification	December 31, 2018	Additions	Retirements/ transfers	December 31, 2019
Non-depreciable capital assets:				
Land	$ 833,761	—	—	833,761
Construction In Progress	535,904	515,550	(478,958)	572,496
Total non-depreciable capital assets	1,369,665	515,550	(478,958)	1,406,257
Depreciable capital assets:				
Roadways	6,382,453	110,958	—	6,493,411
Bridges	5,712,903	113,712	—	5,826,615
Buildings and improvements	936,696	232,119	—	1,168,815
Equipment	1,655,108	22,171	(26,431)	1,650,848
Total depreciable capital assets	14,687,160	478,960	(26,431)	15,139,689
Total capital assets	16,056,825	994,510	(505,389)	16,545,946
Less accumulated depreciation:				
Roadways	(1,739,712)	(171,740)	—	(1,911,452)
Bridges	(1,364,552)	(116,483)	—	(1,481,035)
Buildings and improvements	(298,792)	(19,435)	—	(318,227)
Equipment	(693,487)	(73,731)	26,431	(740,787)
Total accumulated depreciation	(4,096,543)	(381,389)	26,431	(4,451,501)
Capital assets, net	$ 11,960,282	613,121	(478,958)	12,094,445

(Dollars shown in thousands)

Classification	December 31, 2017	Additions	Retirements/ transfers	December 31, 2018
Non-depreciable capital assets:				
Land	$ 832,460	1,301	—	833,761
Construction In Progress	1,561,960	445,129	(1,471,185)	535,904
Total nondepreciable capital assets	2,394,420	446,430	(1,471,185)	1,369,665
Depreciable capital assets:				
Roadways	5,753,781	629,449	(777)	6,382,453
Bridges	5,089,621	623,282	—	5,712,903
Buildings	841,248	95,581	(133)	936,696
Equipment	1,532,269	122,873	(34)	1,655,108
Total depreciable capital assets	13,216,919	1,471,185	(944)	14,687,160
Total capital assets	15,611,339	1,917,615	(1,472,129)	16,056,825
Less accumulated depreciation:				
Roadways	(1,610,549)	(129,485)	322	(1,739,712)
Bridges	(1,259,794)	(104,758)	—	(1,364,552)
Buildings	(281,760)	(17,042)	10	(298,792)
Equipment	(618,170)	(75,331)	14	(693,487)
Total accumulated depreciation	(3,770,273)	(326,616)	346	(4,096,543)
Capital assets, net	$ 11,841,066	1,590,999	(1,471,783)	11,960,282

(Dollars shown in thousands)

(5) Accounts Payable and Accrued Expenses

Accounts payable consist of amounts owed to vendors for goods and services related to the operation and maintenance of the Turnpike System, and amounts owed to vendors related to materials and services for capital projects. Accounts payable – E-ZPass Group Agencies includes tolls and fees payable to tolling agencies utilizing E-ZPass as a payment method. Accounts payable–pension includes the Authority's annual State of New Jersey Public Employees' Retirement System (PERS) payment invoiced to the State of New Jersey, Division of Pension and Benefits, in October 2018 and 2019 and is payable on April 1, 2019 and April 1, 2020, respectively. Accrued expenses include accrued salaries and health benefits earned by employees, while other accrued expenses primarily include the inventory receipt accruals.

A summary of the accounts payable and accrued expenses as of December 31, 2019 and 2018 is as follows:

	December 31	
	2019	**2018**
Vendors – operations and maintenance	55,069	38,475
Vendors – capital expenditures	86,220	72,001
Accounts payable – E-Z Pass Group Agencies	56,790	54,366
Accounts payable – pension	17,860	18,544
Accrued salaries and benefits	10,934	10,262
Accrued expenses – other	2,311	3,240
Total	$ 229,184	196,888

(Dollars shown in thousands)

(6) Bond Indebtedness

As of December 31, 2019 and 2018, bond indebtedness consisted of the following:

	Interest rate	Maturity	December 31 2019	December 31 2018
Turnpike revenue bonds:				
Series 2004C-2, not subject to optional redemption prior to maturity	5.50%	Jan. 1, 2025	$ 132,850	132,850
Series 2005A, not subject to optional redemption prior to maturity	5.25%	Jan. 1, 2026 through Jan. 1, 2030	173,650	173,650
Series 2005B (Federally Taxable), not subject to optional redemption prior to maturity	4.81%	Jan. 1, 2019	—	32,500
Series 2005D1-D4, (Federally Taxable Converting to Tax-Exempt) convertible to tax-exempt on Jan. 1, 2009 through Jan. 1, 2013, not subject to optional redemption	5.25%	Jan. 1, 2026	208,735	208,735
Series 2009F, Term Bond, Federally redemption prior to maturity at make-whole redemption price, subject to mandatory redemption on Jan. 1, 2037 through Jan. 1, 2040	7.41%	Jan. 1, 2040	1,375,000	1,375,000
Series 2009H, subject to optional redemption prior to maturity on/after Jan. 1, 2019 in whole or part at redemption price plus 100% accrued interest	5.00%	Jan. 1, 2020	36,695	36,695
Series 2010A, Federally Taxable – Issuer Subsidy Build America Bonds, subject to optional redemption prior to maturity at make-whole redemption price. Subject to mandatory redemption on Jan. 1, 2035 through Jan. 1, 2041	7.10%	Jan. 1, 2041	1,850,000	1,850,000
Series 2012A, subject to optional redemption prior to maturity on/after Jan. 1, 2022 in whole or in part	3.63% to 4.00%	Jan. 1, 2031 & Jan. 1, 2033	15,000	15,000
Series 2012B, not subject to optional redemption prior to Jan. 1, 2023	5.00%	Jan. 1, 2019 through Jan. 1, 2023	170,815	329,250
Subject to optional redemption in whole or in part on any date on/after Jan. 1, 2023	3.50% to 5.00%	Jan. 1, 2024 through Jan. 1, 2030	475,185	475,185
Series 2013A, not subject to optional redemption prior to Jan. 1, 2023	3.00% to 5.00%	Jan. 1, 2017 through Jan. 1, 2023	20,835	26,455
Subject to optional redemption on/after Jul. 1, 2022	3.00% to 5.00%	Jan. 1, 2024 through Jan. 1, 2043	285,645	285,645

(Dollars shown in thousands)

	Interest rate	Maturity	December 31 2019	December 31 2018
Series 2013F, subject to optional redemption prior to maturity on/after Jan. 1, 2023 in whole or part	3.00% to 5.00%	Jan. 1, 2026 through Jan. 1, 2035	90,880	90,880
Series 2014A, subject to optional redemption prior to maturity on/after July 1, 2024 in whole or part	4.00% to 5.00%	Jan. 1, 2027 through Jan. 1, 2035	1,000,000	1,000,000
Series 2014C, not subject to optional redemption prior to maturity	5.00%	Jan. 1, 2019 through Jan. 1, 2025	198,730	201,860
*Series 2015A, subject to optional redemption in whole or part, on/after Jan. 1, 2016	Variable,1.92% at Dec. 31, 2019, 2.35% at Dec. 31, 2018	Jan. 1, 2024	92,500	92,500
*Series 2015B, subject to optional redemption in whole or part, on/after Feb. 1, 2017, mandatory tender Jan. 1, 2020	Variable,1.73% at Dec. 31, 2019, 2.21% at Dec. 31, 2018	Jan. 1, 2024	50,000	50,000
*Series 2015C, subject to optional redemption in whole or part, on/after Jan. 1, 2017	Variable, 1.84% at Dec. 31, 2019, 2.27% at Dec. 31, 2018	Jan. 1, 2024	43,750	43,750
*Series 2015D, subject to optional redemption in whole or part, on/after Jan. 1, 2017	Variable, 1.84% at Dec. 31, 2019, 2.27% at Dec. 31, 2018	Jan. 1, 2024	43,750	43,750
Series 2015E, subject to optional redemption prior to maturity on/after Jan. 1, 2025 in whole or part	3.375% to 5.00%	Jan. 1, 2031 through Jan. 1, 2045	750,000	750,000
*Series 2015F, subject to optional redemption in whole or part, on/after Jan. 1, 2017	Variable, 1.95% at Dec. 31, 2019, 2.48% at Dec. 31, 2018	Jan. 1, 2022	72,350	72,350
*Series 2015G, subject to optional redemption in whole or part, on/after Jan. 1, 2017	Variable, 1.86% at Dec. 31, 2019, 2.35% at Dec. 31, 2018	Jan. 1, 2024	25,000	25,000
*Series 2015H, subject to optional redemption in whole or part, on/after Jan. 1, 2017	Variable, 1.88% at Dec. 31, 2019, 2.31% at Dec. 31, 2018	Jan. 1, 2022	48,235	48,235

(Dollars shown in thousands)

	Interest rate	Maturity	December 31 2019	December 31 2018
Series 2016A, subject to optional redemption in whole or part, on/after Jan. 1, 2026	3.13% to 5.00%	Jan. 1, 2031 through Jan. 1, 2035	149,995	149,995
*Series 2016B, subject to optional redemption in whole or part, on/after Jan. 1, 2018	Variable,1.89% at Dec. 31, 2019, 2.38% at Dec. 31, 2018	Jan. 1, 2023	75,025	75,025
*Series 2016C, subject to optional redemption in whole or part, on/after Jan. 1, 2018	Variable,1.89% at Dec. 31, 2019, 2.38% at Dec. 31, 2018	Jan. 1, 2023	50,015	50,015
*Series 2016D, subject to optional redemption in whole or part, on/after Jan. 1, 2018	Variable,1.90% at Dec. 31, 2019, 2.39% at Dec. 31, 2018	Jan. 1, 2024	50,000	50,000
Series 2017A, subject to optional redemption prior to maturity on/after Jan. 1, 2027 in whole or part	3.50% to 5.00%	Jan. 1, 2027 through Jan. 1, 2036	600,000	600,000
Series 2017B, subject to optional redemption in whole or part, on/after Jan. 1, 2028	4.00% to 5.00%	Jan. 1, 2025 through Jan. 1, 2040	646,765	646,765
Series 2017 C1-6, not subject to redemption prior to maturity	Variable	Jan. 1, 2021 through Jan. 1, 2024	134,875	134,875
Subject to optional redemption prior on/after Jul. 1, 2020 in whole or part mandatory tender Jan. 1, 2021	(1.54% to 1.95%, at Dec. 31, 2019);	Jan. 1, 2028	150,000	150,000
Subject to optional redemption prior on/after Jul. 1, 2022 in whole or part mandatory tender Jan. 1, 2023	(1.98% to 2.39% at Dec. 31, 2018)	Jan. 1, 2030	115,125	115,125
Series 2017D, not subject to redemption prior to maturity	Variable, (1.68% to 1.90% at Dec. 31, 2019); (2.12% to 2.34% at Dec. 31, 2018)	Jan. 1, 2022 through Jan. 1, 2024	179,375	179,375
Series 2017E, subject to optional redemption in whole or part, on/after Jan. 1, 2028	5.00%	Jan. 1, 2024 through Jan. 1, 2033	359,680	359,680
Series 2017F, subject to optional redemption in whole or part, on any date	2.14% to 3.729%	Jan. 1, 2019 through Jan. 1, 2036	166,505	167,845
Series 2017G, subject to optional redemption in whole or part, on/after Jan. 1, 2028	3.25% to 5.00%	Jan. 1, 2033 through Jan. 1, 2043	726,640	726,640
Series 2019A, subject to optional redemption in whole or part, on/after Jan. 1, 2029	4.00% to 5.00%	Jan. 1, 2048	449,110	—
			11,012,715	10,764,630
Bond premium - Net			545,697	572,907
Bond discount - Net			(5,306)	(5,649)
			540,391	567,258
			11,553,106	11,331,888

Note:

*Denotes a direct placement bond

(a) Bond Insurance

For the Series 2004C and Series 2005A-D Bonds, principal and interest payments are insured on the stated maturity and interest payment dates through municipal bond insurance which totaled $515,235 as of December 31, 2019 and 2018.

To meet the Debt Reserve Requirement under the Bond Resolution, the Authority must deposit cash and investments in the Debt Reserve Fund. In lieu of cash and investments, the Authority may maintain a surety bond or insurance policy payable to the Trustee. The Debt Reserve Requirement of $589,691 as of December 31, 2019 was met through investments in the Debt Reserve Fund with a fair market value of $601,259. In addition, there were insurance policies payable to the Trustee with a payment limit of $178,333. The Debt Reserve Requirement of $583,155 as of December 31, 2018 was met through investments in the Debt Reserve Fund with a fair market value of $601,039. In addition, there were insurance policies payable to the Trustee with a payment limit of $178,333. Although the insurance policies are still in effect at December 31, 2019, according to the terms of the insurance policies, cash and investments in the Debt Reserve Fund must be drawn upon first to satisfy any payments required from the Debt Reserve Fund. As of December 31, 2019 and December 31, 2018, the fair market value of the cash and investments in the Debt Reserve Fund meets the Debt Reserve Requirement in its entirety.

(b) Interest Payments - Fixed Rate Debt

Interest payments on all fixed rate debt are payable semi-annually on July 1 and January 1.

(c) Variable Rate Debt

Interest rates on variable rate debt are reset monthly except for Series 2015F, Series 2015G, Series 2016B, Series 2016C, and Series 2016D bonds, which are reset weekly. Interest is paid monthly.

(d) Build America Bonds

The Series 2009F Bonds and the Series 2010A Bonds are designated as Federally Taxable, Issuer Subsidy Build America Bonds for purposes of the American Recovery and Reinvestment Act of 2009. The Authority receives a cash subsidy from the United States Treasury originally equal to 35% of the interest payable on the Bonds. The Budget Control Act of 2011 reduced the amount of the subsidy paid by the Federal Government through automatic federal spending cuts commonly known as sequestration. The payment to the Authority received for the July 1, 2019 interest payment was reduced by 6.2%, and the payment for January 1, 2020 interest payment will be reduced by 5.9%. The Internal Revenue Service has reported that the Authority's payment due on July 1, 2020 will also have a 5.9% reduction. There can be no certainty the Federal Government will not make further cuts to the program. These cash payments constitute pledged revenues under the Authority's bond resolution. The Series 2009F Bonds and the Series 2010A Bonds are subject to redemption prior to maturity at the make-whole redemption price which is equal to the greater of (i) 100% of the principal amount of the Bonds to be redeemed plus accrued and unpaid interest and (ii) the sum of the present value of the remaining scheduled payments of principal and interest, discounted to the date on which the Bonds are to be redeemed on a semi-annual basis, assuming a 360 day year consisting of twelve 30 day months, at the adjusted Treasury Rate plus 50 basis points for the Series 2009F Bonds and 40 basis points for the Series 2010A Bonds, plus accrued and unpaid interest. The Bonds are also subject to redemption prior to their maturity at the option of the Authority upon a material adverse change to Section 54AA or 6431 of the Internal Revenue Code of 1986 pursuant to which the Authority's 35% cash subsidy payment is reduced or eliminated. In this case the redemption price is equal to the greater of (i) 100% of principal amount of the Bonds to be redeemed plus accrued and unpaid interest and (ii) the sum of the present value of the remaining scheduled payments of principal and interest, discounted to the date on which the Bonds are to be redeemed on a semi-annual basis, assuming a 360 day year consisting of twelve 30 day months, at the adjusted Treasury Rate plus 100 basis points, plus accrued and unpaid interest. The Series 2009F Bonds are subject to mandatory redemption on January 1, 2037 through January 1, 2040 at 100% of the principal amount plus accrued interest. The Series 2010A Bonds are subject to mandatory redemption on January 1, 2035 through January 1, 2041 at 100% of the principal amount plus accrued interest.

(Dollars shown in thousands)

(e) Floating Rate Bonds

The following tables summarizes the terms of the Authority's direct placement Floating Rate Bonds and publicly offered Floating Rate Bonds as of December 31, 2019:

Direct Placement Floating Rate Bonds

Series of bonds	Tax exempt or federally taxable	Final maturity date	Par amount	Floating rate	Interest rate reset	Mandatory tender date
2015A	Tax-Exempt	1/1/2024	$ 92,500	67% 1 month LIBOR + 78 bp	Monthly	—
2015B	Tax-Exempt	1/1/2024	50,000	75% 1 month LIBOR + 45 bp	Monthly	1/1/2020
2015C	Tax-Exempt	1/1/2024	43,750	67% 1 month LIBOR + 70 bp	Monthly	—
2015D	Tax-Exempt	1/1/2024	43,750	67% 1 month LIBOR + 70 bp	Monthly	—
2015F	Tax-Exempt	1/1/2022	72,350	75% 1 month LIBOR + 59.5 bp	Weekly	—
2015G	Tax-Exempt	1/1/2024	25,000	69.75% 1 month LIBOR + 60 bp	Weekly	—
2015H	Tax-Exempt	1/1/2022	48,235	67% 1 month LIBOR + 74 bp	Monthly	—
2016B	Tax-Exempt	1/1/2023	75,025	70% 1 month LIBOR + 63 bp	Weekly	—
2016C	Tax-Exempt	1/1/2023	50,015	70% 1 month LIBOR + 63 bp	Weekly	—
2016D	Tax-Exempt	1/1/2024	50,000	70% 1 month LIBOR + 64 bp	Weekly	—

Publicly Offered Floating Rate Bonds

Series of bonds	Tax exempt or federally taxable	Final maturity date	Par amount	Floating rate	Interest rate reset	Mandatory tender date
2017C1	Tax-Exempt	1/1/2021	31,050	70% 1 month LIBOR + 34 bp	Monthly	—
2017C2	Tax-Exempt	1/1/2022	32,775	70% 1 month LIBOR + 48 bp	Monthly	—
2017C3	Tax-Exempt	1/1/2023	34,575	70% 1 month LIBOR + 60 bp	Monthly	—
2017C4	Tax-Exempt	1/1/2024	36,475	70% 1 month LIBOR + 70 bp	Monthly	—
2017C5	Tax-Exempt	1/1/2028	150,000	70% 1 month LIBOR + 46 bp	Monthly	1/1/2021
2017C6	Tax-Exempt	1/1/2030	115,125	70% 1 month LIBOR + 75 bp	Monthly	1/1/2023
2017D1	Tax-Exempt	1/1/2024	129,375	70% 1 month LIBOR + 70 bp	Monthly	—
2017D2	Tax-Exempt	1/1/2022	16,075	70% 1 month LIBOR + 48 bp	Monthly	—
2017D3	Tax-Exempt	1/1/2023	16,675	70% 1 month LIBOR + 60 bp	Monthly	—
2017D4	Tax-Exempt	1/1/2024	17,250	70% 1 month LIBOR + 70 bp	Monthly	—

Pursuant to the terms of the direct placement Floating Rate Bonds, in addition to being subject to mandatory tender for purchase on the Mandatory Tender Date or maturity date set forth in the chart above, upon the occurrence of certain enumerated extraordinary mandatory purchase events, the respective Series of Bonds may also be subject to mandatory tender for purchase at the option of the applicable bank that is the holder of such Series of Bonds prior to the occurrence of such Mandatory Tender Date. In the event that the Authority cannot pay the purchase price for all or a portion of such Series of Bonds on the Mandatory Tender Date or any such extraordinary mandatory purchase date, (i) 50% of the principal amount of any unpurchased Bonds will be subject to mandatory redemption on the date that is one year after such Mandatory Tender Date or extraordinary mandatory purchase date, at a Redemption Price equal to 100% of the principal amount of such Bonds to be redeemed plus accrued interest to the redemption date, and (ii) the entire remaining aggregate principal amount of such unpurchased Bonds will be subject to mandatory redemption on the date that is two years after such Mandatory Tender Date or extraordinary mandatory purchase date, at a Redemption Price equal to 100% of the principal amount of such Bonds to be redeemed plus accrued interest to the redemption date.The publicly offered Floating Rate Bonds are subject to mandatory tender for purchase on the Mandatory Tender Date or maturity date set forth in the chart above. The publicly offered Floating Rate Bonds are not subject or certain extraordinary mandatory tender events.

(Dollars shown in thousands)

(f) Security

All bonds outstanding under the Bond Resolution, together with amounts owed under the interest rate swap agreements, are secured on a parity by a pledge of net revenues of the Authority senior in priority to any other Authority obligations secured by such net revenues.

(g) Future Payments of Debt Service

The following table sets forth as of December 31, 2019, payments of principal (through sinking fund installments) and interest to be made to the Debt Service Fund from the Revenue Fund on all outstanding bonds of the Authority for the next five years and thereafter. Interest on variable-rate debt and interest rate swaps in the following table is based upon the variable-rates as of December 31, 2019.

	Bonds						
	Publicly Offered			Direct Placement			
	Principal	Interest	Interest rate swaps, net	Principal	Interest	Interest rate swaps, net	Total
December 31:							
2020	$ 155,680	548,235	26,307	72,525	—	22,235	824,982
2021	151,495	542,543	26,307	97,900	—	19,451	837,696
2022	117,100	537,780	24,906	161,600	—	15,693	857,079
2023	121,000	534,578	22,766	168,050	—	9,209	855,603
2024	253,800	531,298	20,457	50,550	—	2,423	858,528
2025-2029	1,956,520	2,471,072	44,187	—	—	—	4,471,779
2030-2034	2,380,970	1,991,982	2,477	—	—	—	4,375,429
2035-2039	2,855,775	1,309,091	—	—	—	—	4,164,866
2040-2044	1,941,540	359,643	—	—	—	—	2,301,183
2045-2049	528,210	61,877	—	—	—	—	590,087
	$ 10,462,090	8,888,099	167,407	550,625	—	69,011	20,137,232

Upon the occurrence of certain events of default, including nonpayment of interest or principal on the Bonds, noncompliance with financial and other covenants, or a voluntary or involuntary bankruptcy of the Authority, which have not been remedied, the Trustee, or the holders of not less than 25% of the principal amount of Bonds outstanding, have the right to declare the principal of and interest on all the outstanding Bonds due and payable immediately. In addition, if an event of default has not been remedied, the Trustee on its own may, and upon request of the holders of not less than 10% of the principal amount of Bonds outstanding shall, proceed to protect and enforce the rights of the bondholders by filing suit against the Authority.

(Dollars shown in thousands)

These rights of the Bondholders include the ability to require the Authority to comply with its covenant relating to fixing the tolls and charges for use of the Turnpike System and to require that all pledged revenues be paid to the Trustee and applied as required by the Bond Resolution.

(i) Interest Expense

Interest expense was comprised of the following:

	Year ended December 31	
	2019	**2018**
Turnpike Revenue Bonds, Series 2004C	7,307	7,307
Turnpike Revenue Bonds, Series 2005A	9,117	9,117
Turnpike Revenue Bonds, Series 2005B	—	1,563
Turnpike Revenue Bonds, Series 2005D	10,959	10,959
Turnpike Revenue Bonds, Series 2009F	101,943	101,943
Turnpike Revenue Bonds, Series 2009H	1,835	1,835
Turnpike Revenue Bonds, Series 2010A	131,387	131,387
Turnpike Revenue Bonds, Series 2012A	581	581
Turnpike Revenue Bonds, Series 2012B	31,850	39,772
Turnpike Revenue Bonds, Series 2013A	13,419	13,673
Turnpike Revenue Bonds, Series 2013F	4,357	4,357
Turnpike Revenue Bonds, Series 2014A	48,890	48,890
Turnpike Revenue Bonds, Series 2014C	9,937	10,093
Turnpike Revenue Bonds, Series 2015A	3,387	3,378
Turnpike Revenue Bonds, Series 2015B	1,896	1,893
Turnpike Revenue Bonds, Series 2015C	1,728	1,727
Turnpike Revenue Bonds, Series 2015D	1,730	1,729
Turnpike Revenue Bonds, Series 2015E	36,413	36,413
Turnpike Revenue Bonds, Series 2015F	2,956	2,950
Turnpike Revenue Bonds, Series 2015G	993	992
Turnpike Revenue Bonds, Series 2015H	1,951	1,951
Turnpike Revenue Bonds, Series 2016A	7,312	7,312
Turnpike Revenue Bonds, Series 2016B	2,975	2,981
Turnpike Revenue Bonds, Series 2016C	2,007	2,000
Turnpike Revenue Bonds, Series 2016D	2,023	2,021
Turnpike Revenue Bonds, Series 2017A	29,409	29,409
Turnpike Revenue Bonds, Series 2017B	31,304	31,304
Turnpike Revenue Bonds, Series 2017C	18,878	18,887
Turnpike Revenue Bonds, Series 2017D	7,315	7,237
Turnpike Revenue Bonds, Series 2017E	17,984	17,984
Turnpike Revenue Bonds, Series 2017F	5,343	5,372
Turnpike Revenue Bonds, Series 2017G	30,480	30,479
Turnpike Revenue Bonds, Series 2019A	18,410	—
	596,076	587,496
Less amortization of bond premium and discount	(34,103)	(38,051)
Less GASB Statement No. 53 interest expense adjustment (1)	(13,547)	(24,649)
Net interest expense	$ 548,426	524,796

(1) For the Series 2015A-D, 2015F, 2016B, 2017C1-6 and 2017D Bonds

(j) Defeased Bonds

As of December 31, 2019 and 2018, the Authority has approximately $1,377,000 and $1,964,000, respectively, of bonds outstanding which have been previously defeased in substance and are secured by investments held by various escrow agents. The escrow accounts are invested in obligations of U.S. government agencies and are not controlled by the Authority. The bonds are considered extinguished and accordingly, the assets and obligations are not reflected on the financial statements of the Authority.

(7) Derivative Instruments

The fair value balances and notional amounts of derivative instruments outstanding as of December 31, 2019 and 2018, classified by type, and the changes in fair value of such derivative instruments for the year then ended as reported in the accompanying financial statements are as follows:

	Changes in fair value for year ended December 31, 2019		Fair value as of December 31, 2019		
	Classification	**Amount**	**Classification**	**Amount**	**Notional**
Cash flow hedges:					
Pay-fixed, receive-variable interest rate swaps [1]	Deferred Outflow	$ (22,829)	Interest rate swap liabilities	$ (29,567)	1,125,000

	Changes in fair value for year ended December 31, 2018		Fair value as of December 31, 2018		
	Classification	**Amount**	**Classification**	**Amount**	**Notional**
Cash flow hedges:					
Pay-fixed, receive-variable interest rate swaps [1]	Deferred Inflow	$ 14,176	Interest rate swap liabilities	$ (6,738)	1,125,000

(1) Includes fair value of at-the-market interest rate swaps from hybrid instruments

The fair values of the interest rate swaps were estimated using the zero-coupon method. This method calculates the future net settlement payments required by the swap, assuming that the current forward rates implied by the yield curve correctly anticipate future spot interest rates. These payments are then discounted using the spot rates implied by the current yield curve for hypothetical zero-coupon bonds due on the date of each future net settlement on the swaps.

Objective and Terms of Derivative Instruments

The following tables display the objective and terms of the Authority's derivative instruments outstanding as of December 31, 2019 and 2018, along with the credit rating of the associated counterparty (amounts in thousands):

(Dollars shown in thousands)

Type	Objective	Notional amount	Effective date	Maturity date	Terms	Counterparty credit rating
	December 31, 2019					
Hedging derivative instruments:						
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015A bonds	$ 87,500	Apr. 1, 2016	Jan. 1, 2024	Pay 2.98%, receive 67% of 1 month USD-LIBOR-BBA	A1/AA-/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015B bonds	50,000	Feb. 11, 2009	Jan. 1, 2024	Pay 3.331%, receive 75% of 1 month USD-LIBOR-BBA	A2/A/A+
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015C bonds	43,750	Feb. 11, 2009	Jan. 1, 2024	Pay 3.2488%, receive 67% of 1 month USD-LIBOR-BBA	A2/A/A+
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015D bonds	43,750	Feb. 11, 2009	Jan. 1, 2024	Pay 3.2525%, receive 67% of 1 month USD-LIBOR-BBA	A2/A/A+
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015F bonds	72,350	May. 21, 2013	Jan. 1, 2022	Pay 3.4486%, receive 73.2% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015G bonds	25,000	Sep. 1, 2015	Jan. 1, 2024	Pay 3.35%, receive 67% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015H bonds	48,235	Sep. 1, 2015	Jan. 1, 2022	Pay 3.305%, receive 67% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2016B bonds	75,025	May. 21, 2013	Jan. 1, 2023	Pay 3.4486%, receive 73.2% of 1 month of USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2016C bonds	50,015	Sep. 1, 2015	Jan. 1, 2023	Pay 3.4486%, receive 63% of 1 month plus 20bp USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2016D bonds	50,000	Sep. 1, 2015	Jan. 1, 2024	Pay 3.35%, receive 67% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017C bonds	240,000	Sep. 1, 2015	Jan. 1, 2030	Pay 4.172%, receive 70% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017C bonds	160,000	May. 21, 2013	Jan. 1, 2030	Pay 4.172%, receive 70% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017D1 bonds	77,625	May. 21, 2013	Jan. 1, 2024	Pay 3.4486%, receive 73.2% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017D1 bonds	51,750	Sep. 1, 2015	Jan. 1, 2024	Pay 3.4486%, receive 63% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017D2-4 bonds	50,000	Aug. 4, 2014	Jan. 1, 2024	Pay 3.35%, receive 67% of 1 month USD-LIBOR-BBA	Aa3/A+/A+

(Dollars shown in thousands)

	December 31, 2018					
Type	**Objective**	**Notional amount**	**Effective date**	**Maturity date**	**Terms**	**Counterparty credit rating**
Hedging derivative instruments:						
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015A bonds	$ 87,500	Apr. 1, 2016	Jan. 1, 2024	Pay 2.98%, receive 67% of 1 month USD-LIBOR-BBA	A1/AA-/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015B bonds	50,000	Feb. 11, 2009	Jan. 1, 2024	Pay 3.331%, receive 75% of 1 month USD-LIBOR-BBA	A2/A/A+
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015C bonds	43,750	Feb. 11, 2009	Jan. 1, 2024	Pay 3.2488%, receive 67% of 1 month USD-LIBOR-BBA	A2/A/A+
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015D bonds	43,750	Feb. 11, 2009	Jan. 1, 2024	Pay 3.2525%, receive 67% of 1 month USD-LIBOR-BBA	A2/A/A+
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015F bonds	72,350	May. 21, 2013	Jan. 1, 2022	Pay 3.4486%, receive until 73.2% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015G bonds	25,000	Sep. 1, 2015	Jan. 1, 2024	Pay 3.35%, receive 67% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2015H bonds	48,235	Sep. 1, 2015	Jan. 1, 2022	Pay 3.305%, receive 67% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2016B bonds	75,025	May. 21, 2013	Jan. 1, 2023	Pay 3.4486%, receive 73.2% of 1 month of USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2016C bonds	50,015	Sep. 1, 2015	Jan. 1, 2023	Pay 3.4486%, receive 63% of 1 month plus 20bp USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2016D bonds	50,000	Sep. 1, 2015	Jan. 1, 2024	Pay 3.35%, receive 67% of 1 month USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017C bonds	240,000	Sep. 1, 2015	Jan. 1, 2030	Pay 4.172%, receive 70% of 1 month of USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017C bonds	160,000	May. 21, 2013	Jan. 1, 2030	Pay 4.172%, receive 70% of 1 month of USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017D1 bonds	77,625	May. 21, 2013	Jan. 1, 2024	Pay 3.4486%, receive 73.2% of 1 month of USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017D1 bonds	51,750	Sep. 1, 2015	Jan. 1, 2024	Pay 3.4486%, receive 63% of 1 month plus 20bp USD-LIBOR-BBA	Aa2/A+/AA-
Pay-fixed, receive-variable interest rate swap	Hedge of interest rate risk on the Series 2017D2-4 bonds	50,000	Aug. 4, 2014	Jan. 1, 2024	Pay 3.35%, receive 67% of 1 month USD-LIBOR-BBA	A1/A+/A+

(a) Risks

Credit risk: The Authority is exposed to credit risk on derivative instruments that are in asset positions. To minimize its exposure to loss related to credit risk, it is the Authority's policy to require counterparty collateral posting provisions in its derivative instruments. These terms require full collateralization of the fair value of derivative instruments in asset positions (net of the effect of applicable netting arrangements) should the counterparty's credit rating fall below BBB- as issued by Standard & Poor's or Baa3 as issued by Moody's Investors Service. Collateral posted is to be in the form of U.S. Treasury securities held by a third-party custodian. All of the Authority's derivative investments provide for the netting of the value of asset and liability positions with the same counterparty upon termination. There were no derivative instruments in asset positions as of December 31, 2019 and 2018, respectively.

Basis risk: is the risk associated with imperfect hedging. It arises because of the difference between the price of the asset to be hedged and the price of the asset serving as the hedge. The Authority as of December 31, 2019 and December 31, 2018 is not exposed to basis risk as all interest rate swaps receive a variable rate based on the same rate or index as the hedge variable rate debt.

Termination risk: The Authority or its counterparties may terminate a derivative instrument if the other party fails to perform under the terms of the contract. If at the time of termination, a hedging derivative instrument is in a liability position, the Authority would be liable to the counterparty for a payment equal to the liability, subject to netting arrangements.

(b) Contingencies

All of the Authority's derivative instruments, except for the $25,000, $48,235, $50,015, $50,000 and $101,750 notional value swaps that hedge the Series 2015G, 2015H, 2016C, 2016D and 2017D Bonds, respectively, include provisions that require the Authority to post collateral in the event its credit rating falls below BBB as issued by Standard & Poor's or Baa2 as issued by Moody's Investors Service. For the Series 2015G, 2015H, 2016C, 2016D and 2017D Swap Agreements only, the rating on the respective Series 2015G, 2015H, 2016C, 2016D and 2017D Bonds would have to drop below A2 from Moody's, below A from S&P and below A from Fitch for any collateral posting requirements to be imposed upon the Authority under such agreements. The collateral posted is to be in the form of U.S. Treasury securities in the amount of the fair value of derivative instruments in liability positions. If the Authority does not post collateral, the derivative instrument may be terminated by the counterparty. As of December 31, 2019 and 2018, the aggregate fair value of all derivative instruments in liability positions with these collateral posting provisions, based on their stated fixed rates, is approximately $105,877 and $98,469, respectively. If the collateral posting requirements were triggered as of December 31, 2019 and 2018, the Authority would be required to post $105,877 and $98,469, respectively, in collateral to its counterparties. The Authority's credit rating is A2 Moody's, A+ S&P and A Fitch; therefore, no collateral posting is required as of December 31, 2019 or 2018, respectively.

(Dollars shown in thousands)

(c) Hybrid Instrument Borrowings

The interest rate swaps hedging the series noted below include fixed rates that were off-market at the execution of the interest rate swaps or current hedging relationship. For financial reporting purposes these interest rate swaps are considered hybrid instruments and are allocated between borrowings with an aggregate original amount of $131,666 as of December 31, 2019 and 2018, reflecting the difference between the fair value of the instrument at execution and an interest rate swap with a fixed rate that was considered at-the-market at execution. Activity for the hybrid instrument borrowings for the years ended December 31, 2019 and 2018 was as follows:

	December 31, 2018	Reidentifications	Additions/ Reductions	December 31, 2019	Current portion
Hybrid instrument borrowings:					
Series 2015A	$ 7,527	—	(1,224)	6,303	1,236
Series 2015B	4,522	—	(733)	3,789	741
Series 2015C	3,883	—	(632)	3,251	638
Series 2015D	3,891	—	(633)	3,258	639
Series 2015F	7,164	—	(1,759)	5,405	1,780
Series 2016B	7,483	—	(1,453)	6,030	1,474
Series 2017C1	45,266	—	(3,453)	41,813	3,508
Series 2017C2	30,190	—	(2,303)	27,887	2,340
Series 2017D1	8,471	—	(1,357)	7,114	1,379
	$ 118,397	—	(13,547)	104,850	13,735

	December 31, 2017	Reidentifications	Additions/ Reductions	December 31, 2018	Current portion
Hybrid instrument borrowings:					
Series 2013 B	$ 4,556	—	(4,556)	—	—
Series 2013 C1	5,557	—	(5,557)	—	—
Series 2013 C2	6,896	—	(6,896)	—	—
Series 2015A	8,740	—	(1,213)	7,527	1,222
Series 2015B	5,248	—	(726)	4,522	734
Series 2015C	4,509	—	(626)	3,883	632
Series 2015D	4,517	—	(626)	3,891	633
Series 2015F	8,901	—	(1,737)	7,164	1,759
Series 2016B	8,914	—	(1,431)	7,483	1,453
Series 2017C1	45,888	—	(622)	45,266	3,453
Series 2017C2	30,605	—	(415)	30,190	2,303
Series 2017D1	8,715	—	(244)	8,471	1,358
	$ 143,046	—	(24,649)	118,397	13,547

(Dollars shown in thousands)

The following table sets forth as of December 31, 2019, payments of principal and interest on the hybrid instrument borrowings for the next five years and thereafter. The total payments generally reflect the difference between the stated fixed rate of the hybrid instrument and the at-the-market fixed rate at the execution of the instrument or current hedging relationship.

	Principal	Interest	Total
December 31:			
2020	13,735	1,543	15,278
2021	13,926	1,352	15,278
2022	14,119	1,159	15,278
2023	12,470	962	13,432
2024	11,083	786	11,869
2025-2029	32,668	2,124	34,792
2030-2031	6,849	109	6,958
	104,850	8,035	112,885

(Dollars shown in thousands)

(8) Debt Compliance

The Revenue Requirement under Section 713(b) of the Turnpike Revenue Bond Resolution states that in each calendar year, Net Revenues shall at least equal the Net Revenue Requirement for such year. Under Section 101 of said Resolution, Net Revenues are defined as "for any calendar year or other period of time, the Pledged Revenues during such year or period less the amounts of the Operating Expenses for such year or period." The Net Revenue Requirement means with respect to any period of time, "an amount equal to the greater of (i) the sum of Aggregate Debt Service, Maintenance Reserve Payments, Special Project Reserve Payments and payments, if any, to the Charges Fund for such period or (ii) 1.20 times the Aggregate Debt Service for such period (excluding, for the purposes of clause (ii) only, any payment due and payable by the Authority under a Qualified Swap upon an early termination thereof)."

The net revenue requirement was met under test (i) and (ii) above for 2019 and 2018 as follows:

	2019	2018
(i):		
Net revenue available for Debt Service	$ 1,330,770	1,322,019
Less net revenue requirements computed under test (the sum of aggregate debt service, maintenance reserve, special project reserve and charges fund payments)	(997,049)	(948,054)
Excess net revenue	$ 333,721	373,965
(ii):		
Net revenue available for Debt Service	$ 1,330,770	1,322,019
Less net revenue requirements computed under test (120% x aggregate debt service requirements of $824,281 and $788,478 in 2019 and 2018, respectively)	(989,137)	(946,174)
Excess net revenue	$ 341,633	375,845

The debt service coverage ratio (Net Revenue divided by Debt Service) was 1.61 and 1.68 in 2019 and 2018, respectively.

(Dollars shown in thousands)

(9) Changes in Liabilities

Long-term liabilities primarily include bonds payable (note 6), hybrid instrument borrowing and interest rate SWAP liabilities (recorded as per GASB 53 and detailed in note 7), other long-term obligations, other postemployment benefit (OPEB) liability (recorded as per GASB 75 and detailed in note 12), and net pension liability (recorded as per GASB 68 and detailed in note 11). Other long-term obligations include pollution remediation liability (note 10), self-insurance liability (note 13), and a reserve for E-Z Pass tag swap to cover the costs of a program which periodically replaces New Jersey E-Z Pass customer transponders that have reached the end of their useful lives. In addition, other long-term liabilities include other reserves, which primarily include the reserve for separation bonus contractually required for payout at the time of retirement, the reserve for maintenance equipment and the reserve for retroactive payments. Other long-term liabilities also include the pension - employer contribution which represents pension expenses for 6 months (July 1, 2019 - December 31, 2019) that are not payable within a year, employees accrued sick and vacation banks, and other liabilities which mainly includes escrow deposits, FICA tax and arbitrage liabilities.

The chart below shows the additions to and reductions from the above-mentioned categories of long-term liabilities and the balances as of December 31, 2019 and 2018, respectively.

	December 31, 2018	Additions	Reductions	December 31, 2019	Current portion
Bonds payable, net	$ 11,331,888	478,629	(257,411)	11,553,106	228,205
Hybrid instrument borrowing	118,397	—	(13,547)	104,850	13,735
Interest rate swap liabilities	6,738	22,920	(91)	29,567	—
Other postemployment benefits	1,740,913	73,000	(211,644)	1,602,269	—
Net pension liability	365,599	—	(36,065)	329,534	—
Other long-term obligations:					
Pollution remediation liability	23,692	3,821	(2,755)	24,758	800
Self-Insurance Reserve	34,852	9,829	(8,823)	35,858	—
Reserve for E-ZPass tag swap	14,476	2,240	(5,529)	11,187	—
Other Reserves	18,468	20,756	(22,587)	16,637	—
Pension - Employer Contribution	12,185	19,343	(20,718)	10,810	—
Accrued Sick and Vacation	17,256	1,204	(2,273)	16,187	4,448
Other Liabilities	5,861	3,623	(1,622)	7,862	5,202
Total	13,690,325	635,365	(583,065)	13,742,625	252,390

(Dollars shown in thousands)

	December 31, 2017	Additions	Reductions	December 31, 2018	Current portion
Bonds payable, net	$ 11,610,729	—	(278,841)	11,331,888	201,025
Hybrid instrument borrowing	143,046	—	(24,649)	118,397	13,547
Interest rate swap liabilities	20,914	104	(14,280)	6,738	—
Other postemployment benefits	494,098	1,246,815	—	1,740,913	—
Net pension liability	438,493	—	(72,894)	365,599	—
Other long-term obligations:					
Pollution remediation liability	23,938	1,219	(1,465)	23,692	5,755
Self-insurance Reserve	41,342	2,524	(9,014)	34,852	—
Reserve for E-ZPass tag swap	17,339	4,830	(7,693)	14,476	—
Other Reserves	18,424	9,294	(9,250)	18,468	—
Pension - Employer Contribution	—	12,185	—	12,185	
Accrued Sick and Vacation	16,227	2,690	(1,661)	17,256	4,181
Other Liabilities	4,941	5,039	(4,119)	5,861	3,137
Total	$ 12,829,491	1,284,700	(423,866)	13,690,325	227,645

(10) Pollution Remediation Obligations

The Authority accounts for its pollution remediation obligations (PRO) in accordance with GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations* (GASB 49). As a result, the Authority has recorded in the statements of net position a PRO liability in the amount of $24,758 and $23,692 as of December 31, 2019 and 2018, respectively. The Authority's Pollution Remediation Obligation is measured based on the expected costs of future activities, estimating a reasonable range of potential outlays and multiplying those outlays by their probability of occurring. The estimate of the liability does not include cost components that are not yet reasonably measurable. As of December 31, 2019, the Authority has funded $13,100 of the current Pollution Remediation Obligation.

The Authority owns numerous properties with environmental issues that meet the criteria for "obligating events" and disclosure under GASB 49. The matters relate to soil and groundwater contamination at various facilities along the Turnpike and Parkway including maintenance districts, toll facilities, service areas and other Authority owned facilities (see note 15). The following table summarizes the Authority's expected outlays and payments for pollution remediation as of December 31:

	2019	2018
Right of Way	$ 13,100	13,100
Service areas	9,783	9,233
Maintenance districts	1,330	802
Toll facilities	265	400
Other facilities	280	157
Liability for pollution remediation obligations	$ 24,758	23,692

The Authority has designated reserves of $13,100 for the Pollution Remediation Obligation both as of December 31, 2019 and December 31, 2018.

(11) Pension and Deferred Compensation

1) Plan description

Permanent full-time employees of the Authority are covered by the State of New Jersey Public Employees' Retirement System (PERS), a plan that has been characterized for financial accounting purposes as a cost-sharing multiple-employer defined benefit pension plan. PERS is a contributory defined-benefit plan established in January 1955, under the provisions of N.J.S.A. 43:15A to provide coverage to substantially all full-time employees of the State of New Jersey or any county, municipality, school district or public agency, provided the employee is not a member of another State administered retired system. Membership is mandatory and vesting occurs after ten years of service, except for medical benefits, which vest after 25 years of service or under the disability provisions of PERS.

The risks of participating in a cost-sharing multiple-employer plan are different from those of participating in a single-employer plan in the following aspects:

- Assets contributed to the multiple-employer plan by one employer may be used to provide benefits to employees of other participating employers.
- If a participating entity stops contributing to the multiple-employer plan, the unfunded obligations of the plan may be borne by the remaining participating entities.
- If an entity petitions to stop participating in the multiple-employer plan, the entity may be required to pay the plan a withdrawal liability based on the funded status of the plan.

These aspects of cost-sharing multiple-employer plan participation are consistent with the manner of administration of the PERS. These aspects are not required by law but are part of the PERS administrative practices. Neither the financial accounting treatment of the PERS, nor their administrative practices, nor this note shall be deemed a representation that the PERS are subject to any laws that require the multiple-employer plan attributes that are set forth above.

PERS issues a stand-alone financial report that is available to the public. The report may be accessed via the State of New Jersey's website at: https://www.state.nj.us/treasury/pensions/documents/financial/gasb/gasb68-pers20.pdf.

(Dollars shown in thousands)

2) Benefits provided

A summary of the PERS eligibility requirements is as follows:

	TIER 1 (Enrolled before July 1, 2007)	TIER 2 (Eligible for enrollment on or after July 1, 2007 and before November 2, 2008)	TIER 3 (Eligible for enrollment on or after November 2, 2008 and on or before May 21, 2010)	TIER 4 (Eligible for enrollment after May 21, 2010 and before June 28, 2011)	TIER 5 (Eligible for enrollment on or after June 28, 2011)
PERS	Minimum base salary of $1,500 required for PERS Tier 1 enrollment. IRS Annual Compensation Limit on maximum salary generally apply $285,000 for 2020.	Minimum base salary of $1,500 required for PERS Tier 2 enrollment. PERS salary limited to Social Security maximum wage $137,700 for 2020. PERS members are eligible for participation in the Defined Contribution Retirement Program (DCRP) for salary over the maximum wage limit.	Minimum base salary required for PERS Tier 3 enrollment. $8,400 for 2020. Employees with base salary between $5,000 and current minimum PERS. Tier 3 salary are eligible for participation in the DCRP. PERS salary limited to Social Security maximum wage $137,700 for 2020. PERS members are eligible for participation in the DCRP for salary over the maximum wage limit.	PERS Tier 4 enrollment requires a minimum of 35 hours per week for State Employees, or 32 hours per week for Local Government or Local Education Employees. No minimum salary requirement. Employees who do not work the minimum required hours but who earn base salary of at least $5,000 are eligible for participation in the DCRP. PERS salary limited to Social Security maximum wage $137,700 for 2020. PERS members are eligible for participation in the DCRP for salary over the maximum wage limit.	PERS Tier 5 enrollment requires a minimum of 35 hours per week for State Employees, or 32 hours per week for Local Government or Local Education Employees. No minimum salary requirement. Employees who do not work the minimum required hours but who earn base salary of at least $5,000 are eligible for participation in the DCRP. PERS salary limited to Social Security maximum wage $137,700 for 2020. PERS members are eligible for participation in the DCRP for salary over the maximum wage limit.
TPAF	Minimum base salary of $500 required for TPAF Tier 1 enrollment. IRS Annual Compensation Limit on maximum salary generally apply $285,000 for 2020	Minimum base salary of $500 required for TPAF Tier 2 enrollment. TPAF salary limited to Social Security maximum wage $137,700 for 2020. TPAF members are eligible for participation in the DCRP for salary over the maximum wage limit.	Minimum base salary required for TPAF Tier 3 enrollment. $8,400 for 2020. Employees with base salary between $5,000 and current minimum TPAF Tier 3 salary are eligible for participation in the DCRP. TPAF salary limited to Social Security maximum wage $137,700 for 2020. TPAF members are eligible for participation in the DCRP for salary over the maximum wage limit.	TPAF Tier 4 enrollment requires a minimum of 35 hours per week for State Employees, or 32 hours per week for Local Education Employees. No minimum salary requirement. Employees who do not work the minimum required hours but who earn base salary of at least $5,000 are eligible for participation in the DCRP. TPAF salary limited to Social Security maximum wage $137,700 for 2020. TPAF members are eligible for participation in the DCRP for salary over the maximum wage limit.	TPAF Tier 5 enrollment requires a minimum of 35 hours per week for State Employees, or 32 hours per week for Local Education Employees. No minimum salary requirement. Employees who do not work the minimum required hours but who earn base salary of at least $5,000 are eligible for participation in the DCRP. TPAF salary limited to Social Security maximum wage $137,700 for 2020. TPAF members are eligible for participation in the DCRP for salary over the maximum wage limit.
SERVICE RETIREMENT	Minimum age of 60, no minimum service required. Annual Benefit = Years of Service ÷ 55 X Final Average (3 yrs.) Salary.	Minimum age of 60, no minimum service required. Annual Benefit = Years of Service ÷ 55 X Final Average (3 yrs.) Salary.	Minimum age of 62, no minimum service required. Annual Benefit = Years of Service ÷ 55 X Final Average (3 yrs.) Salary.	Minimum age of 62, no minimum service required. Annual Benefit = Years of Service ÷ 60 X Final Average (5 yrs.) Salary.	Minimum age of 65, no minimum service required. Annual Benefit = Years of Service ÷ 60 X Final Average (5 yrs.) Salary.
DEFERRED RETIREMENT	Collectible at age 60, at least 10 years of service required. Annual Benefit = Years of Service ÷ 55 X Final Average (3 yrs.) Salary	Collectible at age 60, at least 10 years of service required. Annual Benefit = Years of Service ÷ 55 X Final Average (3 yrs.) Salary.	Collectible at age 62, at least 10 years of service required. Annual Benefit = Years of Service ÷ 55 X Final Average (3 yrs.) Salary.	Collectible at age 62, at least 10 years of service required. Annual Benefit = Years of Service ÷ 60 X Final Average (5 yrs.) Salary.	Collectible at age 65, at least 10 years of service required. Annual Benefit = Years of Service ÷ 60 X Final Average (5 yrs.) Salary.
EARLY RETIREMENT	At least 25 years of service required. Annual Benefit = Years of Service ÷ 55 X Final Average (3 yrs.) Salary. No minimum age; however, if under age of 55, the benefit is reduced 3 percent per year (1/4 of 1 percent per month) for each year under age 55.	At least 25 years of service required. Annual Benefit = Years of Service ÷ 55 X Final Average (3 yrs.) Salary. No minimum age; however, if under age of 60, the benefit is reduced 1 percent per year (1/12 of 1 percent per month) for each year under age 60 but over age 55; and 3 percent per year (1/4 of 1 percent per month) for each year under age 55.	At least 25 years of service required. Annual Benefit = Years of Service ÷ 55 X Final Average (3 yrs.) Salary. No minimum age; however, if under age of 62, the benefit is reduced 1 percent per year (1/12 of 1 percent per month) for each year under age 62 but over age 55; and 3 percent per year (1/4 of 1 percent per month) for each year under age 55.	At least 25 years of service required. Annual Benefit = Years of Service ÷ 60 X Final Average (5 yrs.) Salary. No minimum age; however, if under age of 62, the benefit is reduced 1 percent per year (1/12 of 1 percent per month) for each year under age 62 but over age 55; and 3 percent per year (1/4 of 1 percent per month) for each year under age 55.	At least 30 years of service required. Annual Benefit = Years of Service ÷ 60 X Final Average (5 yrs.) Salary. No minimum age; however, if under age of 65, the benefit is reduced 3 percent per year (1/4 of 1 percent per month) for each year under age 65.
VETERAN RETIREMENT	At least 25 years of service at age 55 or older; or at least 20 years of service at age 60 or older. Annual Benefit = 54.5 percent X last year or highest 12 months of salary; or At least 35 years of service at age 55 or older. Annual Benefit = Years of Service ÷ 55 X Highest 12 Months of Salary.	At least 25 years of service at age 55 or older; or at least 20 years of service at age 60 or older. Annual Benefit = 54.5 percent X last year or highest 12 months of salary; or At least 35 years of service at age 55 or older. Annual Benefit = Years of Service ÷ 55 X Highest 12 Months of Salary.	At least 25 years of service at age 55 or older; or at least 20 years of service at age 60 or older. Annual Benefit = 54.5 percent X last year or highest 12 months of salary; or At least 35 years of service at age 55 or older. Annual Benefit = Years of Service ÷ 55 X Highest 12 Months of Salary.	At least 25 years of service at age 55 or older; or at least 20 years of service at age 60 or older. Annual Benefit = 54.5 percent X last year or highest 12 months of salary; or At least 35 years of service at age 55 or older. Annual Benefit = Years of Service ÷ 55 X Highest 12 Months of Salary.	At least 25 years of service at age 55 or older; or at least 20 years of service at age 60 or older. Annual Benefit = 54.5 percent X last year or highest 12 months of salary; or At least 35 years of service at age 55 or older. Annual Benefit = Years of Service ÷ 55 X Highest 12 Months of Salary.
ORDINARY DISABILITY RETIREMENT	If approved: Annual benefit = 43.6 percent X Final Average (3 yrs.) Salary.	If approved: Annual benefit = 43.6 percent X Final Average (3 yrs.) Salary.	If approved: Annual benefit = 43.6 percent X Final Average (3 yrs.) Salary.	NOT AVAILABLE: PERS Tier 4 members may be eligible for long-term disability insurance coverage.	NOT AVAILABLE: PERS Tier 5 members may be eligible for long-term disability insurance coverage.
ACCIDENTAL DISABILITY RETIREMENT	If approved: Annual Benefit = 72.7 percent X Annual Salary at time of accident.	If approved: Annual Benefit = 72.7 percent X Annual Salary at time of accident.	If approved: Annual Benefit = 72.7 percent X Annual Salary at time of accident.	NOT AVAILABLE: TPAF Tier 4 members may be eligible for long-term disability insurance coverage.	NOT AVAILABLE: TPAF Tier 5 members may be eligible for long-term disability insurance coverage.

3) Contributions

The contribution policy for PERS is set by N.J.S.A. 15A and requires contributions by active members and contributing employers. State legislation has modified the amount that is contributed by the State. The State's pension contribution is based on an actuarially determined amount, which includes the employer portion of the normal cost and an amortization of the unfunded accrued liability. Funding for noncontributory group insurance benefits is based on actual claims paid. For fiscal year 2019 and 2018, the State's pension contribution was less than the actuarial determined amount. The local employers' contribution amounts are based on an actuarially determined rate, which includes the normal cost and unfunded accrued liability. Chapter 19, P.L. 2009 provided an option for local employers of PERS to contribute 50% of the normal and accrued liability contribution amounts certified for payments due in State fiscal year 2009. Such employers will be credited with the full payment and any such amounts will not be included in their unfunded liability. The actuaries will determine the unfunded liability of those retirement systems, by employer, for the reduced normal and accrued liability contributions provided under this law. This unfunded liability will be paid by the employer in level annual payments over a period of 15 years beginning with the payments due in the fiscal year ended June 30, 2012 and will be adjusted by the rate of return on the actuarial value of assets. The Authority did not elect this option.

Covered Authority employees are required to contribute a percentage of their salary toward their pension benefits. P.L. 2011, c78, effective June 28, 2011, increased the active member contribution rate from 5.5% of annual compensation to 6.5% plus an additional 1% phased in over 7 years. The payment of automatic cost of living adjustment (COLA) additional increases to current and future retirees and beneficiaries was suspended. COLA increases may be reactivated at a future date as permitted by this law. Employee contributions were $10,498 and $9,745 for the years ended December 31, 2019 and 2018, respectively. The percentage of employee's contribution rate as a percentage of covered payroll for 2019 and 2018 was 7.59%, and 7.42%, respectively. The payroll subject to pension for the Authority's employees covered by PERS was approximately $138,300 and $131,300 for the years ended December 31, 2019 and 2018. The Authority's total payroll for the years ended December 31, 2019 and 2018 was approximately $171,000 and $165,000, respectively.

The Authority is required by statute to contribute to the employee's pension benefits based on an annual actuarial calculation. The valuation is a determination of the financial condition of the retirement system. The PERS employer pension contribution rates were 14.11% and 13.37% for the years ended December 31, 2019 and 2018, respectively. The Authority's required annual contributions to the PERS were $17,789 and $18,469 for the years ended December 31, 2019 and 2018, respectively. The percentage of employer's contribution rate as a percentage of total payroll for 2019 and 2018 was 10.40% and 11.19%, respectively. The Authority's required annual contributions represent less than 2% of total contributions by municipalities and local groups to the PERS.

Pension expense recognized in accordance with the requirements of GASB 68 was $9,543 and $15,748 at December 31, 2019 and 2018, respectively.

(Dollars shown in thousands)

4) Net Pension Liability and Deferred Outflows/Inflows of Resources Related to Pensions

December 31, 2019 and 2018, the Authority reported a liability of $329,534 and $365,599, respectively, for its proportionate share of the collective PERS net pension liability. The net pension liability was measured as of June 30, 2019 and June 30, 2018, respectively, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of July 1, 2018 and July 1, 2017, respectively with amounts rolled forward to the measurement date using update procedures. For purposes of measuring the net pension liability, the plan's fiduciary net position has been determined on the same basis as they are reported for PERS. Benefit payments are recognized when due and payable in accordance with the benefit terms and investments are measured at their fair value. At June 30, 2019, the Authority's proportion of the total plan was 0.95%, which was a decrease of 0.15% from 1.10% which was the Authority's proportion measured as of June 30, 2018. The employer allocation percentages are based on the ratio of the contributions of an individual employer to the total contributions to PERS during the measurement period. At December 31, 2019 and 2018, respectively, the Authority reported deferred outflows and deferred inflows of resources related to pensions from the following sources:

	2019		2018	
	Deferred outflows of resources	**Deferred inflows of resources**	**Deferred outflows of resources**	**Deferred inflows of resources**
Differences between expected and actual experience	$ 5,915	1,456	6,972	1,885
Net difference between projected and actual earnings on pension plan investments	—	5,202	—	3,429
Changes in employer proportion	—	13,388	—	12,791
Changes in assumptions	32,905	114,380	60,245	116,899
Employer contribution made subsequent to the measurement date	8,895	—	9,235	—
Total	$ 47,715	134,426	76,452	135,004

(Dollars shown in thousands)

Included in deferred outflows of resources related to pensions at December 31, 2019 and 2018 is $8,895 and $9,235, respectively, from contributions made by the Authority subsequent to the respective measurement date that will be recognized as a reduction of the net pension liability in the following fiscal year. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

		2019
Year ended June 30:		
2020	$	(14,607)
2021		(34,495)
2022		(30,084)
2023		(14,836)
2024		(1,584)
Total	$	(95,606)

5) Significant Assumptions and Other Inputs Used to Measure Total Pension Liability

The collective total pension liability for the June 30, 2019 and 2018 measurement date was determined by an actuarial valuation as of July 1, 2018 and 2017, respectively, which was rolled forward to June 30, 2019 and 2018. The respective actuarial valuations used the following actuarial assumptions.

	2019
Inflation rate:	
Price	2.75%
Wage	3.25%
Salary increases:	
Through 2026	2.00 - 6.00% based on years of service
Thereafter	3.00 - 7.00% based on years of service
Investment rate of return	7.00%

	2018
Inflation rate:	2.25%
Salary increases:	
Through 2026	1.65 – 4.15% based on age
Thereafter	2.65 – 5.15% based on age
Investment rate of return	7.00%

2019

For the July 1, 2018 valuation, preretirement mortality rates were based on the Pub-2010 General Below-Median Income Employee mortality table with an 82.2% adjustment for males and 101.4% adjustment for females, and with future improvement from the base year of 2010 on a generational basis. Post-retirement mortality rates were based on the Pub-2010 General Below-Median Income Healthy Retiree mortality table with a 91.4% adjustment for males and 99.7%

adjustment for females, and with future improvement from the base year of 2010 on a generational basis. Disability retirement rates used to value disabled retirees were based on the Pub-2010 Non-Safety Disabled Retiree mortality table with a 127.7% adjustment for males and 117.2% adjustment for females, and with future improvement from the base year of 2010 on a generational basis. Mortality improvement is based on Scale MP-2019.

The actuarial assumptions used in the July 1, 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2014 to June 30, 2018.

2018

Preretirement mortality rates were based on the RP-2000 Employee Preretirement Mortality Table for male and female active participants. For State employees, mortality tables are set back 4 years for males and females. For local employees, mortality tables are set back 2 years for males and 7 years for females. In addition, the tables provide for future improvements in mortality from the base year of 2013 using a generational approach based on the Conduent modified 2014 projection scale. Postretirement mortality rates were based on the RP-2000 Combined Healthy Male and Female Mortality Tables (set back 1 year for males and females) for service retirements and beneficiaries of former members. In addition, the tables for service retirements and beneficiaries of former members provide for future improvements in mortality from 2012 and 2013 using Projection Scale AA and using a generational approach based on the Conduent 2014 projection scale thereafter. Disability retirement rates used to value disabled retirees were based on the RP-2000 Disabled Mortality Table (set back 3 years for males and set forward 1 year for females).

The actuarial assumptions used in the July 1, 2017 valuations were based on the results of an actuarial experience study for the period July 1, 2011 to June 30, 2014. It is likely that future experience will not exactly conform to these assumptions. To the extent that actual experience deviates from these assumptions, the emerging liabilities may be higher or lower than anticipated. The more the experience deviates, the larger the impact on the future financial statements.

(a) Long-Term Expected Rate of Return

The long-term expected rate of return was 7.00% for the June 30, 2019 and 2018 valuations. The long-term expected rate of return was determined using a building block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan 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 arithmetic real rates of return for each major asset class included in PERS's target asset allocation as of June 30, 2019 and 2018 are summarized in the following table:

(Dollars shown in thousands)

	2019	
Asset class	**Target allocation**	**Long-term expected real rate of return**
Risk mitigation strategies	3.00 %	4.67 %
Cash equivalents	5.50	2.00
U.S. Treasuries	5.00	2.68
Investment grade credit	10.00	4.25
High yield	2.00	5.37
Private credit	6.00	7.92
Real assets	2.50	9.31
Real estate	7.50	8.33
US Equity	28.00	8.26
Non-U.S. developed markets equity	12.50	9.00
Emerging markets equity	6.50	11.37
Private Equity	12.00	10.85

	2018	
Asset class	**Target allocation**	**Long-term expected real rate of return**
Absolute return/risk mitigation	5.00 %	5.51 %
Cash equivalents	5.50	1.00
U.S. Treasuries	3.00	1.87
Investment grade credit	10.00	3.78
High yield	2.50	6.82
Global diversified credit	5.00	7.10
Credit oriented hedge funds	1.00	6.60
Debt related private equity	2.00	10.63
Debt related real estate	1.00	6.61
Private real asset	2.50	11.83
Equity related real estate	6.25	9.23
U.S. equity	30.00	8.19
Non-U.S. developed markets equity	11.50	9.00
Emerging markets equity	6.50	11.64
Buyouts/venture capital	8.25	13.08

(b) Discount Rate

2019

The discount rate used to measure the total pension liability was 6.28% as of June 30, 2019. This single blended discount rate was based on the long-term expected rate of return on pension plan investments of 7.00% and a municipal bond rate of 3.50% as of June 30, 2019 based on the Bond Buyer Go 20-Bond Municipal Bond Index, which includes tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current member contribution rates and that contributions from employers will be based on 70% of the actuarially determined contributions for the State employer and 100% of actuarially determined contributions for the local employers. Based on those assumptions, the plan's fiduciary net position was projected to be available to make projected future benefit payments of current plan members through 2057. Therefore, the long-term expected rate of return on plan investments was applied to projected benefit payments through 2057 and the municipal bond rate was applied to projected benefit payments after that date in determining the total pension liability.

The discount rate used to measure the total pension liability was 5.66% as of June 30, 2018. This single blended discount rate was based on the long-term expected rate of return on pension plan investments of 7.00% and a municipal bond rate of 3.87% as of June 30, 2018 based on the Bond Buyer Go 20-Bond Municipal Bond Index, which includes tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current member contribution rates and that contributions from employers will be made based on the contribution rate in the most recent fiscal year. The State employer contributed 50% of the actuarially determined contributions and the local employers contributed 100% of their actuarially determined contributions. Based on those assumptions, the plan's fiduciary net position was projected to be available to make projected future benefit payments of current plan members through June 30, 2046. Therefore, the long-term expected rate of return on plan investments was applied to projected benefit payments through June 30, 2046 and the municipal bond rate was applied to projected benefit payments after that date in determining the total pension liability.

(c) *Sensitivity of the Authority's Proportionate Share of the Net Pension Liability to Changes in the Discount Rate*

The following presents the Authority's proportionate share of the net pension liability of the participating employers as of June 30, 2019 and 2018, respectively, calculated using the discount rate as disclosed above as well as what the proportionate net pension liability would be if it was calculated using a discount rate that is 1 percentage point lower or 1 percentage point higher than the current rate:

(Dollars shown in thousands)

		1% Decrease	Current discount rate	1% Increase
2019 (5.28%, 6.28%, and 7.28%)	$	419,151	329,534	258,244
2018 (4.66%, 5.66%, and 6.66%)	$	459,699	365,599	286,656

Deferred Compensation Plan

The Authority adopted the New Jersey Turnpike Authority Employees' Deferred Compensation Plan (Deferred Compensation Plan) effective as of January 1, 1999, in accordance with the provisions of Section 27:23-1, et seq., of the New Jersey Revised Statutes and as provided in Section 457 of the Internal Revenue Code of 1986, as amended (Code). The Deferred Compensation Plan was amended and restated effective as of December 6, 2018. All permanent employees are eligible to participate in the plan, which permits participants to defer annually a portion of their salary. The Authority does not make any contributions to the plan. Employees of the South Jersey Transportation Authority and the Burlington County Bridge Commission are also eligible to participate in the plan. All amounts of compensation deferred under the plan, all property and rights purchased with these amounts, and all income attributable to these amounts, property, or rights are solely the property of the employees.

(Dollars shown in thousands)

(12) Postemployment Benefits Other Than Pensions (OPEB)

1) Plan description

The Authority provides medical, prescription drug, vision, dental and Medicare Part B reimbursement to retirees and their covered dependents, in accordance with the terms of the applicable collective bargaining agreements or Authority personnel policies for non-bargaining unit members. The Authority maintains single employer, self funded health plans administered by third party claims administrators. All active employees who retire from the Authority and meet the eligibility criteria will receive these benefits.

The Authority establishes and has the power to amend benefits and contribution obligations, subject to collective bargaining agreements to the extent they do not conflict with P.L.2012, Chapter 78 mandated by the State of New Jersey (effective June 28, 2011).

2) Benefits provided

The Authority provides medical, prescription drug, vision, dental and Medicare Part B reimbursement to retirees and their dependents. Certain retirees (those with less than 20 years of service at June 28, 2011) will be required to contribute under P.L. 2012, Chapter 78 mandated by the State of New Jersey (effective June 28, 2011). For the years ended December 31, 2019 and 2018, 294 and 264 retirees, respectively, contributed to their healthcare cost, in accordance with the provisions of agreements in effect at the time of their retirement and P.L. 2011, Chapter 78.

The Authority currently funds the cost to provide OPEB on a pay-as-you-go basis.

3) Plan membership

At December 31, 2017, the actuarial valuation date, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefit payments	2,074
Inactive employees entitled to but not yet receiving benefit payments	—
Active employees	1,958
	4,032

(Dollars shown in thousands)

4) Total OPEB liability

The Authority's total OPEB liability is $1,602,269 as of December 31, 2019 and $1,740,913 as of December 31, 2018. The liability as of December 31, 2019 and 2018 was measured as of December 31, 2018 and December 31, 2017, respectively, and was determined by actuarial valuations using data as of December 31, 2017. The total OPEB liability was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

	2019	2018
Inflation	2.00%	2.00%
Salary increases	3.00%	3.00%
Discount rate	4.10%	3.44%
Healthcare cost trend rates		
Pre Medicare Medical	8.75% grading down to 4.50% over 17 years	9.00% grading down to 4.50% over 18 years
Post Medicare Medical	7.75% grading down to 4.50% over 13 years	8.00% grading down to 4.50% over 14 years
Prescription drug	8.25% grading down to 4.50% over 15 years	8.50% grading down to 4.50% over 16 years
Dental and Vision	4.00%	4.00%
Medicare Part B reimbursement	5.00%	1.12%, then 5.00% thereafter

In 2019 and 2018, the discount rate was based on a yield of index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher as shown in the Bond Buyer 20-Bond General Obligation Index.

In 2019 and 2018, Mortality rates are based on RP-2000 Combined Healthy and Disabled Mortality Tables set back 4 years for both males and females. Non-Annuitant mortality rates are based on RP-2000 Combined Healthy Male and Female Mortality Tables set back 4 years for both males and females. Healthy Annuitant mortality rates are based on RP-2000 Combined Healthy Male and Female Mortality Tables set back 1 year for both males and females and a one year static projection based on mortality improvement Scale AA. Disabled Annuitant mortality rates are based on RP-2000 Disabled Mortality Table set back 3 years for males and set forward 1 year for females. The underlying tables reasonably reflect the mortality experience of the Plan as of the measurement date. These mortality tables were then adjusted to future years from base year 2013 using a generational projection based on the Conduent Modified 2014 projection scale to reflect future mortality improvement between the measurement date and those years.

The actuarial assumptions used in the December 31, 2017 valuation were based on the results of a 3-year actuarial experience study as of June 30, 2014.

(Dollars shown in thousands)

Changes in the total OPEB liability

	2019	2018
Balance at January 1	$ 1,740,913	$ 1,596,557
Changes for the year:		
Service cost	46,612	42,623
Interest	60,701	61,150
Differences between expected and actual experience in the total OPEB liability	(23,098)	89,887
Changes in assumptions or other inputs	(176,958)	(6,371)
Benefit payments, including refunds of member contributions	(45,901)	(42,933)
Net changes	(138,644)	144,356
Balance at December 31	$ 1,602,269	$ 1,740,913

The net change in total OPEB liability for the years ended December 31, 2019 and 2018 was $138,644 and $144,356, respectively. The difference between expected and actual expenses decreased the total OPEB liability by $23,098 in 2019 and increased by $89,887 in 2018 as claims experience and the trends on those claims updated based on recent experience and future expectations. Valuation assumption changes decreased the total OPEB Liability by $176,958 in 2019 and by $6,371 in 2018. In 2019, this was a net result of (1) a decrease due to raising the discount rate and (2) due to updated information regarding which retirees are disabled and eligible for Medicare. In 2018, this was a net result of (1) a decrease in obligations due to revising the valuation-year per capita health costs and future trend on such costs, and (2) an increase due to lowering the discount rate.

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:

	1% Decrease	Current Discount Rate	1% Increase
Net OPEB liability			
2019 (3.10%, 4.10%, 5.10%)	$ 1,881,450	1,602,269	1,379,305
2018 (2.44%, 3.44%, 4.44%)	2,066,098	1,740,913	1,483,829

(Dollars shown in thousands)

Sensitivity of the total OPEB liability to changes in the healthcare cost 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 health care cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the current healthcare cost trends.

	1% Decrease	Current Health Care Cost Trend Rates	1% Increase in Health Care Cost Trend Rates
Net OPEB liability			
2019 (7.75%-3.00%, 8.75%-4.00%, 9.75%-5.00%)	$ 1,349,079	1,602,269	1,928,211
2018 (8%-0.12%, 9%-1.12%, 10%-2.12%)	1,462,736	1,740,913	2,101,581

5) OPEB expense and deferred outflows of resources and deferred in flows of resources related to OPEB

For the years ended December 31, 2019 and 2018, the Authority recognized OPEB expense of $86,201 and $118,901, respectively. As of December 31, 2019 and 2018, the Authority reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	2019		2018	
	Deferred outflows of resources	Deferred inflows of resources	Deferred outflows of resources	Deferred inflows of resources
Differences between expected and actual experience in the Total OPEB Liability	$ 57,319	18,913	73,603	—
Changes of assumptions or other inputs	—	148,963	—	5,217
Retiree health benefit payments subsequent to the measurement date	45,030	—	45,901	—
Total	$ 102,349	167,876	119,504	5,217

(Dollars shown in thousands)

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

		2019
Year ended December 31:		
2020	$	(21,112)
2021		(21,112)
2022		(21,112)
2023		(28,374)
2024		(18,847)
Total	$	(110,557)

(13) Risk Management and Self-Insurance

The Authority is exposed to variety of risks such as theft, damage to and destruction of its infrastructure, natural disasters and injuries to employees during regular business operations. To mitigate these types of risks and others, the Authority maintains a robust insurance program which includes self-insurance for workers compensation, auto and general liability and a comprehensive owner controlled insurance program (OCIP) for certain construction contracts included in the Authority's $7 Billion CIP.

The Authority is self-insured for its workers compensation, auto and general liability risks up to certain limits. The Authority does purchase excess liability insurance coverage to partially mitigate its self-insured risk for large claims related to its workers compensation, auto and general liability risks.

From 2009 to 2017, the Authority provided general liability and workers compensation coverage, as well as other insurance coverages, for construction contracts included in the Authority's $7 Billion CIP, for the benefit of the Authority and its contractors, subcontractors, consultants and sub-consultants at customary ranges of coverage limits and self-insured retentions and/or deductibles. The Authority ceased enrolling new contracts in its OCIPs in 2014, and ceased providing coverage after July 15, 2017, but the OCIP programs still administer general liability, workers compensation and other claims related to prior coverage periods. After July 15, 2017, the contractors and the consultants provide their own coverage. Similar to its workers compensation, auto and general liability risks, the Authority self-insures its risks under the OCIP program, and purchased excess liability insurance coverage to mitigate large claim exposure.

In addition to the aforementioned, the Authority insures other selected risks by purchasing commercial crime insurance, cyber liability insurance, fiduciary insurance, aviation insurance, drone insurance, and public officials and employment practices liability insurance.

Finally, the Authority is self-insured for the cost of providing health benefits to its employees and retirees. These benefits include medical, prescription, dental and vision. The Authority does purchase excess liability insurance for employee health benefits (stop loss) to mitigate large claim risk.

(Dollars shown in thousands)

The following chart provides additional information as to risks insured for the protection of the Authority, and deductibles/self-insured retentions. Certain defined risks are subject to sub-limits and more specific deductibles/self-insured retentions and all insurances are subject to terms and conditions as set forth in the policies.

Type of insurance coverage	Deductible/retention	
Excess Insurance for Self-Insured Programs		
Excess Liability (general liability)	$ 2,000	per occurrence ($3,000 aggregate)
Excess Liability (automobile liability)	5,000	per occurrence
Excess Liability (State police)	2,000	per occurrence
Excess Employee Medical Benefits	350	per claimant
Excess Workers Compensation & Employers Liability	1,250	per occurrence
Other Insurance Policies		
Bridge and Property (1)	2,000	per occurrence
Commercial Crime	75	per occurrence
Cyber Insurance	250	per occurrence
Public Official and Employment Practices Liability	500	per occurrence
Professional Liability Insurance Architects & Engineers	100	per claim for project values up to $500,000 and
	250	per for claim project values greater than $500,000

(1) Bridge and property insurance includes business interruption insurance which is subject to a two-day waiting period with respect to approximately 66.67% of the pro-rata share of the primary policy insurers and a five day waiting period with respect to approximately 33.33% of the pro-rata share of the primary policy insurers. In the event a covered loss continues beyond the respective waiting periods, coverage starts from the first day of the loss, subject to the $2,000 deductible.

On January 20, 2017, the Delaware River Turnpike Bridge between New Jersey and Pennsylvania, which permits traffic on the Authority's Pearl Harbor Memorial Turnpike Extension to connect with the Pennsylvania Turnpike, was fully closed for emergency repairs. After the completion of certain repairs and extensive examination and testing, the bridge was fully reopened to traffic on March 9, 2017. In December 2017, the Authority filed a claim under its Bridge and Property Insurance, including business interruption insurance, for all physical damage costs, related extra expenses and lost revenue due to the damage and subsequent closure of the Delaware River Turnpike Bridge. As of December 31, 2019, the Authority has recovered $7,200 from its Bridge and Property insurance carriers for property damage and business interruption in connection with this event. The Authority is working closely with the insurance companies to recover the remaining amount of this claim.

(Dollars shown in thousands)

Claim liabilities are recorded when it is probable that a loss occurred and the amount of that loss can be reasonably estimated. The liabilities include a provision for claim reserves as well as incurred but not reported and future development of known cases. The following tables present the changes in claims liabilities for the years ended December 31, 2019 and 2018:

	December 31, 2018	Change in estimate	Payments	December 31, 2019
General liability	$ 2,332	649	(178)	2,803
Auto liability	1,400	934	(534)	1,800
Workers' compensation	20,446	7,004	(5,681)	21,769
Owner controlled insurance program (OCIP)	10,674	1,242	(2,430)	9,486
Total	$ 34,852	9,829	(8,823)	35,858

	December 31, 2017	Change in estimate	Payments	December 31, 2018
General liability	$ 4,248	(1,649)	(267)	2,332
Auto liability	1,161	948	(709)	1,400
Workers' compensation	22,260	2,978	(4,792)	20,446
Owner controlled insurance program (OCIP)	13,673	247	(3,246)	10,674
Total	$ 41,342	2,524	(9,014)	34,852

The Authority has designated reserves of $26,300 and $15,918 for self-insurance liability to fund the general, auto and workers' compensation liabilities as of December 31, 2019 and 2018 respectively.

(14) Blended Component Unit - Garden State Arts Foundation, Inc.

The Garden State Arts Foundation, Inc. (formerly known as the Garden State Arts Center Foundation) was established in 1984 pursuant to the provisions of Title 15A, Corporations-Non-Profit, of the New Jersey State Statutes. The purpose of the Foundation is to receive contributions from the public or other entities, engage in such fundraising activities as the members deem appropriate, fund and administer an annual scholarship program to provide scholarships to students pursuing an undergraduate degree with a performing arts concentration at four-year New Jersey colleges and universities, support the study of performing arts in New Jersey and support educational and charitable activities. The Foundation provides free entertainment at the PNC Bank Arts Center and various outreach locations throughout the State of New Jersey for New Jersey's senior citizens, school children, and other deserving residents. The Foundation's members include the Commissioners of the New Jersey Turnpike Authority. The Foundation is qualified as a tax-exempt organization as defined by Section 501(c) (3) of the Internal Revenue Code.

(Dollars shown in thousands)

The condensed statements of net position and statements of revenues, expenses, and changes in net position of the Foundation as of and for the years ended December 31, 2019 and 2018 are as follows:

Consolidated Summary of Net Position

Assets	2019	2018
Current assets	$ 686	613
Total assets	$ 686	613
Liabilities		
Current liabilities	$ 6	6
Total liabilities	$ 6	6
Net Position		
Net position:		
Expendable – restricted by donor agreements	$ 75	—
Unrestricted	605	607
Total net position	$ 680	607

Consolidated Summary of Revenues, Expenses, and Changes in Net Position

	2019	2018
Operating revenues	$ 685	625
Operating expenses	619	744
Operating loss	66	(119)
Nonoperating revenues	7	7
Decrease in net position	73	(112)
Net position as of beginning of year	607	719
Net position as of end of year	$ 680	607

(15) Litigation

The Authority is a party to various legal actions and regulatory reviews arising in the ordinary course of its operations which includes investigation and remediation of existing and projected action level environmental conditions. The Authority is contingently liable under pending lawsuits and claims, relating principally to construction programs and personal injury claims, in which the Authority is named a defendant. The Authority is also subject to regulatory directives or environmental claims by third parties to investigate and/or remediate suspected or known contamination that is claimed to be the Authority's responsibility. The Authority believes the aggregate liability of the Authority under such actions, even if adversely determined, would not have a material adverse effect on the financial position of the Authority; and sufficient funds are expected to be available to satisfy any payments required in connection therewith.

With respect to the Authority generally, soil contamination, groundwater contamination and/or solid waste found on off-site properties, Authority properties, and properties for which the Authority has assumed remediation responsibility, as well as waterway contamination that is alleged to have resulted from operations conducted at Parkway facilities, have resulted in claims against the Authority and may lead to additional claims in the future. Claims for reimbursement of remediation costs and other alleged damages have been asserted or may be forthcoming from other parties responsible for undertaking remediation activities at these properties. As a result, it may be necessary for the Authority to undertake, fund or reimburse others for remediation activities at these properties. The Authority believes the ultimate resolution of these claims will not have a material adverse impact on the financial position of the Authority. As to environmental regulatory compliance expenditures, such costs are also not expected to have a material adverse impact on the financial position of the Authority. See note 10.

The Authority is a defendant in a suit seeking to revoke its rule imposing an administrative fee in connection with collecting unpaid tolls from toll violators of the Turnpike and Parkway was filed with the Authority. In the Petition, the petitioners argue that the administrative fee is unreasonable and therefore not authorized by the Act. The Petition also includes a demand for a refund of the administrative fees collected by the Authority to the extent unreasonable. The Authority continues to conduct discovery and work with experts to defend the reasonableness of the Authority's administrative fee. The Authority intends to vigorously defend its conclusion that the administrative fee is reasonable and consistent with the Act. The Authority believes the ultimate resolution of this matter will not have a material adverse impact on the financial position of the Authority.

The Authority is defending several lawsuits arising from operations of the New Jersey State Police (State Police) assigned to provide police services on the Turnpike and the Parkway pursuant to the Authority's contract with the State Police. The contract includes an indemnification provision requiring the Authority to defend and indemnify State troopers individually, as well as the State Police and the State, against claims related to their conduct in the course of their duties. The Authority, under the indemnification provisions of the contract, may be responsible for a State trooper's liability for negligent acts, but not for intentional wrongful acts or acts beyond the scope of such trooper's employment. The Authority believes the aggregate liability of the Authority under such actions, if adversely determined, would not materially adversely affect the financial position of the Authority and sufficient funds are expected to be available to satisfy any payments required in connection therewith.

(Dollars shown in thousands)

(16) Related Parties

Under the regular course of operations, the Authority enters into various agreements with the State of New Jersey (the State). A summary of transactions with the State in 2019 and 2018 is as follows:

	December 31	
	2019	**2018**
Due from the State - Project reimbursements	$ 86	$ 2,158
Due to the State - Potential unemployment claims	$ 2,943	$ 2,831
Payments to the State - Operating expenses		
State police services	$ 77,291	$ 71,989
PERS billing	17,790	18,469
Other State payments	593	641
Total payments to the State - Operating expenses	$ 95,674	91,099
Payments to the State - Nonoperating expenses		
Transportation Trust Fund Agreement	$ 22,000	22,000
State Transportation Projects Funding Agreement (2016-2021)	154,000	166,500
Feeder Road Maintenance Agreement	3,500	4,500
Total payments to the State - Nonoperating expenses	$ 179,500	193,000

From time to time the Authority enters into various memorandums of agreement with the State that cover cost-sharing or cost-reimbursement work, for various construction projects, including a pass-through of Federal funding. These agreements generally require the Authority to invoice the State for its share of the construction or engineering work performed under the agreements.

The Authority is a participating employer in the State’s Unemployment Insurance program and reimburses the State for unemployment claims made by its eligible former employees.

The Authority has an agreement with the State's Department of Law and Public Safety (State Police) to patrol the Turnpike and the Parkway. As per this agreement the Authority makes payments for the State Police services received. These payments include, but are not limited to salary and overtime expenses, travel expenses, training costs, health benefit costs, fringe benefits and other indirect costs.

The Authority is a participating employer in the State’s PERS plan and annually contributes the employer’s portion as billed by the State (note 11).

Under the terms of an agreement dated April 27, 1984 and amendments dated August 1, 1995 and March 27, 2000, the Authority makes annual payments to the State of New Jersey to assist in transportation purposes. These payments are $22,000 annually and are due until all obligations of the New Jersey Transportation Trust Fund Authority, as set forth in the 2000 Amendment, are paid for or such payment has been provided for. The payments are made from the General Reserve Fund and are subordinate to debt service payments on all outstanding bonds and all other obligations under the Authority's General Bond Resolution.

On June 28, 2016, the Authority entered into a new State Transportation Funding Agreement with the Treasurer of the State of New Jersey. Under this new Funding Agreement, the Authority will make payments to the State of New Jersey to be used for statewide transportation purposes for a five year period which began on July 1, 2016 and ends on June 30, 2021. The agreement was amended in October 2018 to provide an additional one-time $25,000 payment in State fiscal 2019 (Authority calendar year 2019). The Authority has or will make annual payments, payable quarterly, of $204,000 per year in the State fiscal years June 30, 2017 and 2018, $154,000 in the State fiscal year 2019, and $129,000 per year in the State fiscal years 2020, and 2021. The total payments over the five-year period will be $820,000. The payments totaled $154,000 and $166,500 in calendar years 2019 and 2018, respectively. The payments are made from the General Reserve Fund and are subordinate to debt service payments on all outstanding bonds and all other obligations under the Authority's General Bond Resolution.

On September 24, 2019 the Board of Commissioners authorized the Authority to enter into a second amendment of the State Transportation Funding Agreement. The Authority and the State have contingently agreed to fund a portion of the construction of a new Portal North Bridge if New Jersey Transit receives a federal Capital Improvement Grant and upon issuance of bonds by the New Jersey Economic Development Authority. In addition to the quarterly payments of the original agreement as amended by the First Amendment, the Authority shall pay an annual amount of $25,000 to the State upon the issuance of such bonds. As of December 31, 2019, no payments were due under this agreement.

The Authority also made annual payments to the State totaling $3,500 in 2019 and $4,500 in 2018 for feeder road maintenance provided by the New Jersey Department of Transportation. The Authority entered into a Feeder Road Maintenance and Cost Sharing Agreement with the State for the period July 1, 2016 through June 30, 2023, a term of seven years. Under the terms of the Feeder Road Agreement, the State will continue to reconstruct, maintain and repair 280 miles of feeder roads leading to 20 interchanges on the New Jersey Turnpike and 36 interchanges on the Garden State Parkway. The Authority has or will reimburse the State on an annual basis, payable quarterly, $8,000 in the State fiscal year 2017, $5,000 in the State fiscal year 2018, $4,000 in the State fiscal year 2019, $2,750 in the State fiscal year 2020, and $2,500 in State fiscal year 2021, 2022 and 2023, for a total of $27,250 over the seven-year term.

(17) Commitments

The Authority has open commitments related to construction and supervision contracts of approximately $446,160 and $409,757 as of December 31, 2019 and 2018, respectively, which relate to the Authority's construction and capital program. The Authority's construction program includes the $7 Billion Capital Improvement Program that is nearing it's completion and the 2019 Capital Improvement Program. The Authority's capital program includes the Maintenance Reserve, Special Projects, Supplemental Capital Projects and Passaic River Bridge Rehabilitation Program. In addition, the Authority has open commitments related to Revenue Funded construction contracts of approximately $29,215 and $7,025 as of December 31, 2019 and 2018, respectively.

On December 7, 2017, the Authority entered into a 25-year lease agreement with Live Nation Worldwide, Inc. (tenant), which commenced on January 1, 2018, to lease the Amphitheater located at PNC Bank Arts Center. As per the agreement, the tenant is responsible to pay the greater of the minimum fixed rent or a percentage rental amount based on sales for each lease year. In addition, the tenant has agreed to fund capital improvements to the Amphitheater in the amount of $11,000 payable in equal installments of $2,750 starting on March 1, 2018 and ending on March 1, 2021. On August 27, 2019, the agreement was amended. As per the amended agreement, the tenant will make an additional contribution of $4,000 payable in equal installments of $2,000 on September 1, 2019 and on September 1, 2020. As per the agreement, the Authority is committed to deposit an equal amount towards capital improvements within 30 days after the tenant makes its payment. Both the Authority's and the Tenant's payments are deposited into a joint bank account held by the Authority, and as of December 31, 2018 and December 31, 2019, both the tenant and the Authority have made all required deposits.

(18) Service Area Agreements

On September 12, 2017, the Authority entered into a 27 year agreement with HMS Host Tollroads Inc. (HMS) and a 25 year agreement with Sunoco Retail LLC (Sunoco) for the operation and remodeling of service areas along the Turnpike and the Parkway. On the Turnpike, HMS operates the food concessions at all twelve Authority owned service areas and Sunoco provides gasoline, diesel fuel and minor repair services at all service areas. On the Parkway, HMS operates five service areas and Sunoco provides gasoline, diesel fuel and minor repair services at nine service areas.

The agreement allows HMS to provide food services at the Authority service areas in exchange for the greater of a minimum annual guaranteed payment or a percentage of gross sales, and a significant additional contribution to rebuild eight new restaurant buildings and refurbish six existing restaurant buildings. The HMS agreement also provides for it to make annual contributions over the life of the contract for ongoing maintenance and capital improvements to the restaurant facilities. HMS, at its sole cost and expense, is responsible for the repair, maintenance and replacement of all other portions and aspects of the restaurants both structural and non-structural, and whether to the exterior or interior of the restaurants as described in the agreement.

The agreement with Sunoco allows it to provide fuel services at the Authority service areas in exchange for the greater of a minimum annual guaranteed payment or a percentage of gross sales, and a significant additional contribution to rebuild/remodel twenty-one fuel service facilities over the next seven years. Sunoco will also provide an annual contribution over the life of the agreement for ongoing maintenance and capital improvements to the fuel service facilities. Sunoco, at its sole cost and expense, is responsible for the repair, maintenance, and replacement of the service stations.

On December 17, 2019, the Board of the Commissioners authorized the Authority to enter into an amended agreement with HMS Host. The amendment will allow HMS Host to implement certain price changes and amends the Fee and Payment section to adjust the minimum annual guarantee to become the higher of a fixed amount or 88% of the previous year's paid rent.

As per the agreements, four service areas on the Turnpike were rebuilt and reopened on May, June, July, and August 2019. These are the first four service areas of the total of fourteen restaurants and twenty-one fuel service facilities which will be remodeled or refurbished on the Parkway and the Turnpike as part of the HMS and Sunoco contracts in the coming 25 years. In September 2019, the Authority closed three service areas for construction and remodeling, and are scheduled to reopen by Memorial Day 2020. As per the agreements, rebuilding and remodeling work at all the locations are expected to be completed by December 31, 2024.

In addition to the Authority owned service areas, there are two service areas accessible from the Parkway which the Authority does not own or operate. The Authority has entered into two agreements where it collects payments from the owner/operators of the service areas. The terms of the agreements require the Authority to be responsible for snow plowing the access ramps it owns to and from each property and installing and maintaining branded signage on the Parkway near the service areas.

(19) Subsequent Events

On January 28, 2020, the Board of Commissioners authorized the adoption of the Series 2020 Turnpike Revenue Bond Resolution (the Resolution). The Resolution authorizes the issuance of up to $2,719,118 of Turnpike Revenue Bonds. This includes up to $502,500 of new money bonds, up to $1,434,632 of refunding bonds to refinance existing fixed rate debt, and up to $781,986 of refunding bonds to refinance existing variable rate debt. Proceeds of the $502,500 new money bonds will be used to finance the $500 million 2019 Capital Improvement Program. The new money bonds are expected to be issued in part in 2020 and in 2021. The proceeds of the $1,434,633 refunding bonds will be used to potentially refinance the Series 2012B, 2013A, 2013F, 2014A, 2014C, and 2015E Bonds, which are fixed rate bonds, on a tax-exempt or taxable basis for debt service savings. The proceeds of the $781,986 of refunding bonds will be used to refinance the variable rate Series 2015A-H, the 2016B-D, and the 2017C Bonds on a tax-exempt or taxable basis. These variable rate bonds can potentially be refinanced on a fixed rate basis, allowing for the termination of the existing interest rate swap agreements on these bonds for either savings or to reduce bond portfolio risk. Both the fixed rate and variable rate bond refunding (except the Series 2015B Bonds), will only be completed if market conditions are favorable.

On January 30, 2020, the World Health Organization (WHO) announced a global health emergency because of a new strain of the Novel Coronavirus (COVID-19) and the risks to the international community as the virus spreads globally beyond its point of origin. Subsequent to this date, the Governor of the State of New Jersey and the President of the United States have declared State and National emergencies as a result of COVID-19. As a result of the COVID-19 pandemic and several Executive Orders issued by the Governor of the State of New Jersey in response thereto, including, specifically, Executive Orders 107 and 108 issued on March 21, 2020 which ordered all residents of the State to remain at home and the closure of all non-essential retail businesses the State until further notice, there has been a significant decline in traffic and revenue on the Turnpike and Parkway since March 2020.

As these events occurred subsequently to December 31, 2019, the financial position and results of operations as of and for the year ended December 31, 2019 have not been adjusted to reflect the impact of COVID-19. Due to the unprecedented nature of the pandemic, at present it is difficult to accurately estimate the duration and severity of these consequences, as well as their impact on the Authority's financial position for the year ended December 31, 2020 and beyond. However, CDM Smith, the Authority's Traffic Engineering Consultant, has estimated that the COVID-19 impacts will reduce traffic by approximately 168,500 transactions in 2020 as compared to approximately 650,000 in 2019. The Authority is taking prudent measures to maintain a sound financial position in these unprecedented circumstances, and expects to meet its financial covenants for the year ended December 31, 2020.

On March 24, 2020 and on April 16, 2020, the Authority entered into two Memoranda of Understanding (MOU) with HMS. As discussed in note 18, HMS is required to upgrade the Service Area Facilities on both roadways. The MOU's, which were required as a result of the impact of COVID-19 on HMS's revenue, authorize the Authority to make direct payments not to exceed $40,000 to allow for timely completion of the reconstruction work that had already begun at several service areas. The MOU's also require HMS to repay the funds to the Authority in eighteen continuous equal monthly installments after the predetermined payment trigger event occurs.

On April 1, 2020, the Authority issued $33,875 of Turnpike Revenue Bonds, Series 2020A, for the purpose of providing funds, together with other available moneys of the Authority, to refund, purchase and retire all of its outstanding Turnpike Revenue Bonds, Series 2015B.

On May 27, 2020, the Board of Commissioners adopted a toll increase of 36% on the Turnpike and 27% on the Parkway and the $24 Billion Long-Range Capital Plan. The new toll rates will go into effect on September 13, 2020. The Long-Range Capital Plan includes, among other things, a variety of capacity enhancement projects, replacement of the Delaware River Turnpike Bridge and replacement of the Laderman Bridge on the Western Spur of the Turnpike.

On June 18, 2020, The Authority issued $24,935 of Turnpike Revenue Bonds, Series 2020B and $163,230 of Turnpike Revenue Bonds, Series 2020C. The proceeds were used by the Authority to (i) refund and legally defease certain maturities of its currently outstanding Turnpike Revenue Bonds Series 2012B, Series 2013A, Series 2014C, Series 2015A, Series 2015C, Series 2015D and Series 2017C, (ii) to make termination payments required to be made by the Authority in connection with the partial termination of certain interest rate swap agreements, and (iii) to pay the costs of issuance for the Series 2020B Bonds and the Series 2020C Bonds.

Schedule 1

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Required Supplementary Information (Unaudited)

Schedules of Changes in Total OPEB Liability and Related Ratios

December 31, 2019

(In thousands)

		2019	2018
Total OPEB liability			
Service cost	$	46,612	42,623
Interest		60,701	61,150
Differences between expected and actual experience		(23,098)	89,887
Changes of assumptions		(176,958)	(6,371)
Benefit payments, including refunds of member contributions		(45,901)	(42,933)
Net change in total OPEB liability		(138,644)	144,356
Total OPEB liability - beginning		1,740,913	1,596,557
Total OPEB liability - ending	$	1,602,269	1,740,913
Covered payroll	$	136,084	126,689
Total OPEB liability as a percentage of covered payroll		1177%	1374%

Notes

The total OPEB liability is measured at December 31 of the previous year.

As of December 31, 2019 and 2018, no assets are accumulated in a trust to pay related benefits.

Changes in benefit terms – There were no significant changes in benefits for any of the actuarial valuations used to determine required contributions.

Changes in assumptions – Changes in 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:

December 31, 2019: 4.10%

December 31, 2018: 3.44%

In 2019, amounts reflect a 0.25% decrease in the health care cost trend rates for Medical Pre Medicare, Medical Post Medicare and prescription drug.

Information provided for Required Supplementary Information will be provided for ten years as information becomes available in subsequent years.

See accompanying independent auditors' report.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Required Supplementary Information (Unaudited)

Schedules of Proportionate Share, Employer Contributions and Notes

State of New Jersey Public Employees' Retirement System

December 31, 2019

(In thousands)

Schedule of Proportionate Share of Net Pension Liability at June 30 (measurement date)

		2019	2018	2017	2016	2015	2014
Proportion of net pension liability – Local Group		1.8289%	1.8568%	1.8837%	1.8957%	1.9379%	1.9564%
Proportion of net pension liability – Total Plan		0.9515	1.0990	1.1904	1.3225	1.5352	1.6194
Proportionate share of net pension liability	$	329,534	365,599	438,493	561,453	435,015	366,300
Covered payroll (approximate)		135,600	130,100	130,200	129,800	131,100	133,700
Proportionate share of net pension liability as a percentage of covered payroll		243.02%	281.01%	336.78%	432.55%	331.82%	273.97%
Plan fiduciary net position as a percentage of total pension liability		42.04%	40.45%	36.78%	31.20%	38.21%	42.74%

Schedule of Employer Contributions for the year ended December 31

		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Contractually required contributions	$	17,789	18,469	17,450	16,841	16,660	16,129	14,954	18,395	17,923	14,169
Contributions in relation to the contractually required contributions		17,789	18,469	17,450	16,841	16,660	16,129	14,954	18,395	17,923	14,169
Contribution deficiency (excess)	$	—	—	—	—	—	—	—	—	—	—
Covered payroll (approximate)		138,300	131,300	130,400	130,000	130,000	132,600	134,600	135,000	147,000	166,000
Contributions as a percentage of covered payroll		12.86%	14.07%	13.38%	12.95%	12.82%	12.16%	11.11%	13.63%	12.19%	8.54%

Notes

Changes in benefit terms – There were no significant changes in benefits for any of the actuarial valuations used to determine required contributions.
Changes in assumptions – There were no significant changes in assumptions except for the annual change in the discount rate as follows:
June 30, 2019: 6.28%
June 30, 2018: 5.66%
June 30, 2017: 5.00%
June 30, 2016: 3.98%
June 30, 2015: 4.90%
Information provided for Required Supplementary Information will be provided for ten years as information becomes available in subsequent years.

See accompanying independent auditors' report.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Net Position – Reconciliation of Bond Resolution to GAAP

December 31, 2019
(With summarized comparative financial information as of December 31, 2018)

(In thousands)

Assets	**Revenue**	**Construction**	**Maintenance reserve**	**Special project reserve**	**General reserve**	**Debt service**	**Debt reserve**	**Total bond resolution**	**Garden State Arts Foundation**	**GAAP Adjustments (2)**	**Total 2019 GAAP Financials**	**Total 2018 GAAP Financials**
Current assets:												
Cash	$ 145,252	—	1,183	3,370	2,112	—	—	151,917	611	—	152,528	144,298
Restricted cash	—	11,203	—	—	13,554	25	31	24,813	—	—	24,813	25,706
Investments (1)	321,769	—	96,525	84,379	443,308	—	—	945,981	—	—	945,981	899,180
Restricted investments	—	—	—	—	—	511,537	385,705	897,242	—	—	897,242	716,763
Receivables, net of allowance	100,767	—	746	85	249	—	—	101,847	75	—	101,922	61,756
Inventory	22,365	—	—	—	—	—	—	22,365	—	—	22,365	27,400
Due from State of New Jersey	86	—	—	—	—	—	—	86	—	—	86	2,158
Restricted deposits	2,632	—	—	—	17,962	—	—	20,594	—	—	20,594	29,081
Prepaid expenses	9,170	—	—	—	—	—	—	9,170	—	—	9,170	8,982
Interfund	(129,225)	(1,070)	(499)	1,220	136,123	(4,235)	(2,314)	—	—	—	—	—
Total current assets	472,816	10,133	97,955	89,054	613,308	507,327	383,422	2,174,015	686	—	2,174,701	1,915,324
Noncurrent assets:												
Restricted investments	—	478,939	—	—	—	—	215,554	694,493	—	—	694,493	556,994
Long term receivables	—	—	—	—	26	—	—	26	—	—	26	—
Capital assets, net of accumulated depreciation	—	11,073,179	569,313	116,600	325,868	—	—	12,084,960	—	9,485	12,094,445	11,960,282
Total noncurrent assets	—	11,552,118	569,313	116,600	325,894	—	215,554	12,779,479	—	9,485	12,788,964	12,517,276
Total assets	$ 472,816	11,562,251	667,268	205,654	939,202	507,327	598,976	14,953,494	686	9,485	14,963,665	14,432,600
Deferred Outflows												
Deferred outflows:												
Accumulated decrease in fair value of hedging derivatives	$ —	—	—	—	—	—	—	—	—	12,555	12,555	—
Deferred amounts on refunding and derivative instruments	—	—	—	—	—	—	—	—	—	226,271	226,271	253,649
Deferred amount relating to pensions	—	—	—	—	—	—	—	—	—	47,715	47,715	76,452
Deferred amount relating to other postemployment benefit	—	—	—	—	—	—	—	—	—	102,349	102,349	119,504
Total deferred outflows	$ —	—	—	—	—	—	—	—	—	388,890	388,890	449,605
Liabilities												
Current liabilities:												
Accounts payable and accrued expenses	$ 142,958	53,975	12,966	7,281	11,998	—	—	229,178	6	—	229,184	196,888
Due to State of New Jersey	2,943	—	—	—	—	—	—	2,943	—	—	2,943	2,831
Accrued interest payable	—	—	—	—	—	279,122	—	279,122	—	—	279,122	273,740
Unearned revenue	168,624	—	—	—	4,137	—	—	172,761	—	34,344	207,105	164,576
Current portion of bonds payable	—	228,205	—	—	—	—	—	228,205	—	—	228,205	201,025
Current portion of hybrid instrument borrowing	—	—	—	—	—	—	—	—	—	13,735	13,735	13,547
Current portion of other liabilities	4,758	—	37	1,487	4,168	—	—	10,450	—	—	10,450	13,073
Total current liabilities	319,283	282,180	13,003	8,768	20,303	279,122	—	922,659	6	48,079	970,744	865,680
Noncurrent liabilities:												
Bonds payable, net	—	11,324,901	—	—	—	—	—	11,324,901	—	—	11,324,901	11,130,863
Hybrid instrument borrowing	—	—	—	—	—	—	—	—	—	91,115	91,115	104,850
Other liabilities	96,438	—	—	2,877	13,615	—	—	112,930	—	(81)	112,849	113,717
Other postemployment benefit liability	—	—	—	—	121,325	—	—	121,325	—	1,480,944	1,602,269	1,740,913
Interest rate swaps liabilities	—	—	—	—	—	—	—	—	—	29,567	29,567	6,738
Net pension liability	—	—	—	—	—	—	—	—	—	329,534	329,534	365,599
Total noncurrent liabilities	96,438	11,324,901	—	2,877	134,940	—	—	11,559,156	—	1,931,079	13,490,235	13,462,680
Total liabilities	$ 415,721	11,607,081	13,003	11,645	155,243	279,122	—	12,481,815	6	1,979,158	14,460,979	14,328,360
Deferred Inflows												
Deferred inflows:												
Accumulated increase in fair value of hedging derivatives	$ —	—	—	—	—	—	—	—	—	—	—	15,369
Deferred amount relating to pensions	—	—	—	—	—	—	—	—	—	134,426	134,426	135,004
Deferred amount relating to other postemployment benefit	—	—	—	—	—	—	—	—	—	167,876	167,876	5,217
Total deferred inflows	$ —	—	—	—	—	—	—	—	—	302,302	302,302	155,590
Net Position												
Net position:												
Net investment in capital assets	$ —	(44,830)	569,314	116,600	325,868	—	598,976	1,565,928	—	121,421	1,687,349	1,517,792
Restricted under trust agreements	—	—	—	—	17,962	228,205	—	246,167	75	—	246,242	225,094
Unrestricted	57,095	—	84,951	77,409	440,129	—	—	659,584	605	(2,004,506)	(1,344,317)	(1,344,631)
Total net position	$ 57,095	(44,830)	654,265	194,009	783,959	228,205	598,976	2,471,679	680	(1,883,085)	589,274	398,255

(1) Included in investments above at December 31, 2019 is $10,500 the Authority has designated as reserved for national toll interoperability requirements under Federal Law P.L. 112-131, the Moving Ahead for Progress in the 21st Century Act (Map-21)

(2) GAAP Adjustment principally includes the noncash impact of GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations* , GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments* , GASB Statement No. 68, *Accounting and Financial Reporting for Pensions—an amendment of GASB Statement No. 27* , GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions.*

See accompanying independent auditors' report.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Revenues, Expenses, and Changes in Net Position – Reconciliation of Bond Resolution to GAAP

Year ended December 31, 2019
(With summarized comparative financial information for the year ended December 31, 2018)

(In thousands)

	Revenue	Construction	Maintenance reserve	Special project reserve	General reserve	Debt service	Debt reserve	Total bond resolution	Garden State Arts Foundation	GAAP Adjustments (1)	Total 2019 GAAP Financials	Total 2018 GAAP Financials
Operating revenues:												
Toll revenue	$ 1,612,268	—	—	—	—	—	—	1,612,268	—	—	1,612,268	1,612,326
E-ZPass fees	80,329	—	—	—	—	—	—	80,329	—	—	80,329	84,417
Concession revenue	33,104	—	—	—	—	—	—	33,104	—	—	33,104	36,192
Miscellaneous revenue	16,117	—	—	—	—	—	—	16,117	685	1,422	18,224	20,068
Total operating revenues	1,741,818	—	—	—	—	—	—	1,741,818	685	1,422	1,743,925	1,753,003
Operating expenses:												
Maintenance of roadway, buildings and equipment	215,506	—	—	9,629	24,113	—	—	249,248	—	(1,988)	247,260	274,118
Toll collection	156,309	—	—	—	4,409	—	—	160,718	—	(1,295)	159,423	170,603
State police and traffic control	94,802	—		883	810	—	—	96,495	—	(404)	96,091	93,573
Technology	19,460	—	—	1,088	563	—	—	21,111	—	(408)	20,703	26,417
General administrative costs	44,858	—	—	307	5,888	—	—	51,053	619	1,180	52,852	51,471
Depreciation	—	313,565	44,506	10,652	12,666	—	—	381,389	—	—	381,389	326,616
Total operating expenses	530,935	313,565	44,506	22,559	48,449	—	—	960,014	619	(2,915)	957,718	942,798
Operating income (loss)	1,210,883	(313,565)	(44,506)	(22,559)	(48,449)	—	—	781,804	66	4,337	786,207	810,205
Nonoperating revenues (expenses):												
Build America Bonds subsidy	76,725	—	—	—	—	—	—	76,725	—	—	76,725	76,439
Federal and State reimbursements	1,006	—	—	—	—	—	—	1,006	—	—	1,006	7
Payments to the State of New Jersey	—	—	—	—	(179,500)	—	—	(179,500)	—	—	(179,500)	(193,000)
Interest expense, Turnpike Revenue Bonds	—	56,386	—	—	—	(596,076)	—	(539,690)	—	(8,736)	(548,426)	(524,796)
Other bond expenses	—	(1,306)	—	—	—	—	—	(1,306)	—	—	(1,306)	(11)
Loss on disposal of capital assets	—	—	—	—	—	—	—	—	—	—	—	(597)
Investment income	4,155	13,430	2,540	2,139	10,360	5,927	12,865	51,416	7	—	51,423	36,868
Arts Center	4,690	—	—	—	—	—	—	4,690	—	—	4,690	4,453
Total nonoperating revenues (expenses), net	86,576	68,510	2,540	2,139	(169,140)	(590,149)	12,865	(586,659)	7	(8,736)	(595,388)	(600,637)
Income before capital contributions and interfund transfers	1,297,459	(245,055)	(41,966)	(20,420)	(217,589)	(590,149)	12,865	195,145	73	(4,399)	190,819	209,568
Capital contributions	—	35,766	—	—	200	—	—	35,966	—	(35,766)	200	200
Income before interfund transfers	1,297,459	(209,289)	(41,966)	(20,420)	(217,389)	(590,149)	12,865	231,111	73	(40,165)	191,019	209,768
Interfund transfers	(1,297,459)	226,025	128,928	39,161	298,661	617,329	(12,645)	—	—	—	—	—
Net change in fund balance/change in net position	—	16,736	86,962	18,741	81,272	27,180	220	231,111	73	(40,165)	191,019	209,768
Net position (deficit) – beginning of year	57,095	(61,566)	567,303	175,268	702,687	201,025	598,756	2,240,568	607	(1,842,920)	398,255	1,248,013
Cumulative effect of adoption of GASB 75	—	—	—	—	—	—	—	—	—	—	—	(1,059,526)
Net position (deficit) – end of year	$ 57,095	(44,830)	654,265	194,009	783,959	228,205	598,976	2,471,679	680	(1,883,085)	589,274	398,255

(1) GAAP Adjustment principally includes the noncash impact of GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*, GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments*, GASB Statement No. 68, *Accounting and Financial Reporting for Pensions—an amendment of GASB Statement No. 27*, GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions.*

See accompanying independent auditors’ report.

Schedule 5

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Cash Flows – Reconciliation of Bond Resolution to GAAP

Year ended December 31, 2019
(With summarized comparative financial information for the year ended December 31, 2018)

(In thousands)

	Revenue	Construction	Maintenance reserve	Special project reserve	General reserve	Debt service	Debt reserve	Total bond resolution	Garden State Arts Foundation	GAAP Adjustments (1)	Total 2019 GAAP Financials	Total 2018 GAAP Financials
Cash flows from operating activities:												
Receipts from customers and other operating activities	$ 1,751,089	—	(746)	—	—	—	—	1,750,343	610	35,766	1,786,719	1,752,619
Payments to suppliers	(217,793)	—	—	(7,590)	(32,425)	—	—	(257,808)	(620)	—	(258,428)	(312,636)
Payments to employees	(171,888)	—	—	—	—	—	—	(171,888)	—	—	(171,888)	(167,750)
Payments for self insured health benefits claims	(86,004)	—	—	—	—	—	—	(86,004)	—	—	(86,004)	(75,330)
Net cash provided by (used in) operating activities	1,275,404	—	(746)	(7,590)	(32,425)	—	—	1,234,643	(10)	35,766	1,270,399	1,196,903
Cash flows from noncapital financing activities:												
Receipts from Federal and State reimbursements	1,006	—	—	—	—	—	—	1,006	—	—	1,006	8,915
Payments to State of New Jersey	—	—	—	—	(179,500)	—	—	(179,500)	—	—	(179,500)	(193,000)
Proceeds from Arts Center	4,690	—		—	—	—	—	4,690	—	—	4,690	4,453
Net cash provided by (used in) noncapital financing activities	5,696	—	—	—	(179,500)	—	—	(173,804)	—	—	(173,804)	(179,632)
Cash flows from capital and related financing activities:												
Proceeds acquired from new capital debt	—	478,629	—	—	—	—	—	478,629	—	—	478,629	—
Purchases and sales of capital assets, net	—	(275,129)	(117,800)	(28,433)	(78,648)	—	—	(500,010)	—	—	(500,010)	(473,839)
Principal paid on capital debt	—	(201,025)		—	—	—	—	(201,025)	—	—	(201,025)	(218,475)
Proceeds from Build America Bonds subsidy	38,301	—	—	—	—	—	—	38,301	—	—	38,301	76,439
Interest paid on capital debt	—	—	—	—	—	(590,694)	—	(590,694)	—	—	(590,694)	(561,583)
Payments for bond expenses	—	(1,306)	—	—	—	—	—	(1,306)	—	—	(1,306)	(11)
Proceeds from capital contributions	—	35,766	—	—	200	—	—	35,966	—	(35,766)	200	200
Interfund Transfers related to capital and related financing activities	(1,301,080)	225,696	129,516	38,487	301,827	618,193	(12,639)	—	—	—	—	—
Net cash provided by (used in) capital and related financing activities	(1,262,779)	262,631	11,716	10,054	223,379	27,499	(12,639)	(740,139)	—	(35,766)	(775,905)	(1,177,269)
Cash flows from investing activities:												
Purchases of investments	(3,890,643)	(3,023,470)	(531,538)	(239,485)	(2,324,967)	(878,751)	(1,249,258)	(12,138,112)	—	—	(12,138,112)	(10,082,565)
Sales and maturities of investments	3,882,637	2,744,317	514,624	234,186	2,306,198	846,033	1,249,047	11,777,042	—	—	11,777,042	10,135,458
Interest received	4,213	8,244	3,060	2,631	11,477	5,226	12,858	47,709	8	—	47,717	33,907
Net cash (used in) provided by investing activities	(3,793)	(270,909)	(13,854)	(2,668)	(7,292)	(27,492)	12,647	(313,361)	8	—	(313,353)	86,800
Net increase (decrease) in cash	14,528	(8,278)	(2,884)	(204)	4,162	7	8	7,339	(2)	—	7,337	(73,198)
Cash and restricted cash – beginning of year	130,724	19,481	4,067	3,574	11,504	18	23	169,391	613	—	170,004	243,202
Cash and restricted cash – end of year	$ 145,252	11,203	1,183	3,370	15,666	25	31	176,730	611	—	177,341	170,004
Reconciliation of operating income (loss) to net cash provided by (used in) operating activities:												
Operating income (loss)	$ 1,210,883	(313,565)	(44,505)	(22,559)	(48,449)	—	—	781,805	65	4,337	786,207	810,205
Adjustments to reconcile operating income (loss) to net cash provided by (used in) operating activities:												
Depreciation expense	—	313,565	44,505	10,652	12,667	—	—	381,389	—	—	381,389	326,616
Changes in assets and liabilities:												
Receivables	(617)	—	(746)	(55)	1,798	—	—	380	(75)	—	305	(2,270)
Inventory	5,034	—	—	—	—	—	—	5,034	—	—	5,034	(4,325)
Prepaid expenses	(219)	—	—	—	—	—	—	(219)	—	—	(219)	(69)
Accounts payable and accrued expenses	22,425	—	—	2,188	(933)	—	—	23,680	—	—	23,680	(40,750)
Unearned revenue	9,888	—	—	—	(1,703)	—	—	8,185	—	34,344	42,529	12,878
Other liabilities	28,010	—	—	2,183	(10,804)	—	—	19,389	—	(22,245)	(2,856)	25,092
Other postemployment benefit liability	—	—	—	—	15,000	—	—	15,000	—	(153,644)	(138,644)	187,290
Net pension liability	—	—	—	—	—	—	—	—	—	(36,065)	(36,065)	(72,894)
Deferred outflows of resources related to pension	—	—	—	—	—	—	—	—	—	28,737	28,737	33,926
Deferred inflows of resources related to pension	—	—	—	—	—	—	—	—	—	(578)	(578)	35,737
Deferred outflows relating to other postemployment benefit	—	—	—	—	—	—	—	—	—	17,155	17,155	(119,504)
Deferred inflows relating to other postemployment benefit	—	—	—	—	—	—	—	—	—	162,659	162,659	5,217
Pollution remediation liability	—	—	—	—	—	—	—	—	—	1,066	1,066	(246)
Net cash provided by (used in) operating activities	$ 1,275,404	—	(746)	(7,591)	(32,424)	—	—	1,234,643	(10)	35,766	1,270,399	1,196,903

(1) GAAP Adjustment principally includes the noncash impact of GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*, GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments*, GASB Statement No. 68, *Accounting and Financial Reporting for Pensions—an amendment of GASB Statement No. 27*, GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions.*

See accompanying independent auditors' report.

Schedule 6

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Net Revenue Requirement

Years ended December 31, 2019 and 2018

(In thousands)

		2019	2018
Test 1:			
Total operating revenues - bond resolution	$	1,741,818	1,752,378
Build America Bonds subsidy		76,725	76,439
Federal and State reimbursements		1,006	7
Total investment income - bond resolution		51,416	36,861
Less earnings on construction investments		(13,430)	(6,016)
Fair market value adjustments		(220)	74
Arts center		4,390	4,343
Total pledged revenues		1,861,705	1,864,086
Less revenue operating expenses - revenue fund		(530,935)	(542,067)
Net revenue available for debt service		1,330,770	1,322,019
Less net revenue requirements:			
Interest expense – debt service		(596,076)	(587,453)
Principal payment – debt service		(228,205)	(201,025)
Revenue transfer to maintenance reserve		(131,468)	(119,086)
Revenue transfer to special project reserve		(41,300)	(40,490)
Excess net revenues	$	333,721	373,965
Test 2:			
Total operating revenues - bond resolution	$	1,741,818	1,752,378
Build America Bonds subsidy		76,725	76,439
Federal and State reimbursements		1,006	7
Total investment income - bond resolution		51,416	36,861
Less earnings on construction investments		(13,430)	(6,016)
Fair market value adjustments		(220)	74
Arts center		4,390	4,343
Total pledged revenues		1,861,705	1,864,086
Less revenue operating expenses - revenue fund		(530,935)	(542,067)
Net revenue available for debt service		1,330,770	1,322,019
Less 1.2 times aggregate debt service		(989,137)	(946,174)
Excess net revenues	$	341,633	375,845
Debt service coverage ratio		1.61	1.68

See accompanying independent auditors' report.

Schedule 7A

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Investments

December 31, 2019

(In thousands)

	Interest rate	Maturity		Par value	Carrying value
Revenue:					
Certificate of deposit	1.85%-2.69%	3/27/2020-11/16/2020	$	125,000	126,350
Commercial paper	1.89-2.53	3/27/2020-3/31/2020		55,946	55,668
Federal agency note	1.20-1.54	1/7/2020-2/14/2020		84,127	84,097
U.S. Treasury bill	1.00-1.51	1/9/2020-1/30/2020		55,671	55,654
				320,744	321,769
Construction:					
Certificate of deposit	2.08%-2.72%	3/25/2020-9/24/2020		147,140	149,920
Commercial paper	1.77-1.96	5/4/2020-8/3/2020		130,300	129,186
Federal agency note	2.35-2.40	1/14/2020-3/26/2020		150,000	149,542
State of New Jersey Cash Management Fund	1.76	1/2/2020		25,205	25,206
U.S. Treasury notes	1.75-1.88	11/15/2020-12/15/2020		25,000	25,085
				477,645	478,939
Maintenance reserve:					
Federal agency note	1.49%-1.57%	1/3/2020-1/30/2020		96,643	96,525
				96,643	96,525
Special project reserve:					
Commercial paper	1.69%-1.76%	3/5/2020-05/22/2020		10,069	10,006
Federal agency note	1.45-1.57	1/3/2020-8/20/2020		74,514	74,373
				84,583	84,379
General reserve:					
Certificate of deposit	1.75%	11/27/2020		29,550	29,640
Commercial paper	1.74-1.87	3/23/2020-6/30/2020		199,500	198,181
Federal agency note	1.20-1.57	1/10/2020-3/24/2020		215,823	215,487
				444,873	443,308
Debt service:					
U.S. Treasury bill	2.24%	1/2/2020		492,261	492,236
Federal agency note	1.33-2.45	1/2/2020		19,302	19,301
				511,563	511,537
Debt reserve:					
Certificate of deposit	1.73%-3.29%	1/13/2020-4/25/2023		427,147	428,772
Commercial paper	1.90-2.21	2/27/2020-5/11/2020		16,785	16,720
Federal agency note	1.63-2.50	4/24/2020-11/25/2024		155,337	155,767
				599,269	601,259
Total			$	2,535,320	2,537,716

Above is the detail of investments listed on the Schedule of Net Position – Reconciliation of Bond Resolution to GAAP (Schedule 3) for Total Bond Resolution.

See accompanying independent auditors' report.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Investments

December 31, 2018

(In thousands)

	Interest rate	Maturity	Par value	Carrying value	
Revenue:					
Certificate of deposit	2.57%-3.08%	7/26/2019-11/15/2019	$ 85,000	85,705	
Commercial paper	2.56-2.67	3/27/2019-3/29/2019	86,943	86,400	
Federal agency note	2.30-2.39	1/3/2019-1/31/2019	30,149	30,145	
U.S. Treasury bill	2.00-2.33	1/3/2019-3/28/2019	111,607	111,571	
			313,699	313,821	
Construction:					
Commercial paper	2.36%-2.65%	1/16/2019-3/20/2019	45,000	44,843	
Federal agency note	2.00-2.34	1/3/2019-2/22/2019	75,000	74,905	
State of New Jersey Cash Management Fund	2.40	1/2/2019	49,850	49,854	
U.S. Treasury bill	1.97	1/3/2019	25,000	24,997	
			194,850	194,599	
Maintenance reserve:					
Commercial paper	2.44%-2.80%	3/18/2019-9/5/2019	50,745	50,343	
Federal agency note	2.39-2.52	1/31/2019-12/26/2019	24,248	23,796	
U.S. Treasury bill	2.08-2.30	1/3/2019-2/7/2019	6,000	5,993	
			80,993	80,132	
Special project reserve:					
Commercial paper	2.36%-2.62%	3/29/2019-6/4/2019	47,300	46,912	
Federal agency note	2.32-2.50	6/4/2019-12/24/2019	27,300	26,672	
U.S. Treasury bill	2.14-2.34	1/3/2019-3/7/2019	6,000	5,987	
			80,600	79,571	
General reserve:					
Certificate of deposit	2.77%	9/27/2019	31,500	31,731	
Commercial paper	2.33-2.92	2/6/2019-9/3/2019	132,714	131,516	
Federal agency note	2.23-2.53	1/17/2019-09/27/2019	192,991	192,325	
U.S. Treasury bill	2.15-2.35	3/7/2019-6/20/2019	70,562	70,084	
			427,767	425,656	
Debt service:					
Federal agency note	1.77%-2.18%	1/2/2019	395,102	395,080	
U.S. Treasury bill	1.87-2.25	1/2/2019	83,044	83,039	
			478,146	478,119	
Debt reserve:					
Certificate of deposit	1.63%-3.29%	4/11/2019-4/25/2023	350,003	350,870	
Commercial paper	1.44	1/2/2019	150,000	151,075	(1)
Federal agency note	2.50-3.25	4/27/2020-5/24/2023	99,000	99,094	
			599,003	601,039	
Total			$ 2,175,058	2,172,937	

Above is the detail of investments listed on the Schedule of Net Position – Reconciliation of Bond Resolution to GAAP (Schedule 3) for Total Bond Resolution.

(1) Under a $150,000 notional value forward delivery agreement, Deutsche Bank delivers investment securities to the Debt Reserve Fund held by the Co-Trustee, U.S.Bank, and pays the Authority a fixed interest rate of 1.44%. The agreement expires on July 1, 2019. The actual investment securities delivered by Deutsche Bank to U.S.Bank for deposit into the Debt Reserve Fund are held in the Authority's name and are reflected as the actual securities held in the schedule above.

See accompanying independent auditors' report.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Depositories

December 31, 2019 and 2018

(In thousands)

	2019 Book balance	2019 Bank balance	2019 Market value of securities pledged to secure deposits	2018 Book balance	2018 Bank balance	2018 Market value of securities pledged to secure deposits
JP Morgan Chase:						
Revenue	$ 126,645	110,970		96,093	88,260	
Construction	7,129	7,382		18,822	18,823	
Maintenance reserve	1,183	1,183		4,067	4,067	
General Reserve	10,542	10,541		5,684	5,684	
	145,499	130,076	136,597	124,666	116,834	120,445
Bank of America:						
Revenue	14,681	16,218		25,419	26,190	
General Reserve	—	—		500	500	
	14,681	16,218	18,411	25,919	26,690	42,568
Wells Fargo:						
Revenue	2,852	1,768		7,923	5,934	
Special project reserve	3,370	3,439		3,574	3,663	
General reserve	5,124	5,160		5,320	5,469	
	11,346	10,367	29,393	16,817	15,066	24,661
Bank of New York Mellon:						
Revenue	496	502		666	666	
	496	502	1,067	666	666	463
TD Bank, NA:						
Revenue	252	344		251	409	
	252	344	292	251	409	785
Investors Bank:						
Construction	—	—		2	2	
	—	—	—	2	2	— (1)
Total Subject to Pledged Securities	172,274	157,507	$ 185,760	168,321	159,667	$ 188,922
Bank of New York Mellon – Trust:						
Construction:	4,074	4,074		657	845	
General reserve	—	—		—	—	
Debt service	25	19		18	18	
	4,099	4,093 (2)		675	863 (2)	
US Bank:						
Debt Reserve	31	31		23	23	
	31	31		23	23	
Toll collection and other imprest funds:						
Revenue	326	—		372	—	
	326 (3)	—		372 (3)	—	
Total subject to bond resolution	176,730	161,631		169,391	160,553	
Investors Bank:						
Garden State Arts Center Foundation	426	434		429	474	
	426	434 (4)		429	474 (4)	
Northfield Bank:						
Garden State Arts Center Foundation	185	185		184	184	
	185	185 (4)		184	184 (4)	
	$ 177,341	162,250		170,004	161,211	

(1) As of December 31, 2018, the market value of the securities was below the book/bank balance of deposits. On January 5, 2018, additional collateral was posted so that once again the market value of the pledged securities exceeded the book/bank balance.
(2) Funds held by Trustee are not subject to collateral requirements, under the Bond Resolution.
(3) Cash on hand, not at bank.
(4) Garden State Arts Foundation bank account balances are not subject to the collateral posting requirements of the Bond Resolution.

See accompanying independent auditors' report.

Schedule 9

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Cost of Investment in Facilities

December 31, 2019
(With summarized comparative financial information for the year ended December 31, 2018)

(In thousands)

	Completed construction funds	$7 Billion Capital Improvement Program	Construction funded by revenue	2019 Capital Improvement Plan	Maintenance reserve	Special project reserve	General reserve	GAAP Adjustments	2019 Total	2018 Total
Land	$ 660,555	165,078	—	—	—	—	8,128	—	833,761	833,761
Construction-In-Progress	—	385,005	11,978	17,093	12,041	34,010	102,884	9,485	572,496	535,904
Roadways	3,185,141	2,925,489	—	—	329,063	2,288	51,428	—	6,493,409	6,382,453
Bridges	1,910,858	3,445,113	—	—	430,368	64	40,213	—	5,826,616	5,712,903
Buildings	375,090	669,239	—	—	182	23,184	101,120	—	1,168,815	936,696
Equipment	552,817	820,009	—	—	7,708	138,344	131,971	—	1,650,849	1,655,108
Cost of investment in facilities	6,684,461	8,409,933	11,978	17,093	779,362	197,890	435,744	9,485	16,545,946	16,056,825
Accumulated depreciation	(3,118,686)	(931,600)	—	—	(210,049)	(81,290)	(109,876)	—	(4,451,501)	(4,096,543)
Capital assets, net of accumulated depreciation	$ 3,565,775	7,478,333	11,978	17,093	569,313	116,600	325,868	9,485	12,094,445	11,960,282

Completed construction funds:	
Original turnpike extensions and additional lanes	$ 57,678
Revenues invested in facilities	36,944
1966 Turnpike Improvement	142,902
1971 Turnpike Improvement	15,309
1973 Improvement and Funding Program	25,173
1985-1990 Widening Project	293,888
Business Plan for the 90's	732,937
Former NJHA Construction	486,674
2000 Construction Fund	1,173,524
2003 Construction Fund	15,421
2004 Construction Fund	381,001
2005 Construction Fund	69,706
2008/2009 Bond anticipation note	134,618
	$ 3,565,775

See accompanying independent auditors' report.

Schedule 10A

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Bond Indebtedness

December 31, 2019

(In thousands)

	Amount outstanding December 31, 2018	Refunded or acquired and canceled in current year	Mandatory redemption/ sinking fund installments	Debt issuance	Amortization of premiums and discounts	Amount outstanding December 31, 2019
Turnpike revenue bonds:						
Series 2004C-2	$ 132,850	—	—	—	—	132,850
Series 2005A	173,650	—	—	—	—	173,650
Series 2005B	32,500	—	(32,500)	—	—	—
Series 2005D1-D4	208,735	—	—	—	—	208,735
Series 2009F	1,375,000	—	—	—	—	1,375,000
Series 2009H	36,695	—	—	—	—	36,695
Series 2010A	1,850,000	—	—	—	—	1,850,000
Series 2012A	15,000	—	—	—	—	15,000
Series 2012B	804,435	—	(158,435)	—	—	646,000
Series 2013A	312,100	—	(5,620)	—	—	306,480
Series 2013F	90,880	—	—	—	—	90,880
Series 2014A	1,000,000	—	—	—	—	1,000,000
Series 2014C	201,860	—	(3,130)	—	—	198,730
Series 2015A	92,500	—	—	—	—	92,500
Series 2015B	50,000	—	—	—	—	50,000
Series 2015C	43,750	—	—	—	—	43,750
Series 2015D	43,750	—	—	—	—	43,750
Series 2015E	750,000	—	—	—	—	750,000
Series 2015F	72,350	—	—	—	—	72,350
Series 2015G	25,000	—	—	—	—	25,000
Series 2015H	48,235	—	—	—	—	48,235
Series 2016A	149,995	—	—	—	—	149,995
Series 2016B	75,025	—	—	—	—	75,025
Series 2016C	50,015	—	—	—	—	50,015
Series 2016D	50,000	—	—	—	—	50,000
Series 2017A	600,000	—	—	—	—	600,000
Series 2017B	646,765	—	—	—	—	646,765
Series 2017C	400,000	—	—	—	—	400,000
Series 2017D	179,375	—	—	—	—	179,375
Series 2017E	359,680	—	—	—	—	359,680
Series 2017F	167,845	—	(1,340)	—	—	166,505
Series 2017G	726,640	—	—	—	—	726,640
Series 2019A	—	—	—	449,110	—	449,110
	10,764,630	—	(201,025)	449,110	—	11,012,715
Premiums and discounts, net	567,258	—	—	29,519	(56,386)	540,391
	$ 11,331,888	—	(201,025)	478,629	(56,386)	11,553,106

See accompanying independent auditors’ report.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Bond Indebtedness

December 31, 2018

(In thousands)

	Amount outstanding December 31, 2017	Refunded or acquired and canceled in current year	Mandatory redemption/ sinking fund installments	Debt issuance	Amortization of premiums and discounts	Amount outstanding December 31, 2018
Turnpike revenue bonds:						
Series 2004C-2	132,850	—	—	—	—	132,850
Series 2005A	173,650	—	—	—	—	173,650
Series 2005B	32,500	—	—	—	—	32,500
Series 2005D1-D4	208,735	—	—	—	—	208,735
Series 2009F	1,375,000	—	—	—	—	1,375,000
Series 2009G	19,125	—	(19,125)	—	—	—
Series 2009H	36,695	—		—	—	36,695
Series 2010A	1,850,000	—	—	—	—	1,850,000
Series 2012A	15,000	—	—	—	—	15,000
Series 2012B	804,435	—	—	—	—	804,435
Series 2013A	317,450	—		—	—	317,450
Series 2013B	52,500	—	(52,500)	—	—	—
Series 2013C	141,500	—	(141,500)	—	—	—
Series 2013F	90,880	—	—	—	—	90,880
Series 2014A	1,000,000	—	—	—	—	1,000,000
Series 2014C	201,860	—	—	—	—	201,860
Series 2015A	92,500	—	—	—	—	92,500
Series 2015B	50,000	—	—	—	—	50,000
Series 2015C	43,750	—	—	—	—	43,750
Series 2015D	43,750	—	—	—	—	43,750
Series 2015E	750,000	—	—	—	—	750,000
Series 2015F	72,350	—	—	—	—	72,350
Series 2015G	25,000	—	—	—	—	25,000
Series 2015H	48,235	—	—	—	—	48,235
Series 2016A	149,995	—	—	—	—	149,995
Series 2016B	75,025	—	—	—	—	75,025
Series 2016C	50,015	—	—	—	—	50,015
Series 2016D	50,000	—	—	—	—	50,000
Series 2017A	600,000	—	—	—	—	600,000
Series 2017B	646,765	—	—	—	—	646,765
Series 2017C	400,000	—	—	—	—	400,000
Series 2017D	179,375	—	—	—	—	179,375
Series 2017E	359,680	—	—	—	—	359,680
Series 2017F	167,845	—	—	—	—	167,845
Series 2017G	726,640	—	—	—	—	726,640
	10,983,105	—	(213,125)	—	—	10,769,980
Premiums and discounts, net	627,624	—	—	—	(60,366)	567,258
	$ 11,610,729	—	(213,125)	—	(60,366)	11,337,238

See accompanying independent auditors' report.

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

Schedule of Refunded Bond and Note Indebtedness

December 31, 2019
(With summarized comparative financial information as of December 31, 2018)

(In thousands)

Note:
As of December 31, 2019 and 2018, refunded bond and note indebtedness which is still outstanding in fully collateralized escrow accounts is as follows:

Refunded series		Refunded amount	Matured/ redeemed	2019 outstanding	2018 outstanding
Parkway revenue bonds:					
Series 1989, Serial bonds 5.75% Redemption January 1, 2018 through January 1, 2019	$	35,080	(35,080)	—	18,050
Turnpike revenue bonds:					
Series 2009E Turnpike Revenue Bonds, redemption January 1, 2019		300,000	(300,000)	—	300,000
Series 2009H Turnpike Revenue Bonds, redemption January 1, 2019		269,475	(269,475)	—	269,475
Series 2009I Turnpike Revenue Bonds, redemption January 1, 2020		178,005	—	178,005	178,005
Series 2012A Turnpike Revenue Bonds, redemption January 1, 2022		126,255	—	126,255	126,255
Series 2013A Turnpike Revenue Bonds, redemption January 1, 2020 through July 1, 2022		1,072,505	—	1,072,505	1,072,505
Total	$	1,981,320	(604,555)	1,376,765	1,964,290

See accompanying independent auditors’ report.

Schedule 11A

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

NEW JERSEY TURNPIKE

Schedule of Toll Revenue

Years ended December 31, 2019 and 2018

(Unaudited)

(In thousands)

		2019		2018	
Class	**Description**	**Toll revenue**	**Number of vehicles**	**Toll revenue**	**Number of vehicles**
1	Passenger car, motorcycle, taxi or hearse, light truck	$ 839,516	233,454	825,876	230,497
2	Vehicles having two axles other than type described under Class 1	67,113	9,369	64,385	9,016
3	Vehicle (vehicles), single or in combination, having three axles	39,240	4,421	30,918	3,895
4	Vehicle (vehicles), single or in combination, having four axles	34,311	2,974	35,401	3,018
5	Vehicle (vehicles), single or in combination, having five axles	215,236	15,080	230,467	15,927
6	Vehicle (vehicles), single or in combination, having six or more axles	11,844	586	12,991	632
7	Buses having two axles	2,019	516	2,316	465
8	Buses having three axles	13,935	1,372	12,941	1,298
	Nonrevenue vehicles	—	1,333		1,556
		1,223,214	269,105	1,215,295	266,304
	Nonrevenue vehicles	—	(1,333)	—	(1,556)
	Toll adjustments and discounts	(4,407)	—	(4,423)	—
	Net uncollected tolls	(42,331)	—	(31,548)	—
		$ 1,176,476	267,772	1,179,324	264,748

See accompanying independent auditors' report.

Schedule 11B

NEW JERSEY TURNPIKE AUTHORITY
(A Component Unit of the State of New Jersey)

GARDEN STATE PARKWAY

Schedule of Toll Revenue

Years ended December 31, 2019 and 2018

(Unaudited)

(In thousands)

			2019		2018	
Class	**Description**		**Toll revenue**	**Number of vehicles**	**Toll revenue**	**Number of vehicles**
1	Passenger car, motorcycle, taxi or hearse, light truck	$	426,261	381,110	422,778	384,509
2	Vehicles having two axles other than type described under Class 1		3,009	1,413	2,279	997
3	Vehicle (vehicles), single or in combination, having three axles		3,386	1,096	3,408	1,108
4	Vehicle (vehicles), single or in combination, having four axles		3,926	913	3,914	908
5	Vehicle (vehicles), single or in combination, having five axles		2,886	614	2,843	596
6	Vehicle (vehicles), single or in combination, having six or more axles		140	27	129	23
7	Buses having two axles		1,919	684	1,866	714
8	Buses having three axles		2,723	893	2,534	936
	Nonrevenue vehicles		—	1,575		1,566
			444,250	388,325	439,751	391,357
	Nonrevenue vehicles		—	(1,575)	—	(1,566)
	Toll adjustments and discounts		(347)	—	(341)	—
	Net uncollected tolls		(8,111)	—	(6,408)	—
		$	435,792	386,750	433,002	389,791

See accompanying independent auditors' report.

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APPENDIX B

2020 DRAW DOWN LETTER AND SUPPLEMENT, AND REPORT OF TRAFFIC ENGINEER

77 Hartland Street, Suite 201
East Hartford, CT 06108
tel: 860-529-7615
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January 8, 2021

Ms. Donna Manuelli
Chief Financial Officer
New Jersey Turnpike Authority
P.O. Box 5042
Woodbridge, NJ 07095

Subject: Supplement to the October 14, 2020 New Jersey Turnpike System Draw Down Letter

Dear Ms. Manuelli:

CDM Smith's most recent transactions and toll revenue forecasts for the New Jersey Turnpike Authority (NJTA) were developed and reported on in our *2020 New Jersey Turnpike System Draw Down Letter*, dated October 14, 2020 (the October 2020 Draw Down Letter). That letter provided transactions and toll revenue forecasts for both the New Jersey Turnpike (the Turnpike) and the Garden State Parkway (the Parkway) through 2030, and included estimated impacts related to COVID-19 as well as a one-time toll increase on September 13, 2020 and annual toll increases beginning in January 2022. A detailed description of all underlying COVID-19 and toll increase impact assumptions is provided in the October 2020 Draw Down Letter.

Actual transactions and toll revenue data through August 2020 were available as input to the forecasts that were developed for the October 2020 Draw Down Letter. Those monthly figures were presented in Tables 1 through 5 of that letter. They included actual monthly transactions and toll revenue data for passenger cars and commercial vehicles for both the Turnpike and the Parkway. Three additional months of actual transactions and toll revenue data are now available (September, October, and November 2020). This *Supplement to the October 2020 Draw Down Letter* (Supplement Letter) provides the same Tables 1 through 5, updated to reflect actual monthly transactions and toll revenue data through November 2020.

Finally, Tables 6 through 8 of this Supplement Letter compare the three additional months of actual transactions and toll revenue data (September, October, and November 2020) to CDM Smith's estimates of those same three months that were included in the October 2020 Draw Down Letter. As will be shown below, the differences between actual transactions and toll revenue for those three months and those estimated by CDM Smith are relatively low. As such, we consider the transactions and toll revenue forecasts provided in the October 2020 Draw Down Letter to remain valid.

Monthly Transactions and Toll Revenue Trends

Tables 1 through 5 in this letter are the same as those from CDM Smith's October 2020 Draw Down Letter, with the only difference being the addition of September, October, and November 2020 transactions and toll revenue data to the tables below. On September 13, 2020 a 36% toll increase was implemented on the Turnpike, while a 27% toll increase was implemented on the Parkway. Thus, the tables below now include two and a half months of actual data with impacts resulting from that toll increase.

As shown in Table 1, negative impacts related to the COVID-19 pandemic reduced total Turnpike transactions by 63.1% in April 2020, the first full month of the impact in New Jersey. This negative impact has been gradually decreasing each month, such that by August 2020 the negative impact was reduced to just 21.7%. In September 2020, the negative impact reduced further, to just 18.4%, despite the 36% toll increase on September 13. October Turnpike transactions were a bit more negative than those for September, decreasing by 19.3% compared to the same month in 2019. Of course, October data included the first full month of the 36% toll increase, which accounts for the slightly higher negative comparisons. November transactions suffered a greater year-over-year drop off (22.8%) than in October, likely due to depressed Thanksgiving holiday travel as a result of increasing COVID-19 infection rates and subsequent public health recommendations to limit holiday gatherings. In September, total Turnpike toll revenue (Table 2) was positive for the first time since the beginning of the COVID-19 pandemic, increasing by 2.3%. With the full impact of the 36% toll increase included in the October and November data, total toll revenue increased by 15.1% and 8.1%, respectively, despite the decreasing number of transactions.

As shown in Table 3, negative impacts related to the COVID-19 pandemic reduced total Parkway transactions by 60.3% in April 2020, the first full month of the impact in New Jersey. This negative impact has been gradually decreasing each month, such that by August 2020 the negative impact was reduced to just 12.7%. In September 2020, the negative impact reduced further, to just 10.8%, despite the 27% toll increase on September 13. October Parkway transactions were a bit more negative than those for September, decreasing by 13.7% compared to the same month in 2019, while they were down 19.0% year-over-year in November 2020. As with the Turnpike discussed above, October and November data included the first full months of the 27% toll increase, while Thanksgiving holiday traffic was significantly depressed, both of which account for the higher negative comparisons in these months. In September 2020, total Parkway toll revenue (Table 4) was positive for the first time since the beginning of the COVID-19 pandemic, increasing by 3.0%. With the full impact of the 27% toll increase included in the October and November data, total toll revenue increased by 9.4% and 2.5%, respectively, despite falling transaction numbers.

Table 1
Historical Toll Transaction Trends By Month
New Jersey Turnpike
(Thousands of Vehicles)

Passenger Car Transactions

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	14,894 (2,4)	6.4	15,850 (4)	6.8	16,928 (4,5)	0.2	16,960 (4)	2.4	17,369	2.0	17,716
February	14,371 (2,4)	12.2	16,127 (1,4)	(3.9)	15,493 (4,5)	4.9	16,252 (4)	0.9	16,391	4.7	17,162 (1)
March	16,990 (2,4)	8.3	18,402 (4)	(2.7)	17,908 (2,4,5)	1.9	18,244 (4)	5.2	19,186	(33.3)	12,796 (6)
April	18,108 (4)	1.8	18,426 (4)	3.9	19,148 (4)	0.7	19,287 (4)	1.6	19,592	(68.5)	6,175 (6)
May	19,072 (4)	1.6	19,378 (4)	3.3	20,023 (4)	1.9	20,395 (4)	0.7	20,544	(54.1)	9,437 (6)
June	18,856 (4)	4.3	19,662 (4)	3.0	20,249 (4)	0.9	20,434 (4)	(0.4)	20,361	(37.9)	12,641 (6)
July	19,696 (4)	1.2	19,925 (4)	2.2	20,366 (4)	0.6	20,481	2.1	20,919	(28.4)	14,987 (6)
August	19,748 (4)	2.6	20,270 (4)	2.9	20,859 (4)	0.2	20,906	0.9	21,101	(24.3)	15,972 (6)
September	18,144 (4)	3.9	18,853 (4)	2.3	19,288 (4)	(0.7)	19,151	1.9	19,507	(21.0)	15,414 (6,7)
October	19,003 (4)	2.1	19,411 (4)	3.2	20,029 (4)	1.3	20,280	(0.4)	20,195	(21.6)	15,839 (6)
November	18,061 (4)	3.2	18,634 (4)	2.3	19,067 (4)	(0.3)	19,013	1.0	19,202	(25.8)	14,245 (6)
December	18,415 (4)	1.5	18,696 (4)	(0.4)	18,621 (4)	2.5	19,093	(0.0)	19,087		
TOTAL (8)	215,358	3.8	223,634	1.9	227,979	1.1	230,496	1.3	233,454		
Subtotal (8) Jan.-Nov.	196,943	4.1	204,938	2.2	209,358	1.0	211,403	1.4	214,367	(28.9)	152,385

Commercial Vehicle Transactions (3)

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	2,296 (2)	0.8	2,315	8.7	2,517 (5)	6.0	2,668	6.7	2,847	1.5	2,891
February	2,216 (2)	8.6	2,406 (1)	(5.8)	2,266 (5)	9.7	2,485	2.6	2,550	2.8	2,621 (1)
March	2,593 (2)	5.6	2,737	(1.6)	2,694 (2,5)	1.7	2,740	3.0	2,822	(3.4)	2,726 (6)
April	2,642	(2.2)	2,584	0.9	2,608	7.6	2,805	3.9	2,914	(27.2)	2,122 (6)
May	2,641	1.3	2,675	8.5	2,903	3.9	3,015	0.7	3,035	(23.5)	2,321 (6)
June	2,793	0.6	2,809	3.7	2,912	1.4	2,954	(5.5)	2,793	(3.2)	2,705 (6)
July	2,789	(4.6)	2,660	1.5	2,701	8.8	2,940	(1.3)	2,903	(3.3)	2,806 (6)
August	2,654	9.0	2,893	1.3	2,930	5.4	3,089	(6.8)	2,878	(2.9)	2,794 (6)
September	2,682	0.9	2,706	0.3	2,715	0.8	2,736	3.8	2,839	(0.8)	2,815 (6,7)
October	2,793	(1.9)	2,741	7.9	2,958	8.0	3,196	(2.0)	3,131	(4.6)	2,986 (6)
November	2,538	4.7	2,658	5.3	2,799	3.5	2,898	(3.9)	2,786	(2.0)	2,731 (6)
December	2,601	2.9	2,676	0.3	2,683	1.6	2,726	3.4	2,820		
TOTAL (8)	31,238	2.0	31,860	2.6	32,686	4.8	34,252	0.2	34,318		
Subtotal (8) Jan.-Nov.	28,637	1.9	29,184	2.8	30,003	5.1	31,526	(0.1)	31,498	(6.3)	29,517

Total Transactions

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	17,190 (2,4)	5.7	18,165 (4)	7.0	19,445 (4,5)	0.9	19,628 (4)	3.0	20,216	1.9	20,607
February	16,587 (2,4)	11.7	18,533 (1,4)	(4.2)	17,759 (4,5)	5.5	18,737 (4)	1.1	18,941	4.4	19,783 (1)
March	19,583 (2,4)	7.9	21,139 (4)	(2.5)	20,602 (2,4,5)	1.9	20,984 (4)	4.9	22,008	(29.5)	15,522 (6)
April	20,750 (4)	1.3	21,010 (4)	3.6	21,756 (4)	1.5	22,092 (4)	1.9	22,506	(63.1)	8,297 (6)
May	21,713 (4)	1.6	22,053 (4)	4.0	22,926 (4)	2.1	23,410 (4)	0.7	23,579	(50.1)	11,758 (6)
June	21,649 (4)	3.8	22,471 (4)	3.1	23,161 (4)	1.0	23,388 (4)	(1.0)	23,154	(33.7)	15,346 (6)
July	22,485 (4)	0.4	22,585 (4)	2.1	23,067 (4)	1.5	23,421	1.7	23,822	(25.3)	17,793 (6)
August	22,402 (4)	3.4	23,163 (4)	2.7	23,789 (4)	0.9	23,995	(0.1)	23,979	(21.7)	18,766 (6)
September	20,826 (4)	3.5	21,559 (4)	2.1	22,003 (4)	(0.5)	21,887	2.1	22,346	(18.4)	18,229 (6,7)
October	21,796 (4)	1.6	22,152 (4)	3.8	22,987 (4)	2.1	23,476	(0.6)	23,326	(19.3)	18,825 (6)
November	20,599 (4)	3.4	21,292 (4)	2.7	21,866 (4)	0.2	21,911	0.4	21,988	(22.8)	16,976 (6)
December	21,016 (4)	1.7	21,372 (4)	(0.3)	21,304 (4)	2.4	21,819	0.4	21,907		
TOTAL (8)	246,596	3.6	255,494	2.0	260,665	1.6	264,748	1.1	267,772		
Subtotal (8) Jan.-Nov.	225,580	3.8	234,122	2.2	239,361	1.5	242,929	1.2	245,865	(26.0)	181,903

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Consists of Classes 2 through 6, and B2 and B3.
(4) Construction on the Pulaski Skyway positively impacted passenger car traffic on the Turnpike.
(5) Delaware River Turnpike Bridge was closed to all traffic from January 20, 2017 through March 9, 2017.
(6) COVID-19 pandemic
(7) 36% toll increase went into effect on September 13, 2020.
(8) Totals may not equal the sum of all parts due to rounding.
Source: NJTA

Table 2
Historical Gross Toll Revenue Trends By Month
New Jersey Turnpike
(Thousands of Dollars)

Passenger Car Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$49,627 (2,4)	6.9	$53,075 (4)	9.0	$57,833 (4,5)	(1.2)	$57,145 (4)	2.0	$58,286	1.8	$59,332
February	46,995 (2,4)	14.1	53,615 (1,4)	(2.7)	52,166 (4,5)	5.9	55,233 (4)	0.4	55,450	4.5	57,933 (1)
March	56,593 (2,4)	10.5	62,543 (4)	(3.3)	60,489 (2,4,5)	4.3	63,077 (4)	4.2	65,718	(34.8)	42,823 (6)
April	62,592 (4)	2.1	63,923 (4)	7.1	68,434 (4)	(1.4)	67,506 (4)	2.6	69,287	(75.0)	17,348 (6)
May	67,110 (4)	1.4	68,030 (4)	3.5	70,429 (4)	0.9	71,045 (4)	1.5	72,095	(57.4)	30,721 (6)
June	65,346 (4)	5.1	68,664 (4)	4.3	71,606 (4)	0.6	72,069 (4)	1.3	73,014	(37.3)	45,763 (6)
July	71,042 (4)	3.1	73,258 (4)	2.6	75,184 (4)	(0.5)	74,787	1.0	75,567	(28.2)	54,266 (6)
August	72,439 (4)	1.2	73,343 (4)	4.0	76,268 (4)	0.4	76,586	1.1	77,412	(25.7)	57,544 (6)
September	62,285 (4)	4.0	64,768 (4)	4.8	67,851 (4)	(0.6)	67,410	(0.3)	67,217	(4.2)	64,400 (6,7)
October	64,572 (4)	3.0	66,531 (4)	3.6	68,897 (4)	0.9	69,544	(1.7)	68,379	8.1	73,931 (6)
November	62,788 (4)	2.4	64,293 (4)	1.7	65,398 (4)	2.0	66,730	0.5	67,077	(1.5)	66,074 (5)
December	63,619 (4)	1.1	64,294 (4)	2.5	65,923 (4)	2.9	67,826	(1.6)	66,767		
TOTAL (8)	$745,008	4.2	$776,337	3.1	$800,478	1.1	$808,958	0.9	$816,271		
Subtotal (8) Jan.-Nov.	681,389	4.5	712,043	3.2	734,555	0.9	741,132	1.1	749,502	(23.9)	$570,137

Commercial Vehicle Toll Revenue (3)

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$26,519 (2)	0.6	$26,687	3.0	$27,490 (5)	5.8	$29,077	6.2	$30,867	(0.3)	$30,782
February	25,619 (2)	8.1	27,691 (1)	(11.4)	24,525 (5)	9.6	26,876	0.1	26,900	4.6	28,129 (1)
March	29,502 (2)	7.5	31,726	(8.4)	29,068 (2,5)	2.6	29,831	(3.1)	28,910	2.2	29,532 (6)
April	30,799	(3.0)	29,862	(4.8)	28,438	7.0	30,426	(0.4)	30,304	(26.2)	22,372 (6)
May	31,136	1.2	31,502	0.6	31,679	3.1	32,669	(5.0)	31,046	(21.1)	24,487 (6)
June	31,994	1.3	32,415	(3.6)	31,234	1.6	31,725	(8.0)	29,181	3.5	30,191 (6)
July	32,035	(3.6)	30,870	(6.2)	28,964	9.5	31,720	(6.6)	29,616	1.4	30,021 (6)
August	30,650	7.6	32,980	(4.8)	31,408	5.2	33,048	(7.5)	30,583	(4.5)	29,219 (6)
September	30,789	0.7	30,990	(5.4)	29,321	1.4	29,737	1.0	30,020	16.8	35,075 (6,7)
October	32,253	(1.3)	31,821	(3.5)	30,698	12.0	34,379	(4.3)	32,899	29.7	42,666 (6)
November	29,617	4.6	30,981	(5.2)	29,361	6.3	31,212	(3.5)	30,125	29.5	39,015 (6)
December	30,346	1.2	30,695	(5.3)	29,074	2.0	29,664	0.3	29,753		
TOTAL (8)	$361,259	1.9	$368,220	(4.6)	$351,260	5.4	$370,364	(2.7)	$360,205		
Subtotal (8) Jan.-Nov.	330,913	2.0	337,525	(4.5)	322,186	5.7	340,700	(3.0)	330,451	3.3	$341,488

Total Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$76,146 (2,4)	4.7	$79,762 (4)	7.0	$85,323 (4,5)	1.1	$86,222 (4)	3.4	$89,153	1.1	$90,114
February	72,614 (2,4)	12.0	81,306 (1,4)	(5.7)	76,691 (4,5)	7.1	82,109 (4)	0.3	82,350	4.5	86,062 (1)
March	86,095 (2,4)	9.5	94,269 (4)	(5.0)	89,557 (2,4,5)	3.7	92,908 (4)	1.9	94,628	(23.5)	72,355 (6)
April	93,391 (4)	0.4	93,785 (4)	3.3	96,872 (4)	1.1	97,932 (4)	1.7	99,591	(60.1)	39,720 (6)
May	98,246 (4)	1.3	99,532 (4)	2.6	102,108 (4)	1.6	103,714 (4)	(0.6)	103,141	(46.5)	55,208 (6)
June	97,340 (4)	3.8	101,079 (4)	1.7	102,840 (4)	0.9	103,794 (4)	(1.5)	102,195	(25.7)	75,954 (6)
July	103,077 (4)	1.0	104,128 (4)	0.0	104,148 (4)	2.3	106,507	(1.2)	105,183	(19.9)	84,287 (6)
August	103,089 (4)	3.1	106,323 (4)	1.3	107,676 (4)	1.8	109,634	(1.5)	107,995	(19.7)	86,763 (6)
September	93,074 (4)	2.9	95,758 (4)	1.5	97,172 (4)	(0.0)	97,147	0.1	97,237	2.3	99,475 (6,7)
October	96,825 (4)	1.6	98,352 (4)	1.3	99,595 (4)	4.3	103,923	(2.5)	101,278	15.1	116,597 (6)
November	92,405 (4)	3.1	95,274 (4)	(0.5)	94,759 (4)	3.4	97,942	(0.8)	97,203	8.1	105,089 (6)
December	93,965 (4)	1.1	94,989 (4)	0.0	94,997 (4)	2.6	97,490	(1.0)	96,520		
TOTAL (8)	$1,106,267	3.5	$1,144,557	0.6	$1,151,738	2.4	$1,179,322	(0.2)	$1,176,476		
Subtotal (8) Jan.-Nov.	1,012,302	3.7	1,049,568	0.7	1,056,741	2.4	1,081,832	(0.2)	1,079,954	(15.6)	$911,624

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Consists of Classes 2 through 6, and B2 and B3.
(4) Construction on the Pulaski Skyway positively impacted passenger car revenue on the Turnpike.
(5) Delaware River Turnpike Bridge was closed to all traffic from January 20, 2017 through March 9, 2017.
(6) COVID-19 pandemic
(7) 36% toll increase went into effect on September 13, 2020.
(8) Totals may not equal the sum of all parts due to rounding.
Source: NJTA

Table 3
Historical Toll Transaction Trends By Month
Garden State Parkway
(Thousands of Vehicles)

Passenger Car Transactions

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	25,831 (2)	4.9	27,091	5.0	28,442	(0.3)	28,370	(0.9)	28,118	3.3	29,033
February	24,629 (2)	12.0	27,586 (1)	(2.2)	26,977	1.7	27,443	(3.8)	26,403	7.0	28,258 (1)
March	28,779 (2)	8.5	31,218	(3.0)	30,292 (2)	(1.1)	29,971	2.0	30,581	(29.6)	21,539 (4)
April	30,531	1.5	31,004	1.9	31,604	0.2	31,659	(1.7)	31,128	(60.7)	12,226 (4)
May	33,180	0.4	33,299	1.5	33,795	1.6	34,338	(2.2)	33,594	(44.6)	18,604 (4)
June	33,376	4.5	34,886	1.0	35,232	0.8	35,525	(4.2)	34,021	(23.9)	25,902 (4)
July	36,442	0.5	36,610	0.4	36,746	0.6	36,967	(2.1)	36,192	(14.6)	30,914 (4)
August	36,838	0.8	37,123	0.4	37,266	(1.9)	36,562	0.5	36,752	(12.9)	32,026 (4)
September	32,374	0.8	32,644	1.1	33,002	(4.2)	31,620	2.4	32,375	(10.9)	28,832 (4,5)
October	31,751	1.0	32,068	2.7	32,945	(2.1)	32,262	(0.7)	32,038	(13.9)	27,597 (4)
November	29,722	2.3	30,409	1.9	30,981	(3.9)	29,779	1.2	30,126	(19.3)	24,315 (4)
December	30,640	0.0	30,648	(0.5)	30,504	(1.6)	30,013	(0.8)	29,783		
TOTAL (6)	374,093	2.8	384,586	0.8	387,786	(0.8)	384,509	(0.9)	381,110		
Subtotal (6) Jan.-Nov.	343,453	3.1	353,938	0.9	357,282	(0.8)	354,496	(0.9)	351,328	(20.5)	279,246

Commercial Vehicle Transactions (3)

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	323 (2)	6.2	343	5.2	361	6.9	386	0.8	389	11.8	435
February	322 (2)	7.8	347 (1)	(5.5)	328	6.4	349	6.6	372	11.3	414 (1)
March	381 (2)	9.7	418	(7.2)	388 (2)	2.3	397	7.8	428	(5.4)	405 (4)
April	429	5.1	451	(11.1)	401	8.5	435	6.9	465	(32.9)	312 (4)
May	482	1.0	487	1.2	493	4.5	515	4.3	537	(25.0)	403 (4)
June	491	(2.6)	478	2.5	490	2.4	502	1.8	511	(6.8)	476 (4)
July	514	(10.7)	459	4.8	481	4.2	501	9.0	546	(7.0)	508 (4)
August	489	(4.9)	465	5.2	489	1.0	494	5.1	519	(3.7)	500 (4)
September	455	(7.7)	420	5.0	441	(5.0)	419	16.5	488	0.6	491 (4,5)
October	474	(11.6)	419	7.9	452	6.6	482	6.4	513	(1.6)	505 (4)
November	443	(14.2)	380	6.1	403	4.7	422	5.5	445	(0.2)	444 (4)
December	386	(7.8)	356	7.3	382	(0.3)	381	12.3	428		
TOTAL (6)	5,189	(3.2)	5,023	1.7	5,109	3.4	5,283	6.8	5,641		
Subtotal (6) Jan.-Nov.	4,803	(2.8)	4,667	1.3	4,727	3.7	4,902	6.3	5,213	(6.1)	4,895

Total Transactions

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	26,154 (2)	4.9	27,434	5.0	28,803	(0.2)	28,756	(0.9)	28,507	3.4	29,468
February	24,951 (2)	12.0	27,933 (1)	(2.2)	27,305	1.8	27,792	(3.7)	26,775	7.1	28,673 (1)
March	29,160 (2)	8.5	31,636	(3.0)	30,680 (2)	(1.0)	30,368	2.1	31,009	(29.2)	21,944 (4)
April	30,960	1.6	31,455	1.7	32,005	0.3	32,094	(1.6)	31,593	(60.3)	12,538 (4)
May	33,662	0.4	33,786	1.5	34,288	1.6	34,853	(2.1)	34,131	(44.3)	19,007 (4)
June	33,867	4.4	35,364	1.0	35,722	0.9	36,027	(4.1)	34,532	(23.6)	26,378 (4)
July	36,956	0.3	37,069	0.4	37,227	0.6	37,468	(1.9)	36,738	(14.5)	31,422 (4)
August	37,327	0.7	37,588	0.4	37,755	(1.9)	37,056	0.6	37,271	(12.7)	32,526 (4)
September	32,829	0.7	33,064	1.1	33,443	(4.2)	32,039	2.6	32,863	(10.8)	29,324 (4,5)
October	32,225	0.8	32,487	2.8	33,397	(2.0)	32,744	(0.6)	32,551	(13.7)	28,102 (4)
November	30,165	2.1	30,789	1.9	31,384	(3.8)	30,201	1.2	30,571	(19.0)	24,759 (4)
December	31,026	(0.1)	31,004	(0.4)	30,886	(1.6)	30,394	(0.6)	30,211		
TOTAL (6)	379,282	2.7	389,609	0.8	392,895	(0.8)	389,792	(0.8)	386,752		
Subtotal (6) Jan.-Nov.	348,256	3.0	358,605	0.9	362,009	(0.7)	359,398	(0.8)	356,541	(20.3)	284,142

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Consists of Classes 2 through 6, and B2 and B3. Heavy trucks, registered as 10,000 lbs or more (6 tires or 3-or-more-axles), are prohibited north of Interchange 105.
(4) COVID-19 pandemic
(5) 27% toll increase went into effect on September 13, 2020.
(6) Totals may not equal the sum of all months due to rounding.
Source: NJTA

Table 4
Historical Gross Toll Revenue Trends By Month
Garden State Parkway
(Thousands of Dollars)

Passenger Car Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$27,396 (2)	4.4	$28,613	5.2	$30,095	(0.5)	$29,945	2.6	$30,725	2.8	$31,576
February	26,034 (2)	12.7	29,351 (1)	(3.2)	28,415	2.3	29,062	(0.8)	28,840	6.8	30,814 (1)
March	30,573 (2)	8.5	33,178	(3.5)	32,014 (2)	(0.7)	31,804	5.0	33,389	(30.3)	23,258 (4)
April	32,625	0.7	32,860	2.1	33,560	0.3	33,644	1.4	34,122	(67.0)	11,271 (4)
May	35,690	(0.5)	35,518	1.3	35,987	1.4	36,494	1.0	36,867	(49.4)	18,653 (4)
June	36,024	3.7	37,359	0.9	37,713	1.0	38,075	(1.6)	37,480	(21.6)	29,385 (4)
July	39,568	0.3	39,689	0.1	39,711	1.4	40,281	(0.1)	40,259	(14.8)	34,298 (4)
August	40,207	0.5	40,394	(0.1)	40,338	1.3	40,873	0.3	40,981	(13.4)	35,474 (4)
September	34,828	0.1	34,877	1.2	35,279	0.7	35,526	0.6	35,734	2.7	36,716 (4,5)
October	33,841	1.0	34,174	2.4	34,990	1.0	35,327	(0.7)	35,074	9.2	38,306 (4)
November	31,652	1.8	32,208	(0.5)	32,059	2.2	32,757	0.6	32,949	2.0	33,606 (4)
December	32,472	(0.4)	32,346	(0.3)	32,235	1.9	32,844	(1.3)	32,433		
TOTAL (6)	$400,910	2.4	$410,567	0.4	$412,396	1.0	$416,632	0.5	$418,853		
Subtotal (6) Jan.-Nov.	368,438	2.7	378,221	0.5	380,161	1.0	383,788	0.7	386,420	(16.3)	$323,358

Commercial Vehicle Toll Revenue (3)

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$984 (2)	2.0	$1,004	9.4	$1,098	5.7	$1,161	(2.4)	$1,133	8.1	$1,225
February	945 (2)	8.1	1,022 (1)	(5.3)	968	5.8	1,024	5.3	1,078	7.1	1,154 (1)
March	1,130 (2)	9.9	1,242	(5.3)	1,176 (2)	0.8	1,185	4.5	1,238	(5.4)	1,171 (4)
April	1,299	3.6	1,346	(8.2)	1,235	6.6	1,317	5.7	1,392	(40.7)	826 (4)
May	1,480	(0.7)	1,470	3.3	1,519	2.0	1,550	3.0	1,597	(29.3)	1,129 (4)
June	1,520	(0.3)	1,515	1.1	1,532	0.6	1,541	0.6	1,550	(2.5)	1,512 (4)
July	1,643	(9.4)	1,489	1.6	1,513	4.8	1,585	6.6	1,689	(10.8)	1,507 (4)
August	1,582	(1.9)	1,552	0.9	1,566	1.8	1,594	3.6	1,651	(10.4)	1,479 (4)
September	1,435	(8.2)	1,318	5.4	1,389	(1.7)	1,365	9.7	1,498	8.8	1,630 (4,5)
October	1,472	(10.0)	1,325	3.0	1,365	17.6	1,605	(3.0)	1,557	13.7	1,771 (4)
November	1,307	(10.6)	1,169	3.1	1,205	7.4	1,294	1.8	1,317	16.1	1,529 (4)
December	1,155	(6.1)	1,085	10.1	1,195	(3.8)	1,150	7.7	1,239		
TOTAL (6)	$15,952	(2.6)	$15,537	1.4	$15,761	3.9	$16,371	3.5	$16,939		
Subtotal (6) Jan.-Nov.	14,797	(2.3)	14,452	0.8	14,566	4.5	15,221	3.1	15,700	(4.9)	$14,933

Total Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2019
January	$28,380 (2)	4.4	$29,617	5.3	$31,193	(0.3)	$31,106	2.4	$31,858	3.0	$32,801
February	26,979 (2)	12.6	30,373 (1)	(3.3)	29,383	2.4	30,086	(0.6)	29,918	6.9	31,968 (1)
March	31,703 (2)	8.6	34,420	(3.6)	33,190 (2)	(0.6)	32,989	5.0	34,627	(29.4)	24,430 (4)
April	33,924	0.8	34,206	1.7	34,795	0.5	34,961	1.6	35,514	(65.9)	12,096 (4)
May	37,170	(0.5)	36,988	1.4	37,506	1.4	38,044	1.1	38,464	(48.6)	19,782 (4)
June	37,544	3.5	38,874	1.0	39,245	0.9	39,616	(1.5)	39,030	(20.8)	30,897 (4)
July	41,211	(0.1)	41,178	0.1	41,224	1.6	41,866	0.2	41,948	(14.6)	35,805 (4)
August	41,789	0.4	41,946	(0.1)	41,904	1.3	42,467	0.4	42,632	(13.3)	36,953 (4)
September	36,263	(0.2)	36,195	1.3	36,668	0.6	36,891	0.9	37,232	3.0	38,346 (4,5)
October	35,313	0.5	35,499	2.4	36,355	1.6	36,932	(0.8)	36,631	9.4	40,078 (4)
November	32,959	1.3	33,377	(0.3)	33,264	2.4	34,051	0.6	34,266	2.5	35,135 (4)
December	33,627	(0.6)	33,431	(0.0)	33,430	1.7	33,994	(0.9)	33,672		
TOTAL (6)	$416,862	2.2	$426,104	0.5	$428,157	1.1	$433,003	0.6	$435,792		
Subtotal (6) Jan.-Nov.	383,235	2.5	392,673	0.5	394,727	1.1	399,009	0.8	402,120	(15.9)	$338,291

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Consists of Classes 2 through B3. Heavy trucks, registered as 10,000 lbs or more (6 tires or 3-or-more-axles), are prohibited north of Interchange 105.
(4) COVID-19 pandemic
(5) 27% toll increase went into effect on September 13, 2020.
(6) Totals may not equal the sum of all months due to rounding.
Source: NJTA

Table 5 shows total Turnpike, Parkway, and total system monthly toll revenue trends. As shown, total system toll revenue increased by 2.5% in September, the first positive revenue growth since the beginning of the COVID-19 pandemic. This positive result is due to the September 13 toll increases on both the Turnpike and Parkway. Total system toll revenue increased by 13.6% in October 2020 and 6.7% in November compared to the same months in 2019. October and November data reflect the full impact of the September 13 toll increase.

Actual Versus Estimated Transactions and Toll Revenue

Tables 6 through 8 provide a comparison of actual transactions and toll revenue to forecast transactions and toll revenue. The forecasted values are from CDM Smith's October 2020 Draw Down Letter. Table 6 provides the comparison for the Turnpike. As shown, actual total Turnpike transactions fell short of CDM Smith estimates by 2.0% for the first three forecast months of September through November 2020. Actual total Turnpike toll revenue was 1.8% less than CDM Smith's estimates over the same period. It is important to note that total combined actual revenue for September and October (i.e., excluding November) exceeded CDM Smith's forecasts by 0.8%. The large reduction of discretionary Thanksgiving holiday travel (the largest travel holiday of the year) in November was underestimated in CDM Smith's forecasts, resulting in that month's revenue being 6.7% below forecasts.

Table 7 provides the comparison for the Parkway. As shown, actual total Parkway transactions underperformed CDM Smith estimates by 4.4% for the first three forecast months of September, October, and November 2020. Actual total Parkway toll revenue underperformed CDM Smith's estimates by 3.7% over the same period. As with the Turnpike, the reduction in Thanksgiving holiday travel had a big impact on the actual versus estimated values. When only September and October are considered, actual toll revenue was only 1.5% below CDM Smith's forecast. The reduction of discretionary Thanksgiving holiday travel resulted in November being 8.7% below our revenue forecast.

When combined (Table 8), actual total system toll revenue underperformed CDM Smith's estimates by 2.3%. Excluding the impacts of November, total actual toll revenue exceeded our estimates by 0.2% for the September and October period.

Table 5
Historical Gross Toll Revenue Trends By Month
Total of All Vehicle Classes
(Thousands of Dollars)

New Jersey Turnpike

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$76,146 (2,3)	4.7	$79,762 (3)	7.0	$85,323 (3,4)	1.1	$86,222 (3)	3.4	$89,153	1.1	$90,114
February	72,614 (2,3)	12.0	81,306 (1,3)	(5.7)	76,691 (3,4)	7.1	82,109 (3)	0.3	82,350	4.5	86,062 (1)
March	86,095 (2,3)	9.5	94,269 (3)	(5.0)	89,557 (3,4)	3.7	92,908 (3)	1.9	94,628	(23.5)	72,355 (5)
April	93,391 (3)	0.4	93,785 (3)	3.3	96,872 (3)	1.1	97,932 (3)	1.7	99,591	(60.1)	39,720 (5)
May	98,246 (3)	1.3	99,532 (3)	2.6	102,108 (3)	1.6	103,714 (3)	(0.6)	103,141	(46.5)	55,208 (5)
June	97,340 (3)	3.8	101,079 (3)	1.7	102,840 (3)	0.9	103,794 (3)	(1.5)	102,195	(25.7)	75,954 (5)
July	103,077 (3)	1.0	104,128 (3)	0.0	104,148 (3)	2.3	106,507	(1.2)	105,183	(19.9)	84,287 (5)
August	103,089 (3)	3.1	106,323 (3)	1.3	107,676 (3)	1.8	109,634	(1.5)	107,995	(19.7)	86,763 (5)
September	93,074 (3)	2.9	95,758 (3)	1.5	97,172 (3)	(0.0)	97,147	0.1	97,237	2.3	99,475 (5,6)
October	96,825 (3)	1.6	98,352 (3)	1.3	99,595 (3)	4.3	103,923	(2.5)	101,278	15.1	116,597 (5)
November	92,405 (3)	3.1	95,274 (3)	(0.5)	94,759 (3)	3.4	97,942	(0.8)	97,203	8.1	105,089 (5)
December	93,965 (3)	1.1	94,989 (3)	0.0	94,997 (3)	2.6	97,490	(1.0)	96,520		
TOTAL (7)	$1,106,267	3.5	$1,144,557	0.6	$1,151,738	2.4	$1,179,322	(0.2)	$1,176,474		
Subtotal (7) Jan.-Nov.	1,012,302	3.7	1,049,568	0.7	1,056,741	2.4	1,081,832	(0.2)	1,079,954	(15.6)	$911,624

Garden State Parkway

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$28,380 (2)	4.4	$29,617	5.3	$31,193	(0.3)	$31,106	2.4	$31,858	3.0	$32,801
February	26,979 (2)	12.6	30,373 (1)	(3.3)	29,383	2.4	30,086	(0.6)	29,918	6.9	31,968 (1)
March	31,703 (2)	8.6	34,420	(3.6)	33,190	(0.6)	32,989	5.0	34,627	(29.4)	24,430 (5)
April	33,924	0.8	34,206	1.7	34,795	0.5	34,961	1.6	35,514	(65.9)	12,096 (5)
May	37,170	(0.5)	36,988	1.4	37,506	1.4	38,044	1.1	38,464	(48.6)	19,782 (5)
June	37,544	3.5	38,874	1.0	39,245	0.9	39,616	(1.5)	39,030	(20.8)	30,897 (5)
July	41,211	(0.1)	41,178	0.1	41,224	1.6	41,866	0.2	41,948	(14.6)	35,805 (5)
August	41,789	0.4	41,946	(0.1)	41,904	1.3	42,467	0.4	42,632	(13.3)	36,953 (5)
September	36,263	(0.2)	36,195	1.3	36,668	0.6	36,891	0.9	37,232	3.0	38,346 (5,6)
October	35,313	0.5	35,499	2.4	36,355	1.6	36,932	(0.8)	36,631	9.4	40,078 (5)
November	32,959	1.3	33,377	(0.3)	33,264	2.4	34,051	0.6	34,266	2.5	35,135 (5)
December	33,627	(0.6)	33,431	(0.0)	33,430	1.7	33,994	(0.9)	33,672		
TOTAL (7)	$416,862	2.2	$426,104	0.5	$428,157	1.1	$433,003	0.6	$435,792		
Subtotal (7) Jan.-Nov.	383,235	2.5	392,673	0.5	394,727	1.1	399,009	0.8	402,120	(15.9)	$338,291

Total Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$104,526 (2,3)	4.6	$109,379 (3)	6.5	$116,516 (3,4)	0.7	$117,328 (3)	3.1	$121,011	1.6	$122,915
February	99,593 (2,3)	12.1	111,679 (1,3)	(5.0)	106,074 (3,4)	5.8	112,195 (3)	0.1	112,268	5.1	118,030 (1)
March	117,798 (2,3)	9.2	128,689 (3)	(4.6)	122,747 (3,4)	2.6	125,897 (3)	2.7	129,255	(25.1)	96,785 (5)
April	127,315 (3)	0.5	127,991 (3)	2.9	131,667 (3)	0.9	132,893 (3)	1.7	135,105	(61.6)	51,816 (5)
May	135,416 (3)	0.8	136,520 (3)	2.3	139,614 (3)	1.5	141,758 (3)	(0.1)	141,605	(47.0)	74,990 (5)
June	134,884 (3)	3.8	139,953 (3)	1.5	142,085 (3)	0.9	143,410 (3)	(1.5)	141,225	(24.3)	106,851 (5)
July	144,288 (3)	0.7	145,306 (3)	0.0	145,372 (3)	2.1	148,373	(0.8)	147,131	(18.4)	120,092 (5)
August	144,878 (3)	2.3	148,269 (3)	0.9	149,580 (3)	1.7	152,101	(1.0)	150,627	(17.9)	123,716 (5)
September	129,337 (3)	2.0	131,953 (3)	1.4	133,840 (3)	0.1	134,038	0.3	134,469	2.5	137,821 (5,6)
October	132,138 (3)	1.3	133,851 (3)	1.6	135,950 (3)	3.6	140,855	(2.1)	137,909	13.6	156,675 (5)
November	125,364 (3)	2.6	128,651 (3)	(0.5)	128,023 (3)	3.1	131,993	(0.4)	131,469	6.7	140,224 (5)
December	127,592 (3)	0.6	128,420 (3)	0.0	128,427 (3)	2.4	131,484	(1.0)	130,192		
TOTAL (7)	$1,523,129	3.1	$1,570,661	0.6	$1,579,895	2.1	$1,612,325	(0.0)	$1,612,266		
Subtotal (7) Jan.-Nov.	1,395,537	3.3	1,442,241	0.6	1,451,468	2.0	1,480,841	0.1	1,482,074	(15.7)	$1,249,915

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Construction on the Pulaski Skyway positively impacted passenger car traffic on the Turnpike.
(4) Delaware River Turnpike Bridge was closed to all traffic from January 20, 2017 through March 9, 2017.
(5) COVID-19 pandemic
(6) A 36% toll increase on the Turnpike and a 27% toll increase on the Parkway went into effect on September 13, 2020.
(7) Totals may not equal the sum of all months due to rounding.
Source: NJTA

Table 6
Comparison of Estimated and Actual Monthly Transactions and Toll Revenue
New Jersey Turnpike

		Transactions (thousands)								
		Passenger Cars			Commercial Vehicles			Total Vehicles		
Month	Year	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)
September	2020	15,508	(0.6)	15,414	2,555	10.2	2,815	18,063	0.9	18,229
October	2020	15,983	(0.9)	15,839	2,780	7.4	2,986	18,763	0.3	18,825
November	2020	15,533	(8.3)	14,245	2,780	(1.8)	2,731	18,314	(7.3)	16,976
TOTAL		47,024	(3.2)	45,498	8,115	5.1	8,532	55,139	(2.0)	54,030

		Gross Toll Revenue (thousands of $)								
		Passenger Cars			Commercial Vehicles			Total Vehicles		
Month	Year	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)
September	2020	$66,549	(3.2)	$64,400	$33,360	5.1	$35,075	$99,909	(0.4)	$99,475
October	2020	74,180	(0.3)	73,931	40,316	5.8	42,666	114,497	1.8	116,597
November	2020	74,387	(11.2)	66,074	38,234	2.0	39,015	112,620	(6.7)	105,089
TOTAL		$215,116	(5.0)	$204,405	$111,910	4.3	$116,756	$327,026	(1.8)	$321,161

(1) Estimates were developed by CDM Smith and presented to the New Jersey Turnpike Authority in the report titled *2020 New Jersey Turnpike System Draw Down Letter* dated October 14, 2020.
(2) The actual experience is greater or less than the CDM Smith estimate by this percent.
(3) Actual data provided by the New Jersey Turnpike Authority.

Table 7
Comparison of Estimated and Actual Monthly Transactions and Toll Revenue
Garden State Parkway

		Transactions (thousands)			Toll Revenue (thousands)		
Month	Year	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)
September	2020	29,762	(1.5)	29,324	$38,511	(0.4)	$38,346
October	2020	28,962	(3.0)	28,102	41,074	(2.4)	40,078
November	2020	27,242	(9.1)	24,759	38,387	(8.5)	35,135
TOTAL		85,966	(4.4)	82,185	$117,972	(3.7)	$113,559

(1) Estimates were developed by CDM Smith and presented to the New Jersey Turnpike Authority in the report titled *2020 New Jersey Turnpike System Draw Down Letter* dated October 14, 2020.
(2) The actual experience is greater or less than the CDM Smith estimate by this percent.
(3) Actual data provided by the New Jersey Turnpike Authority.

Table 8
Comparison of System Total: Estimated and Actual Monthly Gross Toll Revenue

		Gross Toll Revenue (thousands of $)								
		New Jersey Turnpike			Garden State Parkway			NJTA Total System		
Month	Year	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)
September	2020	$99,909	(0.4)	$99,475	$38,511	(0.4)	$38,346	$138,420	(0.4)	$137,821
October	2019	114,497	1.8	116,597	41,074	(2.4)	40,078	155,571	0.7	156,675
November	2020	112,620	(6.7)	105,089	38,387	(8.5)	35,135	151,008	(7.1)	140,224
TOTAL		$327,026	(1.8)	$321,161	$117,972	(3.7)	$113,559	$444,999	(2.3)	$434,720

(1) Estimates were developed by CDM Smith and presented to the New Jersey Turnpike Authority in the report titled *2020 New Jersey Turnpike System Draw Down Letter* dated October 14, 2020.
(2) The actual experience is greater or less than the CDM Smith estimate by this percent.
(3) Actual data provided by the New Jersey Turnpike Authority.

Conclusion

The three months of additional transactions and toll revenue experience (September, October, and November 2020) that are now available, but not included in the October 2020 Draw Down Letter, are largely in line with CDM Smith's forecasts. As shown in Table 8, actual total system toll revenue for this three-month period was less than the forecast values developed by CDM Smith for the October 2020 Draw Down Letter by 2.3%. As noted above, however, actual revenue experience for September and October combined exceeded CDM Smith's estimates by 0.2%. The underperformance of November, due to the extreme drop off in Thanksgiving holiday traffic resulted in actual November revenue being 7.1% below estimates. We expect monthly comparisons to be much closer in the following months. For this reason, we believe the transactions and toll revenue forecasts presented in the October 2020 Draw Down Letter remain valid and do not require adjustments based on the latest three months of actual transactions and toll revenue data.

*   *   *

While the most up-to-date daily transactions and toll revenue data have been used in preparation of this analysis, we are still in the midst of the COVID-19 pandemic. The models and other methodologies used to estimate impacts associated with NJTA operational adjustments and toll rate changes have been successfully used for prior studies and have proven to be quite accurate. The ultimate extent and duration of local, state, and federal restrictions and social distancing guidelines as a result of COVID-19 will directly affect transactions and toll revenue on the Turnpike and Parkway. CDM Smith will continue to monitor travel patterns and toll revenue trends as the crisis continues.

Sincerely,

Scott A. Allaire

Scott A. Allaire	Yogesh Patel, AICP
Vice President	Project Manager
CDM Smith Inc.	CDM Smith Inc.

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October 14, 2020

Ms. Donna Manuelli
Chief Financial Officer
New Jersey Turnpike Authority
P.O. Box 5042
Woodbridge, NJ 07095

Subject: 2020 New Jersey Turnpike System Draw Down Letter

Dear Ms. Manuelli:

CDM Smith was recently requested to provide updated transactions and toll revenue forecasts for both the New Jersey Turnpike and the Garden State Parkway to the New Jersey Turnpike Authority (NJTA). CDM Smith developed and submitted the *New Jersey Turnpike System 2018 Traffic and Toll Revenue Forecast Study* (the 2018 Forecast Study) on September 21, 2018, which was the latest formal investment grade study to be used in support of future revenue bond issuances. The most recent forecast presented to NJTA in May 2020 (2020 Toll Hearing Report) provided a forecast of annual transactions and toll revenue through calendar year 2030.

This 2020 Draw Down Letter builds on the forecast included in the 2020 Toll Hearing Report to provide revised short-term transaction and toll revenue forecasts through 2030 based on updated actual transaction and toll revenue experience, as well recent trends and forecasts for select economic indicators. Most notably, the forecast in this 2020 Draw Down Letter accounts for two conditions that were unforeseen and not included in the 2018 Forecast Study: a toll increase that went into effect on September 13, 2020 and future annual toll increases, as well as the COVID-19 pandemic. An additional 25 months (from August 2018 through August 2020) of actual transaction and toll revenue experience are available for the 2020 Draw Down Letter as compared to the 2018 Forecast Study.

Monthly Transaction and Toll Revenue Trends

This section provides a summary of monthly transaction and toll revenue trends for the period from January 2015 through August 2020. This information is provided for both the Turnpike and Parkway. In addition, a comparison of actual transaction and toll revenue experience versus CDM Smith estimates (based on the 2018 Forecast Study) is also provided for the Turnpike, Parkway, and the total NJTA system.

NEW JERSEY TURNPIKE

Monthly transaction and toll revenue trends for the New Jersey Turnpike (the Turnpike) from January 2015 through August 2020 are shown in Tables 1 and 2, respectively. Various events had noticeable impacts on Turnpike transactions and toll revenue in recent years. Significant winter weather events in March 2017 reduced transactions and toll revenue below their normal levels.

Lane closures on the Pulaski Skyway positively impacted both passenger car transactions and toll revenues on the Turnpike from April 2014 through early July 2018. The closure of the Delaware River Turnpike Bridge (DRTB) for nearly three months in early 2017 had negative impacts on both transactions and toll revenue. The COVID-19 pandemic and the resultant stay-at-home orders and social distancing measures throughout the country have severly impacted passenger-car transaction and toll revenue beginning in March 2020. Impacts on commercial vehicle transactions and toll revenue have, thus far, been measurable, but less significant than those for passenger cars.

From 2015 to 2016 passenger car transactions and toll revenue increased 3.8% and 4.2%, respectively, and commercial-vehicle transactions and toll revenue increased 2.0% and 1.9%, respectively. In total, transactions grew by 3.6% and toll revenue grew by 3.5% in 2016 compared to 2015. The growth reflected low fuel prices and an extra day for leap year. Construction work continued on the Pulaski Skyway.

From 2016 to 2017 passenger car transactions and toll revenue increased 1.9% and 3.1%, respectively. Commercial vehicle transactions increased 2.6% while toll revenue decreased 4.6%. It should be noted that a retroactive revenue recognition change was implemented in March 2018; it impacted nearly all of 2017 revenue data. This affected the mix of passenger car versus commercial vehicle revenue, while holding total toll revenue unchanged. This explains the divergence between positive commercial transaction growth and negative revenue growth between 2016 and 2017. Total revenue, however, remains a valid comparison. Toll transactions were not affected by this change. Overall, transactions increased by 2.0% and toll revenue increased by 0.6% compared to 2016. The first three months of 2017 were negatively impacted by the temporary closure of the DRTB, which connects the New Jersey Turnpike to the Pennsylvania Turnpike. The closure extended from Friday, January 20, 2017 through Thursday, March 9, 2017. The closure was due to a fracture in the bridge superstructure beneath the westbound lanes, which has been fully repaired.

In 2018 passenger car transactions increased by 1.1% and toll revenue grew 1.1% compared to the same period in 2017. Similarly, commercial vehicle transactions increased by 4.8% and toll revenue increased by 5.4%. In total, transactions grew 1.6% and toll revenue increased by 2.4% in 2018 compared to 2017. Pulaski Skyway construction, which began in April 2014, ended in early July 2018. The completion of this project allowed passenger car traffic to travel in both directions on the Skyway for the first time in more than four years, which had a slight negative impact on Turnpike passenger car transactions and toll revenue.

Table 1
Historical Toll Transaction Trends By Month
New Jersey Turnpike
(Thousands of Vehicles)

Passenger Car Transactions

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	14,894 (2,4)	6.4	15,850 (4)	6.8	16,928 (4,5)	0.2	16,960 (4)	2.4	17,369	2.0	17,716
February	14,371 (2,4)	12.2	16,127 (1,4)	(3.9)	15,493 (4,5)	4.9	16,252 (4)	0.9	16,391	4.7	17,162 (1)
March	16,990 (2,4)	8.3	18,402 (4)	(2.7)	17,908 (2,4,5)	1.9	18,244 (4)	5.2	19,186	(33.3)	12,796 (6)
April	18,108 (4)	1.8	18,426 (4)	3.9	19,148 (4)	0.7	19,287 (4)	1.6	19,592	(68.5)	6,175 (6)
May	19,072 (4)	1.6	19,378 (4)	3.3	20,023 (4)	1.9	20,395 (4)	0.7	20,544	(54.1)	9,437 (6)
June	18,856 (4)	4.3	19,662 (4)	3.0	20,249 (4)	0.9	20,434 (4)	(0.4)	20,361	(37.9)	12,641 (6)
July	19,696 (4)	1.2	19,925 (4)	2.2	20,366 (4)	0.6	20,481	2.1	20,919	(28.4)	14,987 (6)
August	19,748 (4)	2.6	20,270 (4)	2.9	20,859 (4)	0.2	20,906	0.9	21,101	(24.3)	15,972 (6)
September	18,144 (4)	3.9	18,853 (4)	2.3	19,288 (4)	(0.7)	19,151	1.9	19,507		
October	19,003 (4)	2.1	19,411 (4)	3.2	20,029 (4)	1.3	20,280	(0.4)	20,195		
November	18,061 (4)	3.2	18,634 (4)	2.3	19,067 (4)	(0.3)	19,013	1.0	19,202		
December	18,415 (4)	1.5	18,696 (4)	(0.4)	18,621 (4)	2.5	19,093	(0.0)	19,087		
TOTAL (7)	215,358	3.8	223,634	1.9	227,979	1.1	230,496	1.3	233,454		
Subtotal (7) Jan.-Aug.	141,735	4.4	148,040	2.0	150,974	1.3	152,959	1.6	155,463	(31.2)	106,887

Commercial Vehicle Transactions (3)

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	2,296 (2)	0.8	2,315	8.7	2,517 (5)	6.0	2,668	6.7	2,847	1.5	2,891
February	2,216 (2)	8.6	2,406 (1)	(5.8)	2,266 (5)	9.7	2,485	2.6	2,550	2.8	2,621 (1)
March	2,593 (2)	5.6	2,737	(1.6)	2,694 (2,5)	1.7	2,740	3.0	2,822	(3.4)	2,726 (6)
April	2,642	(2.2)	2,584	0.9	2,608	7.6	2,805	3.9	2,914	(27.2)	2,122 (6)
May	2,641	1.3	2,675	8.5	2,903	3.9	3,015	0.7	3,035	(23.5)	2,321 (6)
June	2,793	0.6	2,809	3.7	2,912	1.4	2,954	(5.5)	2,793	(3.2)	2,705 (6)
July	2,789	(4.6)	2,660	1.5	2,701	8.8	2,940	(1.3)	2,903	(3.3)	2,806 (6)
August	2,654	9.0	2,893	1.3	2,930	5.4	3,089	(6.8)	2,878	(2.9)	2,794 (6)
September	2,682	0.9	2,706	0.3	2,715	0.8	2,736	3.8	2,839		
October	2,793	(1.9)	2,741	7.9	2,958	8.0	3,196	(2.0)	3,131		
November	2,538	4.7	2,658	5.3	2,799	3.5	2,898	(3.9)	2,786		
December	2,601	2.9	2,676	0.3	2,683	1.6	2,726	3.4	2,820		
TOTAL (7)	31,238	2.0	31,860	2.6	32,686	4.8	34,252	0.2	34,318		
Subtotal (7) Jan.-Aug.	20,624	2.2	21,079	2.1	21,531	5.4	22,696	0.2	22,742	(7.7)	20,985

Total Transactions

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	17,190 (2,4)	5.7	18,165 (4)	7.0	19,445 (4,5)	0.9	19,628 (4)	3.0	20,216	1.9	20,607
February	16,587 (2,4)	11.7	18,533 (1,4)	(4.2)	17,759 (4,5)	5.5	18,737 (4)	1.1	18,941	4.4	19,783 (1)
March	19,583 (2,4)	7.9	21,139 (4)	(2.5)	20,602 (2,4,5)	1.9	20,984 (4)	4.9	22,008	(29.5)	15,522 (6)
April	20,750 (4)	1.3	21,010 (4)	3.6	21,756 (4)	1.5	22,092 (4)	1.9	22,506	(63.1)	8,297 (6)
May	21,713 (4)	1.6	22,053 (4)	4.0	22,926 (4)	2.1	23,410 (4)	0.7	23,579	(50.1)	11,758 (6)
June	21,649 (4)	3.8	22,471 (4)	3.1	23,161 (4)	1.0	23,388 (4)	(1.0)	23,154	(33.7)	15,346 (6)
July	22,485 (4)	0.4	22,585 (4)	2.1	23,067 (4)	1.5	23,421	1.7	23,822	(25.3)	17,793 (6)
August	22,402 (4)	3.4	23,163 (4)	2.7	23,789 (4)	0.9	23,995	(0.1)	23,979	(21.7)	18,766 (6)
September	20,826 (4)	3.5	21,559 (4)	2.1	22,003 (4)	(0.5)	21,887	2.1	22,346		
October	21,796 (4)	1.6	22,152 (4)	3.8	22,987 (4)	2.1	23,476	(0.6)	23,326		
November	20,599 (4)	3.4	21,292 (4)	2.7	21,866 (4)	0.2	21,911	0.4	21,988		
December	21,016 (4)	1.7	21,372 (4)	(0.3)	21,304 (4)	2.4	21,819	0.4	21,907		
TOTAL (7)	246,596	3.6	255,494	2.0	260,665	1.6	264,748	1.1	267,772		
Subtotal (7) Jan.-Aug.	162,359	4.2	169,119	2.0	172,505	1.8	175,655	1.5	178,205	(28.2)	127,872

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Consists of Classes 2 through 6, and B2 and B3.
(4) Construction on the Pulaski Skyway positively impacted passenger car traffic on the Turnpike.
(5) Delaware River Turnpike Bridge was closed to all traffic from January 20, 2017 through March 9, 2017.
(6) COVID-19 pandemic
(7) Totals may not equal the sum of all parts due to rounding.
Source: NJTA

Table 2
Historical Gross Toll Revenue Trends By Month
New Jersey Turnpike
(Thousands of Dollars)

Passenger Car Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$49,627 (2,4)	6.9	$53,075 (4)	9.0	$57,833 (4,5)	(1.2)	$57,145 (4)	2.0	$58,286	1.8	$59,332
February	46,995 (2,4)	14.1	53,615 (1,4)	(2.7)	52,166 (4,5)	5.9	55,233 (4)	0.4	55,450	4.5	57,933 (1)
March	56,593 (2,4)	10.5	62,543 (4)	(3.3)	60,489 (2,4,5)	4.3	63,077 (4)	4.2	65,718	(34.8)	42,823 (6)
April	62,592 (4)	2.1	63,923 (4)	7.1	68,434 (4)	(1.4)	67,506 (4)	2.6	69,287	(75.0)	17,348 (6)
May	67,110 (4)	1.4	68,030 (4)	3.5	70,429 (4)	0.9	71,045 (4)	1.5	72,095	(57.4)	30,721 (6)
June	65,346 (4)	5.1	68,664 (4)	4.3	71,606 (4)	0.6	72,069 (4)	1.3	73,014	(37.3)	45,763 (6)
July	71,042 (4)	3.1	73,258 (4)	2.6	75,184 (4)	(0.5)	74,787	1.0	75,567	(28.2)	54,266 (6)
August	72,439 (4)	1.2	73,343 (4)	4.0	76,268 (4)	0.4	76,586	1.1	77,412	(25.7)	57,544 (6)
September	62,285 (4)	4.0	64,768 (4)	4.8	67,851 (4)	(0.6)	67,410	(0.3)	67,217		
October	64,572 (4)	3.0	66,531 (4)	3.6	68,897 (4)	0.9	69,544	(1.7)	68,379		
November	62,788 (4)	2.4	64,293 (4)	1.7	65,398 (4)	2.0	66,730	0.5	67,077		
December	63,619 (4)	1.1	64,294 (4)	2.5	65,923 (4)	2.9	67,826	(1.6)	66,767		
TOTAL (7)	$745,008	4.2	$776,337	3.1	$800,478	1.1	$808,958	0.9	$816,271		
Subtotal (7) Jan.-Aug.	491,744	5.0	516,451	3.1	532,409	0.9	537,448	1.7	546,829	(33.1)	$365,731

Commercial Vehicle Toll Revenue (3)

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$26,519 (2)	0.6	$26,687	3.0	$27,490 (5)	5.8	$29,077	6.2	$30,867	(0.3)	$30,782
February	25,619 (2)	8.1	27,691 (1)	(11.4)	24,525 (5)	9.6	26,876	0.1	26,900	4.6	28,129 (1)
March	29,502 (2)	7.5	31,726	(8.4)	29,068 (2,5)	2.6	29,831	(3.1)	28,910	2.2	29,532 (6)
April	30,799	(3.0)	29,862	(4.8)	28,438	7.0	30,426	(0.4)	30,304	(26.2)	22,372 (6)
May	31,136	1.2	31,502	0.6	31,679	3.1	32,669	(5.0)	31,046	(21.1)	24,487 (6)
June	31,994	1.3	32,415	(3.6)	31,234	1.6	31,725	(8.0)	29,181	3.5	30,191 (6)
July	32,035	(3.6)	30,870	(6.2)	28,964	9.5	31,720	(6.6)	29,616	1.4	30,021 (6)
August	30,650	7.6	32,980	(4.8)	31,408	5.2	33,048	(7.5)	30,583	(4.5)	29,219 (6)
September	30,789	0.7	30,990	(5.4)	29,321	1.4	29,737	1.0	30,020		
October	32,253	(1.3)	31,821	(3.5)	30,698	12.0	34,379	(4.3)	32,899		
November	29,617	4.6	30,981	(5.2)	29,361	6.3	31,212	(3.5)	30,125		
December	30,346	1.2	30,695	(5.3)	29,074	2.0	29,664	0.3	29,753		
TOTAL (7)	$361,259	1.9	$368,220	(4.6)	$351,260	5.4	$370,364	(2.7)	$360,205		
Subtotal (7) Jan.-Aug.	238,254	2.3	243,733	(4.5)	232,806	5.4	245,372	(3.2)	237,407	(5.3)	$224,732

Total Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$76,146 (2,4)	4.7	$79,762 (4)	7.0	$85,323 (4,5)	1.1	$86,222 (4)	3.4	$89,153	1.1	$90,114
February	72,614 (2,4)	12.0	81,306 (1,4)	(5.7)	76,691 (4,5)	7.1	82,109 (4)	0.3	82,350	4.5	86,062 (1)
March	86,095 (2,4)	9.5	94,269 (4)	(5.0)	89,557 (2,4,5)	3.7	92,908 (4)	1.9	94,628	(23.5)	72,355 (6)
April	93,391 (4)	0.4	93,785 (4)	3.3	96,872 (4)	1.1	97,932 (4)	1.7	99,591	(60.1)	39,720 (6)
May	98,246 (4)	1.3	99,532 (4)	2.6	102,108 (4)	1.6	103,714 (4)	(0.6)	103,141	(46.5)	55,208 (6)
June	97,340 (4)	3.8	101,079 (4)	1.7	102,840 (4)	0.9	103,794 (4)	(1.5)	102,195	(25.7)	75,954 (6)
July	103,077 (4)	1.0	104,128 (4)	0.0	104,148 (4)	2.3	106,507	(1.2)	105,183	(19.9)	84,287 (6)
August	103,089 (4)	3.1	106,323 (4)	1.3	107,676 (4)	1.8	109,634	(1.5)	107,995	(19.7)	86,763 (6)
September	93,074 (4)	2.9	95,758 (4)	1.5	97,172 (4)	(0.0)	97,147	0.1	97,237		
October	96,825 (4)	1.6	98,352 (4)	1.3	99,595 (4)	4.3	103,923	(2.5)	101,278		
November	92,405 (4)	3.1	95,274 (4)	(0.5)	94,759 (4)	3.4	97,942	(0.8)	97,203		
December	93,965 (4)	1.1	94,989 (4)	0.0	94,997 (4)	2.6	97,490	(1.0)	96,520		
TOTAL (7)	$1,106,267	3.5	$1,144,557	0.6	$1,151,738	2.4	$1,179,322	(0.2)	$1,176,476		
Subtotal (7) Jan.-Aug.	729,998	4.1	760,184	0.7	765,215	2.3	782,820	0.2	784,236	(24.7)	$590,463

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Consists of Classes 2 through 6, and B2 and B3.
(4) Construction on the Pulaski Skyway positively impacted passenger car revenue on the Turnpike.
(5) Delaware River Turnpike Bridge was closed to all traffic from January 20, 2017 through March 9, 2017.
(6) COVID-19 pandemic
(7) Totals may not equal the sum of all parts due to rounding.
Source: NJTA

In 2019 passenger car transactions increased by 1.3% and toll revenue grew 0.9% compared to the same period in 2018. Commercial vehicle transactions increased by 0.2% and toll revenue decreased by 2.7%. In total, transactions grew 1.1% and toll revenue decreased by 0.2% in 2019 compared to 2018.

Between March and August 2019, there was a noticeable disconnect between commercial vehicle transaction growth and commercial vehicle revenue growth. Over this six-month period (March-August 2019), commercial toll transactions decreased by 1.1% versus the same period in 2018. For the same period, commercial toll revenue decreased by 5.2%. NJTA staff believes that this discrepancy between commercial transaction and revenue growth was due to malfunctioning automatic vehicle classification (AVC) loops at Interchange 18W. Because of the malfunction, class 4, 5, and 6 vehicles with a class 3 transponder were not detected as having a gross class mismatch and were thus undercharged. AVC loops were re-installed at the end of August. After August, the variation between commercial transaction and revenue growth was more consistent. An estimated $7.6 million in toll revenue was lost during this six-month period due to the AVC malfunction at Interchange 18W. Absent that loss, total Turnpike toll revenue would have increased by 0.4% in 2019 compared to 2018 (compared to the 0.2% loss shown in Table 2).

Thus far in 2020, year-to-date (January through August) passenger car transactions have decreased by 31.2% and toll revenue has decreased 33.1% compared to the same period in 2019. Commercial vehicle transactions decreased 7.7% and toll revenue decreased by 5.3%. In total, transactions fell 28.2% and toll revenue decreased by 24.7% in the first eight months of 2020 compared to the same period in 2019.

The dominant factor in these significant decreases in transactions and revenue is the COVID-19 pandemic, which began affecting travel patterns in the region in mid-March. Through the end of February 2020, and thus prior to the pandemic, transactions and revenue for both passenger cars and commercial vehicles had increased as compared to 2019. However, in response to the COVID-19 pandemic, New Jersey Governor Murphy declared a State of Emergency and Public Health Emergency on March 9 and in the following weeks a number of restrictions were instituted that negatively impacted travel on the Turnpike and Parkway. A chronological listing of the implementation and subsequent lifting of the most impactful restrictions is as follows:

- March 15: Gatherings limited to 50 people or fewer, restaurants limited to take out and delivery, non-essential businesses subject to limited operating hours and occupancy
- March 16: Casinos, racetracks, gyms, and entertainment centers closed

- March 21: State-wide stay-at-home order issued, all non-essential businesses closed, all gatherings of more than 10 people cancelled, businesses mandated to accommodate work-from-home wherever practical
- March 24: Cash collection suspended on all NJTA facilities
- April 10: All non-essential construction projects halted and essential retail businesses that had been allowed to remain open limited to 50% capacity
- May 18: Construction projects allowed to resume
- May 19: Cash collection resumed on all NJTA facilities
- June 9: State-wide stay-at-home order lifted
- June 15: Restaurants and retail stores allowed to open with limited capacity
- July 2: Atlantic City casinos allowed to open
- July 26: Last of nine Atlantic City casinos reopened

The most significant year-over-year declines were experienced in April (the first full month of the pandemic), where total transactions and revenue decreased by 63.1% and 60.1%, respectively, from the previous year. Since April, the monthly decline over the same month in 2019 has diminished such that by August 2020, total Turnpike transactions and toll revenue were down by 21.7% and 19.7%, respectively. Throughout the pandemic, passenger car transactions have experienced steeper declines than commercial vehicle transactions.

GARDEN STATE PARKWAY

Monthly transaction and toll revenue trends for the Garden State Parkway (the Parkway) from January 2015 to August 2020 are shown in Table 3 and 4, respectively. It should be noted that given the commercial vehicle restrictions on the Parkway north of interchange 105 and the resulting low volumes (less than 1.5% of total transactions), very small nominal changes in commercial vehicle volumes can have large relative impacts. This is evident in the commercial vehicle transaction and revenue growth rates shown in Tables 3 and 4 for the Parkway.

Many of the events that impacted Turnpike transactions and toll revenue also impacted Parkway transactions and toll revenue. In addition, several casino closures in the Atlantic City area negatively impacted transactions and toll revenue on the Parkway in 2014 and 2015.

Table 3
Historical Toll Transaction Trends By Month
Garden State Parkway
(Thousands of Vehicles)

Passenger Car Transactions

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	25,831 (2)	4.9	27,091	5.0	28,442	(0.3)	28,370	(0.9)	28,118	3.3	29,033
February	24,629 (2)	12.0	27,586 (1)	(2.2)	26,977	1.7	27,443	(3.8)	26,403	7.0	28,258 (1)
March	28,779 (2)	8.5	31,218	(3.0)	30,292 (2)	(1.1)	29,971	2.0	30,581	(29.6)	21,539 (4)
April	30,531	1.5	31,004	1.9	31,604	0.2	31,659	(1.7)	31,128	(60.7)	12,226 (4)
May	33,180	0.4	33,299	1.5	33,795	1.6	34,338	(2.2)	33,594	(44.6)	18,604 (4)
June	33,376	4.5	34,886	1.0	35,232	0.8	35,525	(4.2)	34,021	(23.9)	25,902 (4)
July	36,442	0.5	36,610	0.4	36,746	0.6	36,967	(2.1)	36,192	(14.6)	30,914 (4)
August	36,838	0.8	37,123	0.4	37,266	(1.9)	36,562	0.5	36,752	(12.9)	32,026 (4)
September	32,374	0.8	32,644	1.1	33,002	(4.2)	31,620	2.4	32,375		
October	31,751	1.0	32,068	2.7	32,945	(2.1)	32,262	(0.7)	32,038		
November	29,722	2.3	30,409	1.9	30,981	(3.9)	29,779	1.2	30,126		
December	30,640	0.0	30,648	(0.5)	30,504	(1.6)	30,013	(0.8)	29,783		
TOTAL (5)	374,093	2.8	384,586	0.8	387,786	(0.8)	384,509	(0.9)	381,110		
Subtotal (5) Jan.-Aug.	249,606	3.7	258,817	0.6	260,354	0.2	260,835	(1.6)	256,789	(22.7)	198,503

Commercial Vehicle Transactions (3)

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	323 (2)	6.2	343	5.2	361	6.9	386	0.8	389	11.8	435
February	322 (2)	7.8	347 (1)	(5.5)	328	6.4	349	6.6	372	11.3	414 (1)
March	381 (2)	9.7	418	(7.2)	388 (2)	2.3	397	7.8	428	(5.4)	405 (4)
April	429	5.1	451	(11.1)	401	8.5	435	6.9	465	(32.9)	312 (4)
May	482	1.0	487	1.2	493	4.5	515	4.3	537	(25.0)	403 (4)
June	491	(2.6)	478	2.5	490	2.4	502	1.8	511	(6.8)	476 (4)
July	514	(10.7)	459	4.8	481	4.2	501	9.0	546	(7.0)	508 (4)
August	489	(4.9)	465	5.2	489	1.0	494	5.1	519	(3.7)	500 (4)
September	455	(7.7)	420	5.0	441	(5.0)	419	16.5	488		
October	474	(11.6)	419	7.9	452	6.6	482	6.4	513		
November	443	(14.2)	380	6.1	403	4.7	422	5.5	445		
December	386	(7.8)	356	7.3	382	(0.3)	381	12.3	428		
TOTAL (5)	5,189	(3.2)	5,023	1.7	5,109	3.4	5,283	6.8	5,641		
Subtotal (5) Jan.-Aug.	3,431	0.5	3,448	(0.5)	3,431	4.3	3,579	5.3	3,767	(8.3)	3,455

Total Transactions

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	26,154 (2)	4.9	27,434	5.0	28,803	(0.2)	28,756	(0.9)	28,507	3.4	29,468
February	24,951 (2)	12.0	27,933 (1)	(2.2)	27,305	1.8	27,792	(3.7)	26,775	7.1	28,673 (1)
March	29,160 (2)	8.5	31,636	(3.0)	30,680 (2)	(1.0)	30,368	2.1	31,009	(29.2)	21,944 (4)
April	30,960	1.6	31,455	1.7	32,005	0.3	32,094	(1.6)	31,593	(60.3)	12,538 (4)
May	33,662	0.4	33,786	1.5	34,288	1.6	34,853	(2.1)	34,131	(44.3)	19,007 (4)
June	33,867	4.4	35,364	1.0	35,722	0.9	36,027	(4.1)	34,532	(23.6)	26,378 (4)
July	36,956	0.3	37,069	0.4	37,227	0.6	37,468	(1.9)	36,738	(14.5)	31,422 (4)
August	37,327	0.7	37,588	0.4	37,755	(1.9)	37,056	0.6	37,271	(12.7)	32,526 (4)
September	32,829	0.7	33,064	1.1	33,443	(4.2)	32,039	2.6	32,863		
October	32,225	0.8	32,487	2.8	33,397	(2.0)	32,744	(0.6)	32,551		
November	30,165	2.1	30,789	1.9	31,384	(3.8)	30,201	1.2	30,571		
December	31,026	(0.1)	31,004	(0.4)	30,886	(1.6)	30,394	(0.6)	30,211		
TOTAL (5)	379,282	2.7	389,609	0.8	392,895	(0.8)	389,792	(0.8)	386,752		
Subtotal (5) Jan.-Aug.	253,037	3.6	262,265	0.6	263,785	0.2	264,414	(1.5)	260,556	(22.5)	201,957

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Consists of Classes 2 through 6, and B2 and B3. Heavy trucks, registered as 10,000 lbs or more (6 tires or 3-or-more-axles), are prohibited north of Interchange 105.
(4) COVID-19 pandemic
(5) Totals may not equal the sum of all months due to rounding.
Source: NJTA

Table 4
Historical Gross Toll Revenue Trends By Month
Garden State Parkway
(Thousands of Dollars)

Passenger Car Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$27,396 (2)	4.4	$28,613	5.2	$30,095	(0.5)	$29,945	2.6	$30,725	2.8	$31,576
February	26,034 (2)	12.7	29,351 (1)	(3.2)	28,415	2.3	29,062	(0.8)	28,840	6.8	30,814 (1)
March	30,573 (2)	8.5	33,178	(3.5)	32,014 (2)	(0.7)	31,804	5.0	33,389	(30.3)	23,258 (4)
April	32,625	0.7	32,860	2.1	33,560	0.3	33,644	1.4	34,122	(67.0)	11,271 (4)
May	35,690	(0.5)	35,518	1.3	35,987	1.4	36,494	1.0	36,867	(49.4)	18,653 (4)
June	36,024	3.7	37,359	0.9	37,713	1.0	38,075	(1.6)	37,480	(21.6)	29,385 (4)
July	39,568	0.3	39,689	0.1	39,711	1.4	40,281	(0.1)	40,259	(14.8)	34,298 (4)
August	40,207	0.5	40,394	(0.1)	40,338	1.3	40,873	0.3	40,981	(13.4)	35,474 (4)
September	34,828	0.1	34,877	1.2	35,279	0.7	35,526	0.6	35,734		
October	33,841	1.0	34,174	2.4	34,990	1.0	35,327	(0.7)	35,074		
November	31,652	1.8	32,208	(0.5)	32,059	2.2	32,757	0.6	32,949		
December	32,472	(0.4)	32,346	(0.3)	32,235	1.9	32,844	(1.3)	32,433		
TOTAL (5)	$400,910	2.4	$410,567	0.4	$412,396	1.0	$416,632	0.5	$418,853		
Subtotal (5) Jan.-Aug.	268,117	3.3	276,962	0.3	277,833	0.8	280,178	0.9	282,663	(24.0)	$214,729

Commercial Vehicle Toll Revenue (3)

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$984 (2)	2.0	$1,004	9.4	$1,098	5.7	$1,161	(2.4)	$1,133	8.1	$1,225
February	945 (2)	8.1	1,022 (1)	(5.3)	968	5.8	1,024	5.3	1,078	7.1	1,154 (1)
March	1,130 (2)	9.9	1,242	(5.3)	1,176 (2)	0.8	1,185	4.5	1,238	(5.4)	1,171 (4)
April	1,299	3.6	1,346	(8.2)	1,235	6.6	1,317	5.7	1,392	(40.7)	826 (4)
May	1,480	(0.7)	1,470	3.3	1,519	2.0	1,550	3.0	1,597	(29.3)	1,129 (4)
June	1,520	(0.3)	1,515	1.1	1,532	0.6	1,541	0.6	1,550	(2.5)	1,512 (4)
July	1,643	(9.4)	1,489	1.6	1,513	4.8	1,585	6.6	1,689	(10.8)	1,507 (4)
August	1,582	(1.9)	1,552	0.9	1,566	1.8	1,594	3.6	1,651	(10.4)	1,479 (4)
September	1,435	(8.2)	1,318	5.4	1,389	(1.7)	1,365	9.7	1,498		
October	1,472	(10.0)	1,325	3.0	1,365	17.6	1,605	(3.0)	1,557		
November	1,307	(10.6)	1,169	3.1	1,205	7.4	1,294	1.8	1,317		
December	1,155	(6.1)	1,085	10.1	1,195	(3.8)	1,150	7.7	1,239		
TOTAL (5)	$15,952	(2.6)	$15,537	1.4	$15,761	3.9	$16,371	3.5	$16,939		
Subtotal (5) Jan.-Aug.	10,583	0.5	10,640	(0.3)	10,607	3.3	10,957	3.4	11,328	(11.7)	$10,004

Total Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2019
January	$28,380 (2)	4.4	$29,617	5.3	$31,193	(0.3)	$31,106	2.4	$31,858	3.0	$32,801
February	26,979 (2)	12.6	30,373 (1)	(3.3)	29,383	2.4	30,086	(0.6)	29,918	6.9	31,968 (1)
March	31,703 (2)	8.6	34,420	(3.6)	33,190 (2)	(0.6)	32,989	5.0	34,627	(29.4)	24,430 (4)
April	33,924	0.8	34,206	1.7	34,795	0.5	34,961	1.6	35,514	(65.9)	12,096 (4)
May	37,170	(0.5)	36,988	1.4	37,506	1.4	38,044	1.1	38,464	(48.6)	19,782 (4)
June	37,544	3.5	38,874	1.0	39,245	0.9	39,616	(1.5)	39,030	(20.8)	30,897 (4)
July	41,211	(0.1)	41,178	0.1	41,224	1.6	41,866	0.2	41,948	(14.6)	35,805 (4)
August	41,789	0.4	41,946	(0.1)	41,904	1.3	42,467	0.4	42,632	(13.3)	36,953 (4)
September	36,263	(0.2)	36,195	1.3	36,668	0.6	36,891	0.9	37,232		
October	35,313	0.5	35,499	2.4	36,355	1.6	36,932	(0.8)	36,631		
November	32,959	1.3	33,377	(0.3)	33,264	2.4	34,051	0.6	34,266		
December	33,627	(0.6)	33,431	(0.0)	33,430	1.7	33,994	(0.9)	33,672		
TOTAL (5)	$416,862	2.2	$426,104	0.5	$428,157	1.1	$433,003	0.6	$435,792		
Subtotal (5) Jan.-Aug.	278,700	3.2	287,602	0.3	288,440	0.9	291,135	1.0	293,991	(23.6)	$224,733

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Consists of Classes 2 through B3. Heavy trucks, registered as 10,000 lbs or more (6 tires or 3-or-more-axles), are prohibited north of Interchange 105.
attributed to passenger cars. A comparison of commercial vehicle toll revenue to the prior year is not valid. The lost revenue exhibited for the commercial vehicles was added to the car category, but due to the relatively low value of the revenue shift, the impact is not noticeable for passenger cars.
(4) COVID-19 pandemic
(5) Totals may not equal the sum of all months due to rounding.
Source: NJTA

From 2015 to 2016 passenger car transactions and toll revenue increased 2.8% and 2.4%, respectively, and commercial vehicle transactions and toll revenue decreased 3.2% and 2.6%, respectively. In total, transactions grew by 2.7% and toll revenue grew by 2.2% compared to 2015. The overall growth reflected low fuel prices and an extra day for leap year in 2016.

In 2017 passenger car transactions and toll revenue increased 0.8% and 0.4%, respectively, compared to 2016. Commercial vehicle transactions and toll revenue increased 1.7% and 1.4%, respectively. In total, transactions grew 0.8% and toll revenue increased by 0.5% in 2017 compared to 2016.

In 2018 passenger car transactions decreased 0.8% and toll revenue increased 1.0% compared to the same period in 2017. Commercial vehicle transactions and toll revenue increased 3.4% and 3.9%, respectively. In total, transactions decreased 0.8% and toll revenue increased by 1.1% in 2018 compared to 2017.

In 2019 passenger car transactions decreased 0.9% and toll revenue increased 0.5% compared to 2018. Commercial vehicle transactions and toll revenue have increased 6.8% and 3.5%, respectively. In total, transactions declined by 0.8% and toll revenue has increased by 0.6% in 2019 compared to 2018.

Thus far in 2020, year-to-date (January through August) passenger car transactions have decreased by 22.7% and toll revenue has decreased 24.0% compared to the same period in 2019. Commercial vehicle transactions decreased 8.3% and toll revenue decreased by 11.7%. In total, transactions fell 22.5% and toll revenue decreased by 23.6% in the first eight months of 2020 compared to the same period in 2019.

As was the case with the Turnpike, the COVID-19 pandemic has been the dominant factor in the significant decreases in transactions and revenue experienced in the last six months of 2020. Prior to the pandemic, total transactions and revenue had increased through each of the first two months of the year compared to 2019. As with the Turnpike, the previously listed economic and travel restrictions significantly impacted transactions and revenue on the Parkway. While most of these restrictions were applicable to the entire state, the extended closure of the casino industry, which is concentrated in Atlantic City, likely disproportionately affected the Parkway more than the Turnpike. Conversely, the perception of beaches as relatively safer locations may have helped to keep the Jersey Shore as an attractive summer travel destination and buffered some of the transactions and revenue losses experienced on the Parkway.

The most significant year-over-year declines on the Parkway were experienced in April (the first full month of the pandemic), where total transactions and revenue decreased by 60.3% and 65.9%, respectively, from the previous year. Each successive month has experienced a smaller year-over-year decrease in transactions and revenue such that in August total transactions and revenue declined by only 12.7% and 13.3%, respectively. Throughout the pandemic, Parkway passenger car transactions have experienced steeper declines than commercial vehicle transactions.

NJTA SYSTEM TOTAL

Table 5 shows monthly toll revenue trends for the Authority's roadways from January 2015 through August 2020. Compared to the preceding year, total systemwide toll revenue increased 3.1% in 2016, 0.6% in 2017, and 2.1% in 2018. In 2019, total toll revenue was essentially flat as compared to 2018, decreasing by less than $60,000 in total (less than 0.1%). In the first eight months of 2020, total toll revenue decreased by 24.4%. Total NJTA system toll revenue decreased by 17.9% in August 2020 compared to the same month in 2019.

While the system-wide transaction and revenue decreases experienced in the most recent month (August 2020) are significant, the monthly drop-off from 2019 figures has been decreasing for both passenger-cars and commercial-vehicles for each of the last four months. This may indicate that, in terms of impacts to vehicle transactions and revenue, the worst of the pandemic may be in the past.

FORECAST VERSUS ACTUAL EXPERIENCE

The purpose of this section is to review actual versus estimated transactions and revenue experience since completion of CDM Smith's last investment grade study (dated September 21, 2018). The first forecast month at that time was August 2018. Thus, the comparison period is comprised of 25 months, including August 2018 through August 2020. Tables 6 through 8 provide this comparison for the Turnpike, the Parkway and the total NJTA system, respectively.

It should be emphasized that considerable variations may exist between actual and forecast values on a monthly basis. Weather events, accidents, and other variables can impact day-to-day and month-to-month traffic in ways that would be difficult to forecast with precision. Because of these variations, actual transactions and revenue can be higher or lower than estimates, sometimes in the extreme, on a short-term basis. While CDM Smith forecasts attempt to take as many of these factors into account as possible (when they are known and can be quantified), our forecasts are much more meaningful when considering them with a longer-term perspective. As such, while the information provided in Tables 6 through 8 show monthly variations between actual and forecast values, the more important comparison should be at the aggregate level for the entire comparison period. However, because demand for travel began to plummet beginning in March 2020 due to the unforeseen COVID-19 pandemic, even these aggregate-level comparisons, after February 2020, show a significant discrepancy between actual and forecasted values as travelers are now operating under a new paradigm that the previous forecast was unable to account for.

Table 5
Historical Gross Toll Revenue Trends By Month
Total of All Vehicle Classes
(Thousands of Dollars)

New Jersey Turnpike

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$76,146 (2,3)	4.7	$79,762 (3)	7.0	$85,323 (3,4)	1.1	$86,222 (3)	3.4	$89,153	1.1	$90,114
February	72,614 (2,3)	12.0	81,306 (1,3)	(5.7)	76,691 (3,4)	7.1	82,109 (3)	0.3	82,350	4.5	86,062 (1)
March	86,095 (2,3)	9.5	94,269 (3)	(5.0)	89,557 (3,4)	3.7	92,908 (3)	1.9	94,628	(23.5)	72,355 (5)
April	93,391 (3)	0.4	93,785 (3)	3.3	96,872 (3)	1.1	97,932 (3)	1.7	99,591	(60.1)	39,720 (5)
May	98,246 (3)	1.3	99,532 (3)	2.6	102,108 (3)	1.6	103,714 (3)	(0.6)	103,141	(46.5)	55,208 (5)
June	97,340 (3)	3.8	101,079 (3)	1.7	102,840 (3)	0.9	103,794 (3)	(1.5)	102,195	(25.7)	75,954 (5)
July	103,077 (3)	1.0	104,128 (3)	0.0	104,148 (3)	2.3	106,507	(1.2)	105,183	(19.9)	84,287 (5)
August	103,089 (3)	3.1	106,323 (3)	1.3	107,676 (3)	1.8	109,634	(1.5)	107,995	(19.7)	86,763 (5)
September	93,074 (3)	2.9	95,758 (3)	1.5	97,172 (3)	(0.0)	97,147	0.1	97,237		
October	96,825 (3)	1.6	98,352 (3)	1.3	99,595 (3)	4.3	103,923	(2.5)	101,278		
November	92,405 (3)	3.1	95,274 (3)	(0.5)	94,759 (3)	3.4	97,942	(0.8)	97,203		
December	93,965 (3)	1.1	94,989 (3)	0.0	94,997 (3)	2.6	97,490	(1.0)	96,520		
TOTAL (6)	$1,106,267	3.5	$1,144,557	0.6	$1,151,738	2.4	$1,179,322	(0.2)	$1,176,474		
Subtotal (6) Jan.-Aug.	729,998	4.1	760,184	0.7	765,215	2.3	782,820	0.2	784,236	(24.7)	$590,464

Garden State Parkway

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$28,380 (2)	4.4	$29,617	5.3	$31,193	(0.3)	$31,106	2.4	$31,858	3.0	$32,801
February	26,979 (2)	12.6	30,373 (1)	(3.3)	29,383	2.4	30,086	(0.6)	29,918	6.9	31,968 (1)
March	31,703 (2)	8.6	34,420	(3.6)	33,190	(0.6)	32,989	5.0	34,627	(29.4)	24,430 (5)
April	33,924	0.8	34,206	1.7	34,795	0.5	34,961	1.6	35,514	(65.9)	12,096 (5)
May	37,170	(0.5)	36,988	1.4	37,506	1.4	38,044	1.1	38,464	(48.6)	19,782 (5)
June	37,544	3.5	38,874	1.0	39,245	0.9	39,616	(1.5)	39,030	(20.8)	30,897 (5)
July	41,211	(0.1)	41,178	0.1	41,224	1.6	41,866	0.2	41,948	(14.6)	35,805 (5)
August	41,789	0.4	41,946	(0.1)	41,904	1.3	42,467	0.4	42,632	(13.3)	36,953 (5)
September	36,263	(0.2)	36,195	1.3	36,668	0.6	36,891	0.9	37,232		
October	35,313	0.5	35,499	2.4	36,355	1.6	36,932	(0.8)	36,631		
November	32,959	1.3	33,377	(0.3)	33,264	2.4	34,051	0.6	34,266		
December	33,627	(0.6)	33,431	(0.0)	33,430	1.7	33,994	(0.9)	33,672		
TOTAL (6)	$416,862	2.2	$426,104	0.5	$428,157	1.1	$433,003	0.6	$435,792		
Subtotal (6) Jan.-Aug.	278,700	3.2	287,602	0.3	288,440	0.9	291,135	1.0	293,991	(23.6)	$224,733

Total Toll Revenue

Month	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018	Percent Change	2019	Percent Change	2020
January	$104,526 (2,3)	4.6	$109,379 (3)	6.5	$116,516 (3,4)	0.7	$117,328 (3)	3.1	$121,011	1.6	$122,915
February	99,593 (2,3)	12.1	111,679 (1,3)	(5.0)	106,074 (3,4)	5.8	112,195 (3)	0.1	112,268	5.1	118,030 (1)
March	117,798 (2,3)	9.2	128,689 (3)	(4.6)	122,747 (3,4)	2.6	125,897 (3)	2.7	129,255	(25.1)	96,785 (5)
April	127,315 (3)	0.5	127,991 (3)	2.9	131,667 (3)	0.9	132,893 (3)	1.7	135,105	(61.6)	51,816 (5)
May	135,416 (3)	0.8	136,520 (3)	2.3	139,614 (3)	1.5	141,758 (3)	(0.1)	141,605	(47.0)	74,990 (5)
June	134,884 (3)	3.8	139,953 (3)	1.5	142,085 (3)	0.9	143,410 (3)	(1.5)	141,225	(24.3)	106,851 (5)
July	144,288 (3)	0.7	145,306 (3)	0.0	145,372 (3)	2.1	148,373	(0.8)	147,131	(18.4)	120,092 (5)
August	144,878 (3)	2.3	148,269 (3)	0.9	149,580 (3)	1.7	152,101	(1.0)	150,627	(17.9)	123,716 (5)
September	129,337 (3)	2.0	131,953 (3)	1.4	133,840 (3)	0.1	134,038	0.3	134,469		
October	132,138 (3)	1.3	133,851 (3)	1.6	135,950 (3)	3.6	140,855	(2.1)	137,909		
November	125,364 (3)	2.6	128,651 (3)	(0.5)	128,023 (3)	3.1	131,993	(0.4)	131,469		
December	127,592 (3)	0.6	128,420 (3)	0.0	128,427 (3)	2.4	131,484	(1.0)	130,192		
TOTAL (6)	$1,523,129	3.1	$1,570,661	0.6	$1,579,895	2.1	$1,612,325	(0.0)	$1,612,266		
Subtotal (6) Jan.-Aug.	1,008,698	3.9	1,047,786	0.6	1,053,655	1.9	1,073,955	0.4	1,078,227	(24.4)	$815,196

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) Construction on the Pulaski Skyway positively impacted passenger car traffic on the Turnpike.
(4) Delaware River Turnpike Bridge was closed to all traffic from January 20, 2017 through March 9, 2017.
(5) COVID-19 pandemic
(6) Totals may not equal the sum of all months due to rounding.
Source: NJTA

Table 6 provides a comparison of actual Turnpike transactions and toll revenue to forecast transactions and toll revenue over the 25-month period ending in August 2020 for cars and commercial vehicles. As shown, actual passenger car transactions for the 25 months were 7.6% below estimates and commercial vehicle transactions were 4.3% below estimates. When passenger car and commercial vehicle transactions are combined, total actual transactions were 7.2% below estimates.

Actual Turnpike toll revenue experience for passenger cars over this same period underperformed CDM Smith estimates by 8.4%. Commercial vehicle revenue was 5.9% below estimates. Absent the malfunctioning AVC loops at Interchange 18W (described above), total Turnpike commercial revenue would have been about 4.9% below estimates over this period. For the total Turnpike, actual revenue experience lagged forecasts by 7.6%. Total revenue would have underperformed forecasts by 7.3% absent the Interchange 18W AVC loop malfunction. However, for the 19-month period (August 2018 through February 2020) prior to the COVID-19 impacts, total Turnpike transaction and revenue collections exceeded CDM Smith's estimates by 2.8% and 1.2%, respectively.

Table 7 shows similar information for the Garden State Parkway, though comparisons are only made on a total vehicle basis since commercial vehicles make up such a small (about 1.5%) portion of toll transactions on the Parkway. As shown, total actual toll transactions were 7.0% lower than estimates and total actual toll revenue was 7.6% below the estimates for the 25-month period ending in August 2020. For the 19-month August 2018 through February 2020 period, which excludes the impacts of COVID-19, total Parkway transactions and revenue exceeded CDM Smith's estimates by 1.0% and 0.9%, respectively.

Table 8 shows a summary of total Turnpike, Parkway, and systemwide toll revenue. As shown, actual total Turnpike toll revenue has been 7.6% lower than estimated Turnpike total revenue for the 25-month period ending in August 2020. Total Parkway toll revenue was also 7.6% below the estimate for the same period. Total combined systemwide actual toll revenue was 7.6% lower than the CDM Smith estimate. Absent the Turnpike Interchange 18W AVC malfunction, total actual toll revenue would have underperformed CDM Smith estimates by about 7.4%. Prior to the impacts of COVID-19 (i.e., through February 2020) total actual toll revenue exceeded CDM Smith estimates by 1.1%.

Table 6
Comparison of Estimated and Actual Monthly Transactions and Toll Revenue
New Jersey Turnpike

Transactions (thousands)

Month	Year	Passenger Cars Estimate (1)	Passenger Cars Percent Change (2)	Passenger Cars Actual (3)	Commercial Vehicles Estimate (1)	Commercial Vehicles Percent Change (2)	Commercial Vehicles Actual (3)	Total Vehicles Estimate (1)	Total Vehicles Percent Change (2)	Total Vehicles Actual (3)
August	2018	20,419	2.4	20,906	3,026	2.1	3,089	23,445	2.3	23,995
September	2018	18,878	1.4	19,151	2,921	(6.3)	2,736	21,798	0.4	21,887
October	2018	19,562	3.7	20,280	3,101	3.1	3,196	22,664	3.6	23,476
November	2018	18,666	1.9	19,013	2,813	3.0	2,898	21,479	2.0	21,911
December	2018	18,675	2.2	19,093	2,854	(4.5)	2,726	21,529	1.3	21,819
January	2019	16,298	6.6	17,369	2,684	6.1	2,847	18,982	6.5	20,216
February	2019	15,179	8.0	16,391	2,489	2.4	2,550	17,669	7.2	18,941
March	2019	18,059	6.2	19,186	2,876	(1.9)	2,822	20,936	5.1	22,008
April	2019	18,860	3.9	19,592	2,895	0.6	2,914	21,755	3.5	22,506
May	2019	19,881	3.3	20,544	2,988	1.6	3,035	22,869	3.1	23,579
June	2019	19,930	2.2	20,361	3,049	(8.4)	2,793	22,979	0.8	23,154
July	2019	20,841	0.4	20,919	3,026	(4.1)	2,903	23,867	(0.2)	23,822
August	2019	20,624	2.3	21,101	3,036	(5.2)	2,878	23,660	1.3	23,979
September	2019	19,062	2.3	19,507	2,982	(4.8)	2,839	22,044	1.4	22,346
October	2019	19,783	2.1	20,195	3,114	0.5	3,131	22,897	1.9	23,326
November	2019	18,769	2.3	19,202	2,834	(1.7)	2,786	21,603	1.8	21,988
December	2019	18,926	0.8	19,087	2,920	(3.4)	2,820	21,846	0.3	21,907
January	2020	16,540	7.1	17,716	2,730	5.9	2,891	19,270	6.9	20,607
February	2020	15,979	7.4	17,162	2,617	0.2	2,621	18,596	6.4	19,783
March	2020	18,327	(30.2)	12,796	2,925	(6.8)	2,726	21,252	(27.0)	15,522
April	2020	19,140	(67.7)	6,175	2,944	(27.9)	2,122	22,084	(62.4)	8,297
May	2020	20,176	(53.2)	9,437	3,038	(23.6)	2,321	23,214	(49.3)	11,758
June	2020	20,226	(37.5)	12,641	3,101	(12.8)	2,705	23,327	(34.2)	15,346
July	2020	21,151	(29.1)	14,987	3,077	(8.8)	2,806	24,228	(26.6)	17,793
August	2020	20,930	(23.7)	15,972	3,088	(9.5)	2,794	24,018	(21.9)	18,766
TOTAL		474,882	(7.6)	438,783	73,130	(4.3)	69,949	548,012	(7.2)	508,732
Subtotal (4)										
Aug. 2018 - Feb. 2020		$354,932	3.3	$366,775	$54,957	(0.9)	$54,475	$409,889	2.8	$421,250

Gross Toll Revenue (thousands of $)

Month	Year	Passenger Cars Estimate (1)	Passenger Cars Percent Change (2)	Passenger Cars Actual (3)	Commercial Vehicles Estimate (1)	Commercial Vehicles Percent Change (2)	Commercial Vehicles Actual (3)	Total Vehicles Estimate (1)	Total Vehicles Percent Change (2)	Total Vehicles Actual (3)
August	2018	$74,494	2.8	$76,586	$32,198	2.6	$33,048	$106,692	2.8	$109,634
September	2018	65,472	3.0	67,410	31,318	(5.0)	29,737	96,790	0.4	97,147
October	2018	67,758	2.6	69,544	33,779	1.8	34,379	101,537	2.3	103,923
November	2018	65,155	2.4	66,730	30,656	1.8	31,212	95,811	2.2	97,942
December	2018	64,934	4.5	67,826	30,631	(3.2)	29,664	95,566	2.0	97,490
January	2019	55,369	5.3	58,286	29,258	5.5	30,867	84,627	5.3	89,153
February	2019	52,017	6.6	55,450	26,924	(0.1)	26,900	78,941	4.3	82,350
March	2019	62,952	4.4	65,718	31,308	(7.7)	28,910	94,260	0.4	94,628
April	2019	66,552	4.1	69,287	31,406	(3.5)	30,304	97,958	1.7	99,591
May	2019	69,821	3.3	72,095	32,369	(4.1)	31,046	102,190	0.9	103,141
June	2019	70,860	3.0	73,014	32,739	(10.9)	29,181	103,599	(1.4)	102,195
July	2019	76,081	(0.7)	75,567	32,617	(9.2)	29,616	108,698	(3.2)	105,183
August	2019	75,226	2.9	77,412	32,278	(5.3)	30,583	107,504	0.5	107,995
September	2019	66,104	1.7	67,217	31,950	(6.0)	30,020	98,055	(0.8)	97,237
October	2019	68,523	(0.2)	68,379	33,893	(2.9)	32,899	102,416	(1.1)	101,278
November	2019	65,512	2.4	67,077	30,864	(2.4)	30,125	96,376	0.9	97,202
December	2019	65,803	1.5	66,767	31,312	(5.0)	29,753	97,115	(0.6)	96,520
January	2020	56,186	5.6	59,332	29,729	3.5	30,782	85,915	4.9	90,114
February	2020	54,807	5.7	57,933	28,315	(0.7)	28,129	83,122	3.5	86,062
March	2020	63,879	(33.0)	42,823	31,808	(7.2)	29,532	95,687	(24.4)	72,355
April	2020	67,531	(74.3)	17,348	31,908	(29.9)	22,372	99,439	(60.1)	39,720
May	2020	70,848	(56.6)	30,721	32,886	(25.5)	24,487	103,734	(46.8)	55,208
June	2020	71,895	(36.3)	45,763	33,258	(9.2)	30,191	105,153	(27.8)	75,954
July	2020	77,189	(29.7)	54,266	33,135	(9.4)	30,021	110,324	(23.6)	84,287
August	2020	76,326	(24.6)	57,544	32,792	(10.9)	29,219	109,118	(20.5)	86,763
TOTAL		$1,671,293	(8.4)	$1,530,095	$789,332	(5.9)	$742,977	$2,460,625	(7.6)	$2,273,072
Subtotal (4)										
Aug. 2018 - Feb. 2020		$1,243,625	3.1	$1,281,630	$593,545	(2.8)	$577,155	$1,837,170	1.2	$1,858,785

(1) Estimates were developed by CDM Smith and presented to the New Jersey Turnpike Authority in the report titled *New Jersey Turnpike System 2018 Traffic and Toll Revenue Forecast Study* dated September 21, 2018.

(2) The actual experience is greater or less than the CDM Smith estimate by this percent.

(3) Actual data provided by the New Jersey Turnpike Authority.

(4) This subtotal represents the portion of the forecast period unimpacted by the COVID-19 pandemic.

Table 7
Comparison of Estimated and Actual Monthly Transactions and Toll Revenue
Garden State Parkway

		Transactions (thousands)			Toll Revenue (thousands)		
Month	Year	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)
August	2018	36,924	0.4	37,056	$42,439	0.1	$42,467
September	2018	32,548	(1.6)	32,039	36,963	(0.2)	36,891
October	2018	32,131	1.9	32,744	36,166	2.1	36,932
November	2018	30,242	(0.1)	30,201	33,264	2.4	34,051
December	2018	30,460	(0.2)	30,394	34,169	(0.5)	33,994
January	2019	27,670	3.0	28,507	30,989	2.8	31,858
February	2019	25,921	3.3	26,775	29,051	3.0	29,918
March	2019	30,052	3.2	31,009	33,796	2.5	34,627
April	2019	31,304	0.9	31,593	35,303	0.6	35,514
May	2019	33,794	1.0	34,131	38,188	0.7	38,464
June	2019	34,762	(0.7)	34,532	39,571	(1.4)	39,030
July	2019	36,850	(0.3)	36,738	42,622	(1.6)	41,948
August	2019	37,354	(0.2)	37,271	42,944	(0.7)	42,632
September	2019	32,795	0.2	32,863	37,257	(0.1)	37,232
October	2019	32,494	0.2	32,551	36,565	0.2	36,631
November	2019	30,314	0.8	30,571	33,376	2.7	34,266
December	2019	30,738	(1.7)	30,211	34,499	(2.4)	33,672
January	2020	27,987	5.3	29,468	31,361	4.6	32,801
February	2020	27,189	5.5	28,673	30,499	4.8	31,968
March	2020	30,397	(27.8)	21,944	34,197	(28.6)	24,430
April	2020	31,663	(60.4)	12,538	35,723	(66.1)	12,096
May	2020	34,181	(44.4)	19,007	38,643	(48.8)	19,782
June	2020	35,161	(25.0)	26,378	40,040	(22.8)	30,897
July	2020	37,272	(15.7)	31,422	43,124	(17.0)	35,805
August	2020	37,782	(13.9)	32,526	43,447	(14.9)	36,953
TOTAL		807,986	(7.0)	751,142	$914,198	(7.6)	$844,859
Subtotal (4)							
Aug. 2018 - Feb. 2020		$601,530	1.0	$607,327	$679,024	0.9	$684,896

(1) Estimates were developed by CDM Smith and presented to the New Jersey Turnpike Authority in the report titled *New Jersey Turnpike System 2018 Traffic and Toll Revenue Forecast Study* dated September 21, 2018.

(2) The actual experience is greater or less than the CDM Smith estimate by this percent.

(3) Actual data provided by the New Jersey Turnpike Authority.

(4) This subtotal represents the portion of the forecast period unimpacted by the COVID-19 pandemic.

Table 8
Comparison of System Total: Estimated and Actual Monthly Gross Toll Revenue

		Gross Toll Revenue (thousands of $)								
		New Jersey Turnpike			Garden State Parkway			NJTA Total System		
Month	Year	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)	Estimate (1)	Percent Change (2)	Actual (3)
August	2018	$106,692	2.8	$109,634	$42,439	0.1	$42,467	$149,131	2.0	$152,101
September	2018	96,790	0.4	97,147	36,963	(0.2)	36,891	133,753	0.2	134,038
October	2018	101,537	2.3	103,923	36,166	2.1	36,932	137,703	2.3	140,855
November	2018	95,811	2.2	97,942	33,264	2.4	34,051	129,075	2.3	131,993
December	2018	95,566	2.0	97,490	34,169	(0.5)	33,994	129,735	1.3	131,484
January	2019	84,627	5.3	89,153	30,989	2.8	31,858	115,616	4.7	121,011
February	2019	78,941	4.3	82,350	29,051	3.0	29,918	107,992	4.0	112,268
March	2019	94,260	0.4	94,628	33,796	2.5	34,627	128,056	0.9	129,255
April	2019	97,958	1.7	99,591	35,303	0.6	35,514	133,261	1.4	135,105
May	2019	102,190	0.9	103,141	38,188	0.7	38,464	140,379	0.9	141,605
June	2019	103,599	(1.4)	102,195	39,571	(1.4)	39,030	143,170	(1.4)	141,225
July	2019	108,698	(3.2)	105,183	42,622	(1.6)	41,948	151,320	(2.8)	147,131
August	2019	107,504	0.5	107,995	42,944	(0.7)	42,632	150,448	0.1	150,627
September	2019	98,055	(0.8)	97,237	37,257	(0.1)	37,232	135,311	(0.6)	134,469
October	2019	102,416	(1.1)	101,278	36,565	0.2	36,631	138,980	(0.8)	137,909
November	2019	96,376	0.9	97,202	33,376	2.7	34,266	129,752	1.3	131,468
December	2019	97,115	(0.6)	96,520	34,499	(2.4)	33,672	131,614	(1.1)	130,192
January	2020	85,915	4.9	90,114	31,361	4.6	32,801	117,276	4.8	122,915
February	2020	83,122	3.5	86,062	30,499	4.8	31,968	113,621	3.9	118,030
March	2020	95,687	(24.4)	72,355	34,197	(28.6)	24,430	129,884	(25.5)	96,785
April	2020	99,439	(60.1)	39,720	35,723	(66.1)	12,096	135,162	(61.7)	51,816
May	2020	103,734	(46.8)	55,208	38,643	(48.8)	19,782	142,377	(47.3)	74,990
June	2020	105,153	(27.8)	75,954	40,040	(22.8)	30,897	145,193	(26.4)	106,851
July	2020	110,324	(23.6)	84,287	43,124	(17.0)	35,805	153,448	(21.7)	120,092
August	2020	109,118	(20.5)	86,763	43,447	(14.9)	36,953	152,565	(18.9)	123,716
TOTAL		$2,460,625	(7.6)	$2,273,072	$914,198	(7.6)	$844,859	$3,374,824	(7.6)	$3,117,931
Subtotal (4) Aug. 2018 - Feb. 2020		$1,837,170	1.2	$1,858,785	$679,024	0.9	$684,896	$2,516,195	1.1	$2,543,681

(1) Estimates were developed by CDM Smith and presented to the New Jersey Turnpike Authority in the report titled *New Jersey Turnpike System 2018 Traffic and Toll Revenue Forecast Study* dated September 21, 2018.
(2) The actual experience is greater or less than the CDM Smith estimate by this percent.
(3) Actual data provided by the New Jersey Turnpike Authority.
(4) This subtotal represents the portion of the forecast period unimpacted by the COVID-19 pandemic.

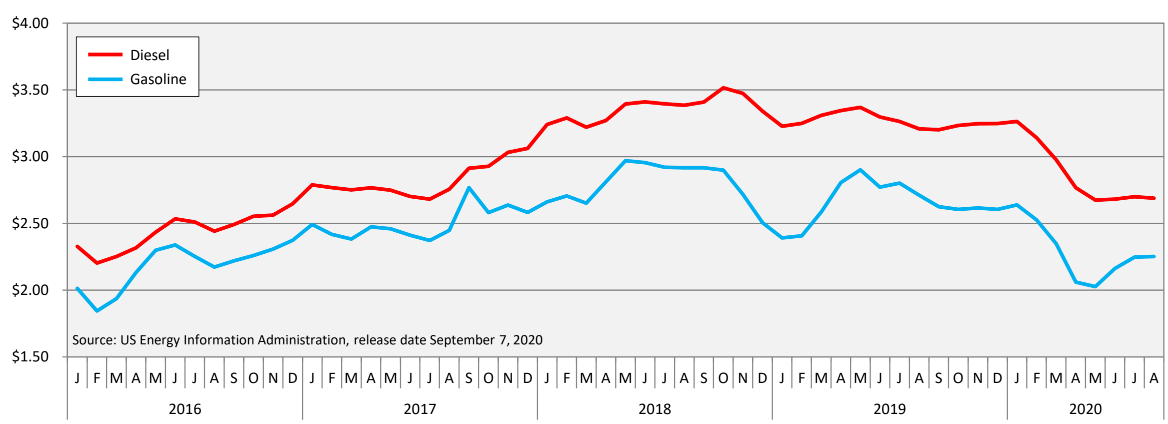
Transactions and Revenue Growth Explanatory Factors

Weather, toll increases, construction, and leap year impacts were discussed previously regarding their impacts on estimated transactions and toll revenue on the NJTA system. Additional variables that can be used to help guide forecasts and explain differences between forecast and actual data are motor fuel prices and general measures of the economy, such as those reflected by gross domestic product (GDP), consumer confidence, and unemployment rates. These are discussed below. Of course, beginning in March 2020, the single biggest factor affecting travel demand is the impact of COVID-19. As long as social distancing restrictions are in effect, and indeed, until people feel completely safe in returning to normal activities, the negative impacts of COVID-19 will likely continue to impact travel on both the Turnpike and Parkway.

MOTOR FUEL PRICES

Figure 1 includes gasoline and diesel prices for the Central Atlantic Region from January 2016 through August 2020. As shown, gasoline and diesel prices have followed similar trends throughout this period. In early 2016, gas prices fell to below $2.00 per gallon due to the expectations of low economic growth, lower global energy demand, and a global energy-supply glut. Gasoline prices generally increased throughout the rest of 2016 and remained relatively stable in 2017.

The increase of $0.32 per gallon in September 2017 can be attributed to supply disruptions associated with the impacts of Hurricanes Harvey and Irma. As of August 2020, gasoline prices averaged $2.25 per gallon, unchanged from the previous month, and 28 cents lower than in February. Diesel prices averaged $2.69 in August 2020, one cent lower than the previous month and 45 cents lower than in February. The significant price drop since February 2020 is due to both an increase is supply stemming from disagreements over production cuts between OPEC, Russia, and Saudi Arabia that occurred in mid-March as well as a decrease in demand due to the ongoing COVID-19 pandemic. However, the rise in gasoline prices from May to July likely reflects increasing travel demand since the low point recorded in April 2020.



Fuel Prices in Central Atlantic Region ($ Per Gallon)

Note: Retail Prices in USD for Regular All Formulations Retail Gasoline and Number 2 Diesel.

FIGURE 1

Based on current forecasts from the U.S. Energy Information Administration (EIA), gasoline prices are forecasted to remain stable over the rest of the year before slowly increasing in early 2021, eventually nearing pre-pandemic levels in summer 2021. Prices are then expected to remain relatively stable until the end of 2021, which is the end of the EIA forecast period. Diesel prices are forecasted to follow a similar trajectory, but with prices rising at a slower level and still not reaching pre-pandemic levels before the end of 2021. These forecasted low prices may help transactions and revenue figures for the Turnpike and Parkway rebound more quickly after the end of the ongoing COVID-19 pandemic.

CONSUMER CONFIDENCE

Consumer confidence is an important measure in that it highlights consumer's confidence in making purchases, their willingness to travel more, etc. Higher consumer confidence spurs demand for various goods and services, and it can be inferred that higher demand results in higher traffic on the roadways. Consumer confidence scores are indexed to the year 1985, for which consumer confidence equaled 100.

Figure 2 shows the Conference Board Consumer Confidence Index for the period between January 2017 and August 2020. The individual blue bars show the index values for each month while the dotted line shows the three-month moving average. With the exception of the last six months, consumer confidence gradually trended up over the period shown. The average exceeded 110 at the beginning of 2017, rose to 126 by the end of that year, and surpassed 130 in 2018, peaking at a high of 137.9 in October, which was the highest level of consumer confidence since September 2000. In 2019, consumer confidence fell slightly compared to 2018 but remained strong compared to historical levels.

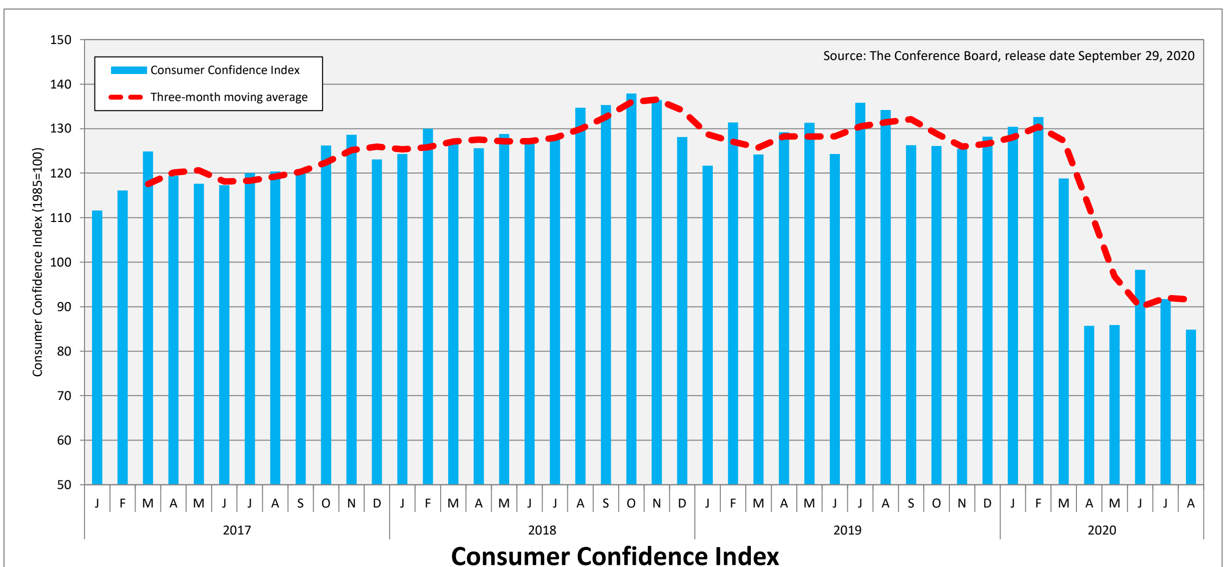


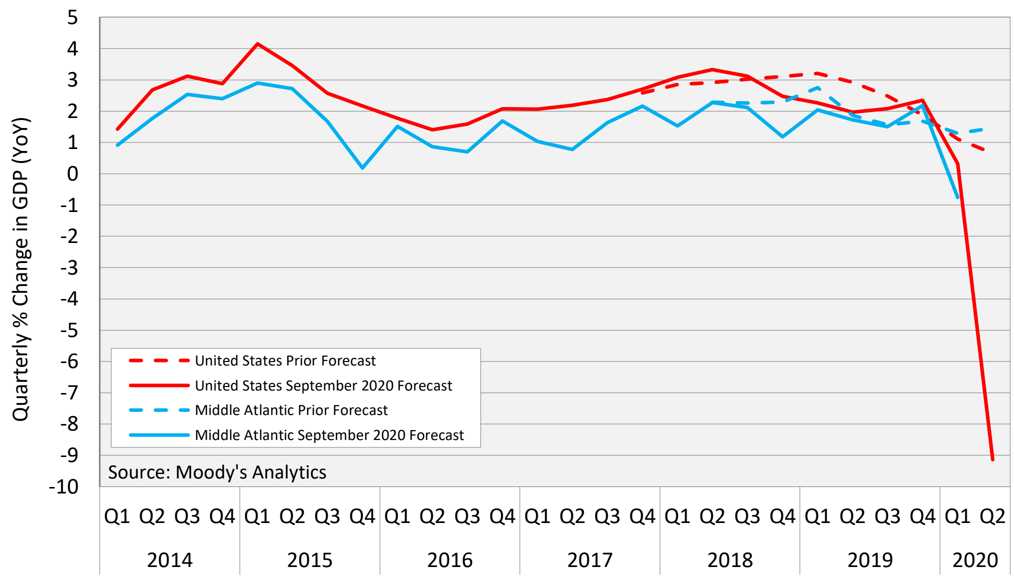
FIGURE 2

Through the first two months of 2020, consumer confidence remained strong, increasing slightly since the end of 2019. However, consumer confidence declined sharply in March and even more significantly in April, when it fell to 85.7, reflecting the widespread economic shutdowns that were put in place as a result of the COVID-19 pandemic. Consumer confidence rose slightly in May to 85.9, although this was still lower than in any other month since June 2014. In June, consumer confidence increased to 98.3, indicating that consumers' expectations for the economy may have been stabilizing. However, in July it fell to 91.7 and to 86.3 in August, which may be a reflection of increased COVID-19 infection rates that occurred in much of the southern and western U.S. during this time as those states began to loosen restrictions on commercial activities.

ACTUAL AND ESTIMATED GROSS DOMESTIC AND GROSS REGIONAL PRODUCT

The 2018 Forecast Study was based in part on U.S. gross domestic product (GDP) and gross regional product (GRP) forecasts for the mid-Atlantic states available in August 2018, both developed by Woods & Poole Economics, Inc. This information was a key input in developing estimated growth forecasts for the NJTA system. This section presents a comparison of GDP and GRP growth forecasts that were made at the time of the prior study with the actual GDP and GRP growth that has occurred between 2018 and 2020.

A graphic comparison between the economic indicators available for the 2018 Forecast Study and this current Draw Down letter are shown in Figure 3. The solid lines in Figure 3 show the actual quarterly year-over-year growth rates of U.S. GDP and Mid-Atlantic GRP from 2016 to the present. Data at the GDP level is available through the second quarter of 2020; data for GRP is only available through the first quarter of 2020. The dashed lines show the year-over-year GDP and GRP as forecasted in 2018. The most notable element of this comparison is the unprecedented and unpredicted decline in GDP that occurred in the first two quarters of 2020 due to economic restrctions put in place to combat the spread of COVID-19. Once 2020 second quarter actual data is available for GRP, we expect it to show the same pattern as GDP. While actual growth rates in 2018 and 2019 adhered relatively closely to the forecasted GDP and GRP, they were much lower in the first two quarters of 2020. Correlatedly, transactions and revenue during that time period were also significantly lower than forecasted.

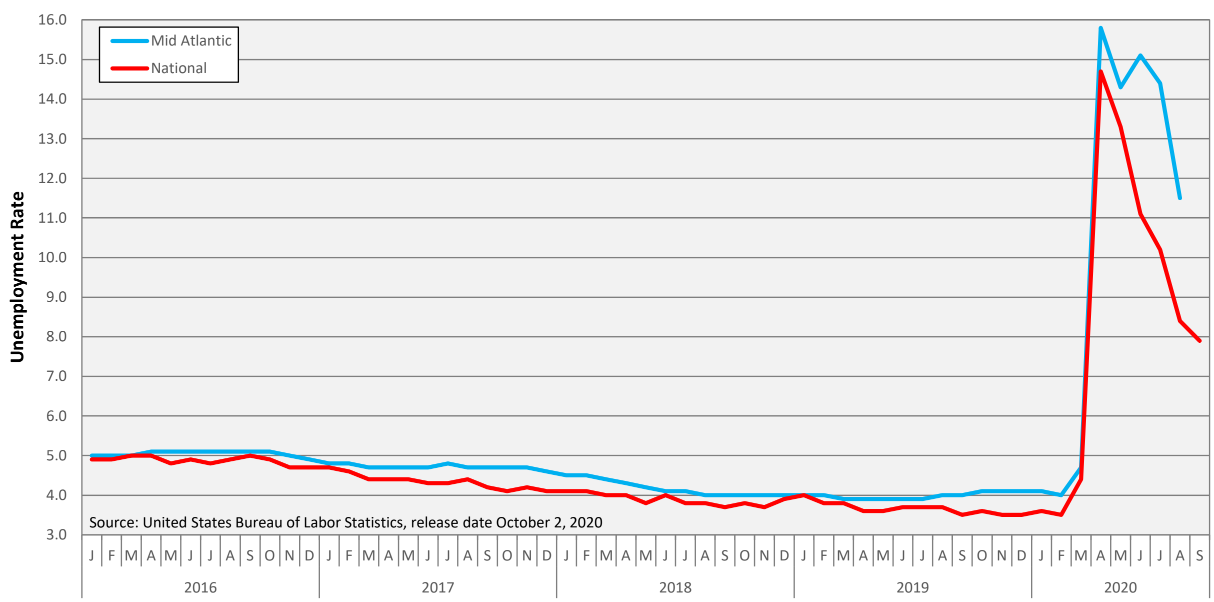


Comparison of Forecast and Actual Gross Domestic and Regional Product

FIGURE 3

UNEMPLOYMENT RATE

The unemployment rate is another indicator of the health of the economy and people's willingness, need, and ability to travel. The mid-Atlantic and national unemployment rates from January 2016 to the present are shown in Figure 4. Over most of this period unemployment steadily trended downward, decreasing from 5.0% (mid-Atlantic) and 4.9% (national) in January 2016 to 4.0% and 3.5% in February 2020. This corresponded to a period of generally increasing revenue on the NJTA system. However, in spring 2020 unemployment increased to unprecedented levels in response to the economic restrictions and distancing guidelines implemented to dampen the spread of COVID-19. The April 2020 unemployment rate reached 14.7% nationally and 15.8% in the mid-Atlantic region. While the unemployment rate has fallen in each successive month since then, it remained at historically high levels in September 2020, falling to 7.9% nationally and 11.5% in the mid-Atlantic region.



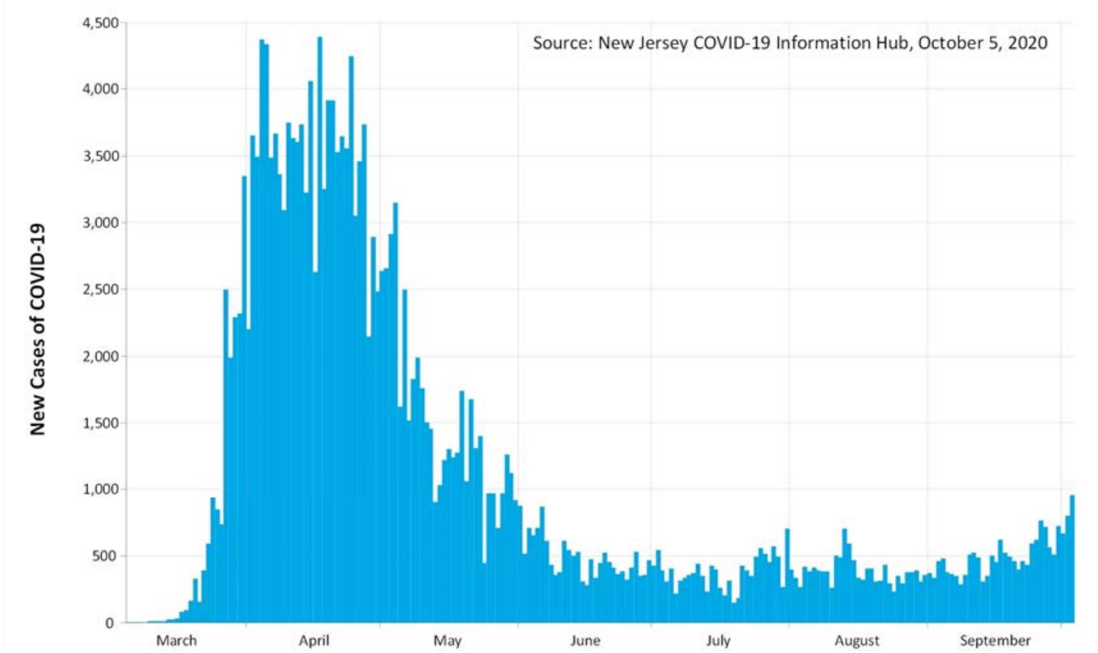
Seasonally Adjusted Unemployment Rate

FIGURE 4

COVID-19

As discussed, over the past few months the most significant driver of the economic indicators summarized above is the COVID-19 pandemic. The indicators discussed thus far have been economic in nature and driven by both restrictions placed on businesses, schools, and other gathering places, as well as the reticence of the general public to travel or congregate in crowded places. Even without government-mandated restrictions on business operating procedures due to public health concerns, there would likely be decreased demand for travel and significant impacts on Turnpike and Parkway transactions and toll revenue. Therefore, there is likely to be an inverse relationship between new diagnosed cases of COVID-19 and transactions and toll revenue for quite some time.

Figure 5 illustrates the new daily cases of COVID-19 throughout the state of New Jersey between March 10 and October 5, 2020. Within the State of New Jersey, the new caseload peaked in April, where more than 3,000 new cases were being confirmed each day. The number of new cases dropped by about half in May and by about half again in June. Over the course of the summer, the caseload stayed fairly constant, with most days seeing between 300 and 400 new cases a day. Transactions and revenue and all other indicators followed a similar pattern: a severe shock in late March and early April followed by consistent and gradual improvement over the remainder of the spring and summer. However, by the end of September and into the beginning of October the caseload began to increase again, with most days having more than 500 new cases diagnosed.



COVID-19 Cases in New Jersey
FIGURE 5

EXPLANATORY FACTORS SUMMARY

The underperformance of actual transactions and revenue experience compared to CDM Smith estimates is largely driven by the COVID-19 pandemic, both because of restrictions put in place by state and local governments, as well as the hesitancy of the public to travel. While economic indicators and transactions and toll revenue figures for NJTA facilities have begun to recover over the past few months, the recovery rate has slowed, and indicators remain far from pre-pandemic levels. These trends are expected to continue into the near future and have been factored into the short-term forecasts developed as part of this Draw Down Letter. The extent of the impact will be discussed in the next section.

New Transactions and Toll Revenue Forecast Assumptions

This section describes factors considered in the development of the updated transaction and toll revenue forecasts. A new baseline forecast was first developed. The baseline forecast excludes impacts related to COVID-19, systemwide toll increases in September 2020, implementation of tolling at Interchange 19W, and changes to the bus toll schedule. Tolling at Interchange 19W and changes to the bus toll schedule were also implemented at the time of the September 2020 toll increase.

This section then describes each of the specific adjustments that were considered and then applied to the baseline forecasts, including Interchange 19W tolling, bus toll schedule changes, systemwide toll increases, and COVID-19. This section describes the basic assumptions included in the forecast related to each of these factors. The following section will identify the specific transaction and toll revenue impacts and their impact on the updated baseline forecast.

BASELINE FORECAST

Turnpike and Parkway transactions and toll revenue forecasts were developed by reviewing and analyzing all factors discussed previously in this report. This baseline forecast is meant to reflect the expected transactions and revenue through 2030 under normal operating conditions. As such, the COVID-19 pandemic and recent and scheduled toll rate increases are not included in the baseline forecast. The impacts of these conditions will be estimated independently and summarized in the "Adjustments to Baseline Forecast" section of this letter report, after which they will then be aggregated and applied to the baseline forecast in order to develop the base case forecast.

Basic Assumptions

The following set of assumptions was used to develop the baseline forecast:

1. The toll rate structure and the discount program business rules as they existed through September 12, 2020 will be continued throughout the forecast period. No toll increase is assumed in the forecast period;
2. No new competing freeway or major arterial facilities, tolled or toll-free, will be constructed during the forecast period;
3. The Turnpike, Parkway, and their feeder routes will be well maintained, efficiently operated, and effectively signed and promoted to encourage maximum usage;
4. Economic growth indicators in the United States and the region will generally be in accordance with the long-term trends through February 2020 in order to exclude COVID-19 related impacts;
5. No reduced growth initiatives or related controls that would significantly inhibit normal development patterns will be introduced during the forecast period;

6. No national, regional, or local emergency will arise that would abnormally restrict usage of motor vehicles during the forecast period; and
7. Motor fuel will remain in adequate supply during the forecast period and future fuel prices will be in accordance with U.S. EIA projections discussed previously in the letter report and will not increase significantly over the consumer price index.

While the basic assumptions that support the baseline forecast are essentially a continuation of existing operations and economic trends prior to the COVID-19 pandemic, there are two known recent changes to the NJTA system that are explicitly modeled within the baseline forecast: tolling Turnpike Interchange 19W ramps and changes to the bus toll schedule. The estimated impacts of these changes were modeled and included within the baseline forecast.

Tolling Interchange at 19W Ramps

Interchange 19W on the Turnpike is situated adjacent to the Meadowlands sports and entertainment complex and immediately to the north of the tollbooths at the northern terminus of the Turnpike's western alignment (Interchange 18W). Until recently, this interchange was only open during the hours of scheduled events at the Meadowlands and allowed travelers to and from the north toll-free use of the ramps. On September 13, 2020 the interchange was opened for use at all times as a tolled E-ZPass only facility.

Bus Toll Schedule Changes

Federal regulations from the Fixing America's Surface Transportation (FAST) Act require that state, regional, and local tolling authorities set toll rates for the buses on an equitable basis. In order to meet these requirements, NJTA requested CDM Smith to evaluate a consistent tolling structure between the Turnpike and Parkway that would result in a net toll revenue neutral structure. This analysis indicated that a 40% discount for bus classes B2 and B3, versus the comparable Turnpike and Parkway rates for two-axle (C2) and three-axle (C3) commercial vehicles, would be revenue neutral. As such, the toll schedule for buses on the Turnpike and Parkway was recently amended to reflect this 40% discount, with changes taking effect on September 13, 2020. The 40% bus discount rate will result in slightly more bus revenue for the Turnpike, but an equal level loss of revenue on the Parkway.

Other Considerations

While not modeled explicitly, there are other factors that were considered in developing the baseline forecast. However, the effects of these factors are expected to be minimal and/or captured within the other forecast inputs.

New Jersey Motor Fuel Tax Increase

On November 1, 2016, the state gas tax in New Jersey increased by 23 cents per gallon, the first such increase since 1988. It increased again by 4.3 cents per gallon October 1, 2018 due to a 2016 law passed by the New Jersey legislature requiring that the gas tax be automatically adjusted so that it raises $2 billion in revenue each year to fund the state's Transportation Trust Fund. Due to a significant decrease in gasoline sales during the COVID-19 pandemic, the gas tax increased by 9.3 cents on October 1, 2020 to meet the $2 billion revenue target. The gas tax now stands at 50.7 cents per gallon for gasoline, which is the fourth-highest among all states, and 57.7 cents per gallon for diesel fuel.

Committed Roadway Improvements

Table 9 lists major roadway improvement projects with dedicated funding for projects on, or potentially affecting, NJTA facilities. CDM Smith provided a longer list of committed roadway improvements in the 2018 Forecast Study, however, many of the improvements listed in that report have since been substantially completed and few new projects have been added. Impacts from these completed projects are reflected in the existing transaction and revenue trends.

Table 9
Summary of Major Committed Improvements
Considered for the Transaction and Toll Revenue Analysis

Location	Description	Actual or Assumed Start Date	Assumed Completion Date
New Jersey Turnpike			
Newark Bay-Hudson County Extension	Replacement of the bridge deck in both directions	2016	2023
Garden State Parkway			
Int 38	New flyover ramp from Parkway northbound to Atlantic City Expressway westbound	2020	2022
Other Roadways			
I-295/NJ-42	Construction of new ramps to allow motorists to make movements that are not currently possible	2020	2024
I-295/I-76/NJ-42	Construction of direct connections and interchange enhancements	2014	2027

Sources: NJTPA FY 2020-2023 TIP
DVRPC FY 2020 for New Jersey (FY20-23)
DVRPC FY 2021 TIP for Pennsylvania (FY21-24)
SJTPO FY 2020-2029 TIP
FY 2020-2029 Statewide TIP
NJTA 2018 Capital Project and Investment Plan

Baseline Forecast Summary

A summary of the baseline forecast is presented in Table 10, which shows the resulting toll transactions and revenue estimates for Turnpike passenger cars, Turnpike commercial vehicles, total Parkway, and total system through 2030. As noted, actual transactions and revenue are included through August 2020. As shown, total Turnpike toll transactions are expected to increase from 271.9 million in 2020 to 319.3 million by 2030. Total Parkway toll transactions are estimated to increase from 391.7 million to 432.4 million over the same period. For the total system, toll transactions amount to 663.6 million in 2020 and are expected to rise to 751.8 million in 2030. When compared to the forecast provided in the 2018 Forecast Study, total system transactions are estimated to be about 1% higher each year through 2028, which was the last year included in the previous study.

Total Turnpike toll revenue is estimated to increase from $1,193.7 million in 2020 to $1,381.3 million by 2030. Parkway toll revenue is forecast to increase from $441.1 million to $486.9 million over the same period. For the total system, toll revenue is estimated to amount to $1,634.8 million in 2020 and increase to $1,868.2 million by 2030. When compared to the forecast provided in the 2018 Forecast Study, total system transactions are estimated to be about 1% lower each year through 2028.

Table 10
Baseline Forecast of Estimated Annual Toll Transactions and Gross Toll Revenue
All Values in Thousands

Baseline Annual Toll Transactions

Year		Turnpike Passenger Cars	Turnpike Commercial Vehicles	Turnpike Total	Parkway Total	System Total	2018 Forecast Study - System Total (3)	Current Forecast Percent Difference
2019	(1)	233,454	34,318	267,772	386,751	654,523	645,157	1.5 %
2020	(1,2)	237,712	34,147	271,859	391,712	663,570	655,258	1.3
2021	(2)	242,627	33,322	275,949	391,348	667,296	662,308	0.8
2022	(2)	246,592	33,886	280,478	395,670	676,148	671,072	0.8
2023	(2)	250,609	34,454	285,063	400,027	685,091	679,925	0.8
2024	(2)	255,295	35,116	290,411	405,415	695,826	690,559	0.8
2025	(2)	258,741	35,608	294,349	408,801	703,150	697,804	0.8
2026	(2)	262,857	36,192	299,049	413,216	712,264	706,828	0.8
2027	(2)	266,999	36,780	303,779	417,642	721,421	715,971	0.8
2028	(2)	271,844	37,465	309,309	423,131	732,440	727,051	0.7
2029	(2)	276,198	38,076	314,274	427,740	742,014	N/A	N/A
2030	(2)	280,642	38,697	319,339	432,424	751,763	N/A	N/A

Baseline Annual Toll Revenue

Year		Turnpike Passenger Cars	Turnpike Commercial Vehicles	Turnpike Total	Parkway Total	System Total	2018 Forecast Study - System Total (3)	Current Forecast Percent Difference
2019	(1)	$816,271	$360,205	$1,176,476	$435,792	$1,612,268	$1,605,900	0.4 %
2020	(1,2)	828,066	365,656	1,193,722	441,057	1,634,779	1,633,298	0.1
2021	(2)	837,995	357,301	1,195,296	440,268	1,635,564	1,653,534	(1.1)
2022	(2)	851,253	363,373	1,214,626	445,199	1,659,825	1,678,173	(1.1)
2023	(2)	864,675	369,482	1,234,157	450,156	1,684,314	1,703,118	(1.1)
2024	(2)	880,480	376,579	1,257,059	456,276	1,713,335	1,732,557	(1.1)
2025	(2)	892,000	381,853	1,273,853	460,128	1,733,982	1,753,515	(1.1)
2026	(2)	905,908	388,118	1,294,026	465,140	1,759,166	1,779,061	(1.1)
2027	(2)	919,902	394,424	1,314,326	470,151	1,784,477	1,804,986	(1.1)
2028	(2)	936,517	401,764	1,338,281	476,359	1,814,640	1,835,876	(1.2)
2029	(2)	951,266	408,319	1,359,585	481,584	1,841,169	N/A	N/A
2030	(2)	966,321	414,981	1,381,303	486,893	1,868,195	N/A	N/A

(1) Baseline forecast includes actual values for 2019 and through August for 2020. All values are estimated in 2018 Forecast Study.
(2) Reflects implementation of tolling on NJTP Interchange 19W ramps and changes to the bus toll schedule that went into effect on September 13, 2020.
(3) Values reflect estimates that were provided in Table 5-3 of *New Jersey Turnpike System 2018 Traffic and Toll Revenue Forecast Study*.

ADJUSTMENTS TO BASELINE FORECAST

The baseline forecast was developed assuming conditions of normal growth, no external shocks, and no changes to the Turnpike or Parkway toll rate structure or collection methods. However, there are two known conditions that will impact transactions and revenue on NJTA facilities in the forecast period: toll rate increases and the COVID-19 pandemic. The impacts of each of these conditions were estimated and were applied to the baseline forecast in order to develop a base case forecast. The methodology of estimating these impacts is summarized below.

Toll Increases

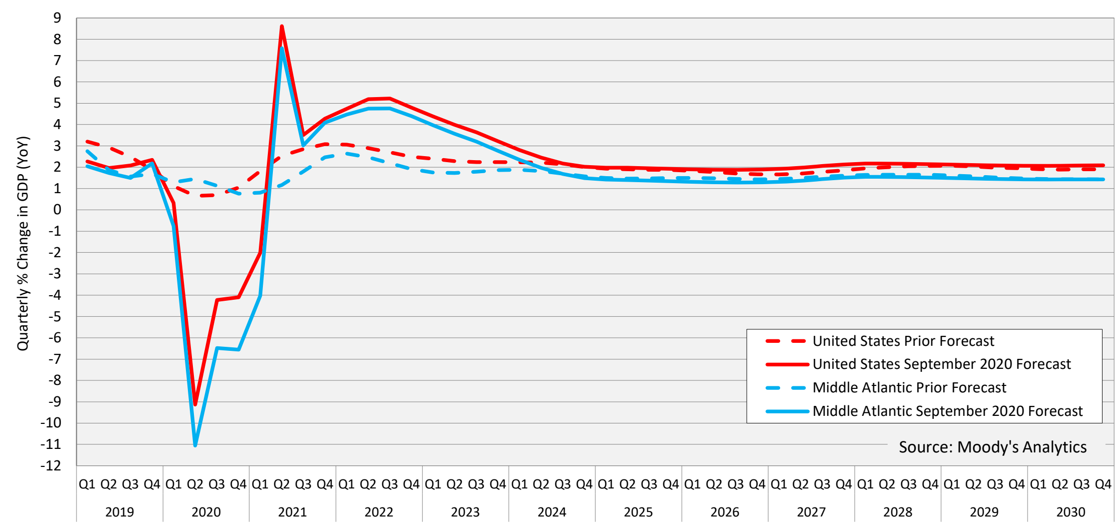
On September 13, 2020 a 36% toll increase was implemented on the Turnpike and a 27% toll increase was implemented on the Parkway. These were the first toll increases on NJTA facilities since 2012. Beginning in January 2022, annual 3% toll increases will be implemented. The resultant changes in transactions and revenue from the 2020 toll increase and the annual 3% toll increases beginning in 2022 will be applied to the baseline forecast to develop the base case forecast.

COVID-19 Impacts

Beginning in early March 2020, the impacts of the shelter-in-place orders and social distancing guidelines from state and local governments began to have increasingly negative impacts on Turnpike and Parkway usage. NJTA staff have provided CDM Smith with daily transactions and revenue figures for both facilities. As discussed previously, based on current data it appears that the decrease in both passenger car and commercial vehicle transactions on both the Turnpike and Parkway bottomed out in mid-April 2020. The recovery since April has been attributed to the phased reopening and lifting of restrictions, as well as increases in people's comfort to travel locally through the summer months. As fall and winter approach, the rapid recovery experienced in the last few months would seem unlikely to continue due to colder weather reducing the availability of safe activities, normal reductions in transactions in winter months, continued telecommuting, and the looming potential of an uptick in COVID-19 cases.

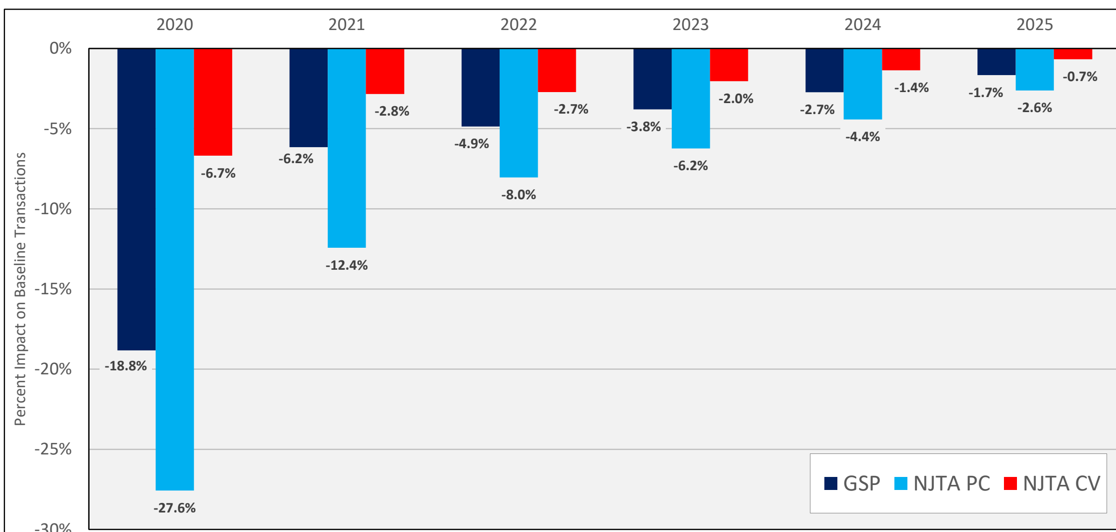
Given this information, and the general uncertainty associated with the COVID-19 pandemic moving forward, transaction volumes are assumed to continue to be impacted through 2025. Local, state, and federal economic activity will take time to recover from what is assumed to be a steep economic recession brought on by this unprecedented situation, high unemployment, and the lingering structural changes of how we live and work. This estimate is supported by comparing the two different forecasts of GDP and GRP growth over the ten-year period from 2020 to 2030, as shown in Figure 6. In this figure, the dashed lines represent Moody's Analytics GDP and GRP forecasts that were made at the time of the 2018 Forecast Study, while the solid lines represent their most recent GDP and GRP forecasts, which were made in September 2020.

While the older forecasts predicted fairly consistent GDP and GRP growth over the next decade, the most recent forecasts assume continued negative growth over the remainder of 2020, followed by rapid growth in 2021 and 2022. Over the following years, the September 2020 forecast continues to estimate faster growth than the older forecast, eventually slowing down and converging in the second half of 2024. From 2025 through 2030, both forecasts assume similar levels of economic growth. Similarly, as illustrated in Figure 7, the transaction and revenue impacts due to COVID-19 are estimated to gradually lessen between 2020 and 2025, eventually disappearing in 2026. The resultant changes in transactions and revenue from the COVID-19 pandemic will be applied to the baseline forecast after reflecting the toll increase impacts to develop the base case forecast.



Comparison of Gross Domestic and Regional Product Forecasts

FIGURE 6



Annual Estimated COVID-19 Impacts on Toll Transactions

FIGURE 7

Updated Transactions and Revenue Estimates

Transactions and toll revenue estimates for the base case forecast are shown in Tables 11, 12, and 13 for the Turnpike, Parkway, and total system, respectively. These tables identify the baseline forecast, estimated impacts associated with each of the variables described above (scheduled toll increases and COVID-19), and the resulting base case forecast.

TURNPIKE BASE CASE

Table 11 shows all estimated transactions and revenue values for the New Jersey Turnpike. The baseline values include actual data through August 2020. The updated baseline transactions for the Turnpike are expected to increase from 271.9 million in 2020 to 319.3 million by 2030. Total baseline toll revenue over the same forecast period is estimated to increase from $1,193.7 million to $1,381.3 million.

Toll diversion impacts are broken into two components in Table 11. The first toll impact column only reflects the estimated impacts from the September 2020 36% toll increase and the second toll increase column only reflects the estimated impacts resulting from the annual 3% indexed toll increases beginning in January 2022. The impact of the 36% toll increase reduces toll transactions by about 13.4 million in 2021 (the first full year of the toll increase); this grows to a loss of 15.5 million by 2030. Positive toll revenue impacts grow from $362.9 million in 2021 to $419.3 million by 2030.

The next column in Table 11 shows the traffic and toll revenue impacts resulting from annual 3% toll increases beginning in January 2022. As shown, toll transactions are reduced by about 1.3 million in 2022; this grows to a loss of 12.8 million by 2030. Positive toll revenue impacts grow from $39.9 million in 2022 to $451.5 million by 2030.

The next set of transaction and revenue values shown in this table relate to the estimated impact of COVID-19. There will be an estimated loss of about 66.8 million annual Turnpike toll transactions in 2020. As shown, this is estimated to gradually decline to about 6.5 million by 2025, with no negative impacts assumed beyond 2025. Annual toll revenue is estimated to decrease by just over $271.5 million in 2020, then gradually decrease to a loss of about $35.6 million by 2025. No toll revenue impacts are assumed for 2026 and beyond.

The final column in this table shows the resulting total base case toll transactions and revenue after accounting for each of the estimated impacts on baseline values. As shown, total base case transactions are estimated to increase from 267.8 million in 2019 to 291.0 million by 2030. Turnpike total base case annual toll revenue increases from nearly $1,176.5 million in 2019 to about $2,252.2 million by 2030.

Table 11
Estimated Turnpike Base Case Annual Transactions and Toll Revenue
All Values in Thousands

Year		Baseline Transactions	Estimated Transaction Impacts on Baseline: September 2020 Toll Increase Impact (2)	Annual Toll Indexing Impact (3)	COVID-19 Impact (4)	Total Impacts	Total Base Case Transactions
2019	(1)	267,772	0	0	0	0	267,772
2020	(1)	271,859	(3,991)	0	(66,809)	(70,800)	201,059
2021		275,949	(13,408)	0	(29,593)	(43,001)	232,947
2022		280,478	(13,628)	(1,273)	(19,649)	(34,551)	245,927
2023		285,063	(13,851)	(2,582)	(15,395)	(31,829)	253,235
2024		290,411	(14,111)	(3,937)	(11,050)	(29,097)	261,313
2025		294,349	(14,302)	(5,307)	(6,536)	(26,146)	268,203
2026		299,049	(14,531)	(6,724)	0	(21,254)	277,794
2027		303,779	(14,760)	(8,177)	0	(22,937)	280,842
2028		309,309	(15,029)	(9,690)	0	(24,719)	284,590
2029		314,274	(15,270)	(11,225)	0	(26,495)	287,778
2030		319,339	(15,516)	(12,801)	0	(28,318)	291,021

Year		Baseline Revenue	Estimated Toll Revenue Impacts on Baseline: September 2020 Toll Increase Impact (2)	Annual Toll Indexing Impact (3)	COVID-19 Impact (4)	Total Impacts	Total Base Case Revenue
2019	(1)	$1,176,476	$0	$0	$0	$0	$1,176,476
2020	(1)	1,193,722	107,439	0	(271,518)	(164,078)	1,029,644
2021		1,195,296	362,895	0	(143,219)	219,676	1,414,972
2022		1,214,626	368,760	39,857	(98,737)	309,880	1,524,507
2023		1,234,157	374,686	82,015	(79,575)	377,127	1,611,284
2024		1,257,059	381,636	126,890	(58,714)	449,812	1,706,871
2025		1,273,853	386,732	173,623	(35,627)	524,727	1,798,581
2026		1,294,026	392,853	223,275	0	616,128	1,910,154
2027		1,314,326	399,013	275,616	0	674,629	1,988,955
2028		1,338,281	406,283	331,620	0	737,903	2,076,184
2029		1,359,585	412,749	389,995	0	802,744	2,162,329
2030		1,381,303	419,340	451,527	0	870,867	2,252,169

(1) Includes actual values for 2019 and through August for 2020.
(2) These impacts are based on implementation of a 36% toll increase on September 13, 2020.
(3) These impacts are based on implementation of an annual 3% toll increases beginning in January 2022.
(4) These impacts represent the estimated reduction in travel demand over the forecast period as a result of the COVID-19 pandemic and its impact on the economy.

PARKWAY BASE CASE

Table 12 shows all estimated transactions and revenue values for the Parkway. The baseline values include actual data through August 2020. The updated baseline transactions for the Parkway are expected to increase from about 391.7 million in 2020 to just over 432.4 million by 2030. Total baseline toll revenue over the same forecast period is estimated to increase from $441.1 million to $486.9 million.

Toll diversion impacts are broken into two components in Table 12. The first toll impact column only reflects the estimated impacts from the September 2020 27% toll increase and the second toll increase column only reflects the estimated impacts resulting from the annual 3% indexed toll increases beginning in January 2022. The impact of the 27% toll increase reduces toll transactions by about 12.1 million in 2021 (the first full year of the toll increase); this grows to a loss of 13.4 million by 2030. Positive toll revenue impacts grow from $102.4 million in 2021 to $113.2 million by 2030.

The next column in Table 12 shows the traffic and toll revenue impacts resulting from annual 3% toll increases beginning in January 2022. As shown, toll transactions are reduced by about 1.8 million in 2022; this grows to a loss of 17.1 million by 2030. Positive toll revenue impacts grow from $13.9 million in 2022 to $150.9 million by 2030.

The next set of transactions and revenue values shown in this table relate to the estimated impact of COVID-19. There will be an estimated loss of nearly 73.1 million annual Parkway toll transactions in 2020. As shown, this is estimated to gradually decline to about 6.5 million by 2025, with no negative impacts assumed beyond 2025. Annual toll revenue is estimated to decrease by just over $89.8 million in 2020, then gradually decrease to a loss of about $10.9 million by 2025. No toll revenue losses beyond 2025 are assumed.

The final column in this table show the resulting total base case toll transactions and revenue after accounting for each of the estimated impacts on baseline values. As shown, total base case transactions are estimated to increase from nearly 386.8 million in 2019 to just over 401.9 million by 2030. Parkway total adjusted annual toll revenue increases from nearly $435.8 million in 2019 to $751.0 million by 2030.

Table 12
Estimated Parkway Base Case Annual Transactions and Toll Revenue
All Values in Thousands

Year		Baseline Transactions	Estimated Transaction Impacts on Baseline: September 2020 Toll Increase Impact (2)	Annual Toll Indexing Impact (3)	COVID-19 Impact (4)	Total Impacts	Total Base Case Transactions
2019	(1)	386,751	0	0	0	0	386,751
2020	(1)	391,712	(3,490)	0	(73,099)	(76,589)	315,123
2021		391,348	(12,122)	0	(23,349)	(35,471)	355,877
2022		395,670	(12,256)	(1,771)	(18,558)	(32,585)	363,085
2023		400,027	(12,391)	(3,573)	(14,588)	(30,553)	369,474
2024		405,415	(12,558)	(5,420)	(10,587)	(28,565)	376,850
2025		408,801	(12,663)	(7,270)	(6,475)	(26,408)	382,393
2026		413,216	(12,800)	(9,165)	0	(21,964)	391,251
2027		417,642	(12,937)	(11,090)	0	(24,027)	393,615
2028		423,131	(13,107)	(13,078)	0	(26,185)	396,946
2029		427,740	(13,250)	(15,074)	0	(28,324)	399,417
2030		432,424	(13,395)	(17,105)	0	(30,499)	401,925

Year		Baseline Revenue	Estimated Toll Revenue Impacts on Baseline: September 2020 Toll Increase Impact (2)	Annual Toll Indexing Impact (3)	COVID-19 Impact (4)	Total Impacts	Total Base Case Revenue
2019	(1)	$435,792	$0	$0	$0	$0	$435,792
2020	(1)	441,057	29,405	0	(89,844)	(60,439)	380,617
2021		440,268	102,368	0	(36,866)	65,502	505,770
2022		445,199	103,515	13,850	(29,018)	88,347	533,546
2023		450,156	104,667	28,363	(23,458)	109,571	559,728
2024		456,276	106,090	43,669	(17,475)	132,283	588,559
2025		460,128	106,986	59,464	(10,910)	155,540	615,668
2026		465,140	108,151	76,099	0	184,250	649,390
2027		470,151	109,316	93,487	0	202,804	672,955
2028		476,359	110,760	111,932	0	222,692	699,052
2029		481,584	111,975	130,999	0	242,973	724,557
2030		486,893	113,209	150,933	0	264,142	751,035

(1) Includes actual values for 2019 and through August for 2020.
(2) These impacts are based on implementation of a 27% toll increase on September 13, 2020.
(3) These impacts are based on implementation of an annual 3% toll increases beginning in January 2022.
(4) These impacts represent the estimated reduction in travel demand over the forecast period as a result of the COVID-19 pandemic and its impact on the economy.

TOTAL SYSTEM BASE CASE

Table 13 shows the combined effects of all impacts associated with the Turnpike and Parkway on baseline transactions and toll revenue. To put each of the individual impacts in perspective, Table 14 shows the percent impacts each of these variables has on total system transactions and toll revenue. Table 15 summarizes the entire base case forecast and compares it to the forecast presented in the 2018 Forecast Study.

The most significant long-term impacts result from the proposed toll increases. As shown in Table 14, the impact of the 36% (Turnpike) and 27% (Parkway) toll increases reduces toll transactions by 3.8% annually beginning in 2021 (the first full year of the increase). Total toll revenue is estimated to increase by 28.5%. Both traffic and revenue impacts remain constant over time since this reflects a one-time toll increase (in September 2020). The annual 3% toll increases have a relatively minor impact on traffic and revenue in 2022 (-0.5% and 2.5%, respectively). However, the compound effect of these annual toll increases reduces total transactions by about 4.1% and increases toll revenue by about 25.1% by 2030.

Finally, the COVID-19 impacts are estimated to reduce total systemwide transactions and toll revenue by about 21.3% and 20.4%, respectively, for the full 2020 calendar year. The negative transactions and toll revenue impacts decrease over the following five years, such that both transactions and revenue are estimated to be lower only by about 2.0% in 2025.

The last column in Table 14 shows the total combined effect of each of these impacts on baseline transactions and toll revenue. Aside from 2020 and 2021, when the estimated COVID-19 impacts are significant, the total impacts (negative for transactions and positive for toll revenue) closely mirror those for the toll increase alone.

Table 13
Estimated Total System Base Case Annual Transactions and Toll Revenue
All Values in Thousands

Year		Baseline Transactions	Estimated Transaction Impacts on Baseline: September 2020 Toll Increase Impact (2)	Annual Toll Indexing Impact (3)	COVID-19 Impact (4)	Total Impacts	Total Base Case Transactions
2019	(1)	654,523	0	0	0	0	654,523
2020	(1)	663,570	(7,481)	0	(139,907)	(147,389)	516,182
2021		667,296	(25,531)	0	(52,942)	(78,472)	588,824
2022		676,148	(25,885)	(3,045)	(38,207)	(67,136)	609,012
2023		685,091	(26,242)	(6,156)	(29,983)	(62,382)	622,709
2024		695,826	(26,669)	(9,356)	(21,637)	(57,663)	638,163
2025		703,150	(26,965)	(12,577)	(13,012)	(52,554)	650,596
2026		712,264	(27,330)	(15,888)	0	(43,219)	669,045
2027		721,421	(27,697)	(19,266)	0	(46,964)	674,458
2028		732,440	(28,136)	(22,768)	0	(50,904)	681,536
2029		742,014	(28,520)	(26,299)	0	(54,819)	687,195
2030		751,763	(28,911)	(29,906)	0	(58,817)	692,946

Year		Baseline Revenue	Estimated Toll Revenue Impacts on Baseline: September 2020 Toll Increase Impact (2)	Annual Toll Indexing Impact (3)	COVID-19 Impact (4)	Total Impacts	Total Base Case Revenue
2019	(1)	$1,612,268	$0	$0	$0	$0	$1,612,268
2020	(1)	1,634,779	136,845	0	(361,362)	(224,517)	1,410,261
2021		1,635,564	465,264	0	(180,086)	285,178	1,920,742
2022		1,659,825	472,275	53,707	(127,755)	398,227	2,058,052
2023		1,684,314	479,354	110,378	(103,033)	486,698	2,171,012
2024		1,713,335	487,726	170,558	(76,190)	582,095	2,295,430
2025		1,733,982	493,717	233,087	(46,537)	680,267	2,414,249
2026		1,759,166	501,004	299,375	0	800,379	2,559,545
2027		1,784,477	508,329	369,104	0	877,432	2,661,909
2028		1,814,640	517,043	443,552	0	960,595	2,775,236
2029		1,841,169	524,723	520,994	0	1,045,717	2,886,886
2030		1,868,195	532,549	602,460	0	1,135,009	3,003,204

(1) Includes actual values for 2019 and through August for 2020.
(2) These impacts are based on implementation of a 36% toll increase on the Turnpike and a 27% toll increase on the Parkway on September 13, 2020.
(3) These impacts are based on implementation of an annual 3% toll increases beginning in January 2022.
(4) These impacts represent the estimated reduction in travel demand over the forecast period as a result of the COVID-19 pandemic and its impact on the economy.

Table 14
Estimated Toll Increase and COVID-19 Impacts on New Jersey Turnpike System

Estimated Transaction Percent Impacts on Baseline

Calendar Year		September 2020 Toll Increase Impact (2)	Annual Toll Indexing Impact (3)	COVID-19 Impact (3)	Total Impacts
2019	(1)	0.0 %	0.0 %	0.0 %	0.0 %
2020	(1)	(1.1)	0.0	(21.3)	(22.2)
2021		(3.8)	0.0	(8.2)	(11.8)
2022		(3.8)	(0.5)	(5.9)	(9.9)
2023		(3.8)	(0.9)	(4.6)	(9.1)
2024		(3.8)	(1.4)	(3.3)	(8.3)
2025		(3.8)	(1.9)	(2.0)	(7.5)
2026		(3.8)	(2.3)	0.0	(6.1)
2027		(3.8)	(2.8)	0.0	(6.5)
2028		(3.8)	(3.2)	0.0	(6.9)
2029		(3.8)	(3.7)	0.0	(7.4)
2030		(3.8)	(4.1)	0.0	(7.8)

Estimated Toll Revenue Percent Impacts on Baseline

Calendar Year		September 2020 Toll Increase Impact (2)	Annual Toll Indexing Impact (3)	COVID-19 Impact (3)	Total Impacts
2019	(1)	0.0 %	0.0 %	0.0 %	0.0 %
2020	(1)	8.4	0.0	(20.4)	(13.7)
2021		28.4	0.0	(8.6)	17.4
2022		28.5	2.5	(5.8)	24.0
2023		28.5	5.1	(4.5)	28.9
2024		28.5	7.7	(3.2)	34.0
2025		28.5	10.5	(1.9)	39.2
2026		28.5	13.2	0.0	45.5
2027		28.5	16.1	0.0	49.2
2028		28.5	19.0	0.0	52.9
2029		28.5	22.0	0.0	56.8
2030		28.5	25.1	0.0	60.8

(1) Includes actual values for 2019 and through August for 2020.
(2) The impacts shown for the September 2020 toll increase are compared to the Baseline forecast.
(3) The impacts shown for the annual toll indexing are based on the Baseline forecast after accounting for the impacts of the September 2020 toll increase.
(4) The impacts shown for COVID-19 are based on the Baseline forecast after accounting for both the September 2020 and annual indexing toll increases.

A summary of the base case forecast is presented in Table 15, which shows the resulting toll transactions and revenue estimates for Turnpike passenger cars, Turnpike commercial vehicles, total Parkway, and total system through 2030. As noted, actual transactions and revenue are included through August 2020. As shown, total Turnpike toll transactions are expected to increase from 201.1 million in 2020 to 291.0 million by 2030. Total Parkway toll transactions are estimated to increase from 315.1 million to 401.9 million over the same period. For the total system, toll transactions amount to 516.2 million in 2020 and are expected to rise to 692.9 million in 2030.

Total system base case transactions are notably lower than those provided in the 2018 Forecast Study. The differences are most notable in 2020, when transactions are expected to be 21.2% less than estimated in the 2018 Forecast Study, due mostly to lost trips from the COVID-19 pandemic. In the following years, as the effects of the pandemic are expected to lessen, the difference between base case and 2018 Forecast Study transaction estimates grows smaller, reaching 6.8% in 2025. Between 2026, which is expected to be the first year with no lingering impacts from the COVID-19 pandemic, and 2028, which is the last year included in the previous study, transactions are expected to be between 5% and 6% less than previously forecast due to trip diversion from scheduled toll increases.

Total Turnpike toll revenue is estimated to increase from $1,029.6 million in 2020 to $2,252.2 million by 2030. Parkway toll revenue is forecast to increase from $380.6 million to $751.0 million over the same period. For the total system, toll revenue is estimated to amount to $1,410.3 million in 2020 and increase to $3,003.2 million by 2030.

Conversely from transactions, which are now expected to be lower than estimated in the 2018 Forecast Study, revenue is expected to be significantly higher than previously forecasted in most years. The exception to this is 2020, when revenues are estimated to be 13.7% lower than previously forecast due to the COVID-19 pandemic. However, decreasing impacts from the pandemic and the scheduled toll increases, result significantly higher toll revenue than previously forecast in each year from 2021 to 2028. This difference grows each year, increasing from a 16.2% percent difference in 2021 to a 51.2% difference in 2028, which is the last forecast year in the 2018 Study.

Table 15
Base Case Forecast of Estimated Annual Toll Transactions and Gross Toll Revenue
All Values in Thousands

		Base Case Annual Toll Transactions						
		Turnpike						
Year		Passenger Cars	Commercial Vehicles	Turnpike Total	Parkway Total	System Total	**2018 Forecast Study - System Total (5)**	**Current Forecast Percent Difference**
2019	(1)	233,454	34,318	267,772	386,751	654,523	645,157	1.5 %
2020	(1,2,3,4)	169,639	31,420	201,059	315,123	516,182	655,258	(21.2)
2021	(2,3,4)	202,088	30,859	232,947	355,877	588,824	662,308	(11.1)
2022	(2,3,4)	214,641	31,286	245,927	363,085	609,012	671,072	(9.2)
2023	(2,3,4)	221,341	31,893	253,235	369,474	622,709	679,925	(8.4)
2024	(2,3,4)	228,724	32,589	261,313	376,850	638,163	690,559	(7.6)
2025	(2,3,4)	235,075	33,129	268,203	382,393	650,596	697,804	(6.8)
2026	(2,3)	244,039	33,755	277,794	391,251	669,045	706,828	(5.3)
2027	(2,3)	246,688	34,154	280,842	393,615	674,458	715,971	(5.8)
2028	(2,3)	249,951	34,639	284,590	396,946	681,536	727,051	(6.3)
2029	(2,3)	252,728	35,051	287,778	399,417	687,195	N/A	N/A
2030	(2,3)	255,553	35,468	291,021	401,925	692,946	N/A	N/A

		Base Case Annual Toll Revenue						
		Turnpike						
Year		Passenger Cars	Commercial Vehicles	Turnpike Total	Parkway Total	System Total	**2018 Forecast Study - System Total (5)**	**Current Forecast Percent Difference**
2019	(1)	$816,271	$360,205	$1,176,476	$435,792	$1,612,268	$1,605,900	0.4 %
2020	(1,2,3,4)	656,207	373,437	1,029,644	380,617	1,410,261	1,633,298	(13.7)
2021	(2,3,4)	963,304	451,667	1,414,972	505,770	1,920,742	1,653,534	16.2
2022	(2,3,4)	1,053,435	471,072	1,524,507	533,546	2,058,052	1,678,173	22.6
2023	(2,3,4)	1,117,159	494,125	1,611,284	559,728	2,171,012	1,703,118	27.5
2024	(2,3,4)	1,187,352	519,519	1,706,871	588,559	2,295,430	1,732,557	32.5
2025	(2,3,4)	1,255,169	543,412	1,798,581	615,668	2,414,249	1,753,515	37.7
2026	(2,3)	1,340,424	569,730	1,910,154	649,390	2,559,545	1,779,061	43.9
2027	(2,3)	1,395,193	593,762	1,988,955	672,955	2,661,909	1,804,986	47.5
2028	(2,3)	1,455,938	620,246	2,076,184	699,052	2,775,236	1,835,876	51.2
2029	(2,3)	1,515,876	646,453	2,162,329	724,557	2,886,886	N/A	N/A
2030	(2,3)	1,578,403	673,767	2,252,169	751,035	3,003,204	N/A	N/A

(1) Baseline forecast includes actual values for 2019 and through August for 2020. All values are estimated in 2018 Forecast Study.
(2) Reflects implementation of tolling on NJTP Interchange 19W ramps and changes to the bus toll schedule that went into effect on September 13, 2020.
(3) Reflects implementation of a 36% toll increase on the Turnpike and a 27% toll increase on the Parkway on September 13, 2020 and annual 3% toll increases beginning in January 2022.
(4) Reflects impacts due to COVID-19 pandemic.
(5) Values reflect estimates that were provided in Table 5-3 of *New Jersey Turnpike System 2018 Traffic and Toll Revenue Forecast Study* .

Sensitivity Test Low Case Revenue Forecast

One possibility being discussed by health officials is the potential for a second wave of COVID-19 cases to occur in late 2020 and early 2021. This was not assumed to occur in the development of the base case forecast described above. For this "low case" sensitivity test, CDM Smith developed a set of transaction and toll revenue forecasts assuming a second wave of COVID-19 cases. These estimates assumed an increase in COVID-19 cases beginning in January 2021 and reaching a peak in early February 2021. It was assumed that the peak of this second wave would be roughly half of the peak recorded during 2020. Based on this, a sensitivity test was developed assuming that a second wave would result in transaction and revenue impacts in 2021 at 50 percent of the those observed in 2020. These impacts would be a result of self-quarantining, enhanced travel restrictions, increased telecommuting and social distancing resulting from a substantial return of COVID-19, and slower reopening and economic recovery going forward.

The total net revenue forecast under the base case and low case forecasts are summarized in Table 16. Because the second wave impacts do not occur until January 2021, 2020 revenue does not change from the base case value. The low case revenue forecast for 2021 is $1,832.5 million, which includes the largest impact compared to the base case of $88.3 million (4.6%). Between 2022 and 2025, the low case forecast would generate between $4.0 million (0.2%) and $13.9 million (0.7%) less revenue compared to the base case forecast. From 2021 through 2025 the cumulative impacts of the low case, reflecting a second wave of COVID-19 cases and slower economic recovery, could result in about $124.7 million lower net revenue for NJTA when compared against the CDM Smith base case forecast.

Table 16
Low Case Forecast of Estimated Annual Toll Transactions and Gross Toll Revenue
All Values in Thousands

		Low Case Annual Toll Transactions						Low Case
		Turnpike					Base Case	Percentage
		Passenger	Commercial	Turnpike	Parkway	System	Forecast - System	Difference
Year		Cars	Vehicles	Total	Total	Total	**Total (5)**	**from Base Case**
2019	(1)	233,454	34,318	267,772	386,751	654,523	654,523	0.0 %
2020	(1,2,3,4)	169,639	31,420	201,059	315,123	516,182	516,182	0.0
2021	(2,3,4)	187,955	30,365	218,320	344,784	563,104	588,824	(4.4)
2022	(2,3,4)	212,200	31,401	243,602	362,184	605,785	609,012	(0.5)
2023	(2,3,4)	219,480	31,981	251,461	368,780	620,241	622,709	(0.4)
2024	(2,3,4)	227,460	32,649	260,109	376,374	636,483	638,163	(0.3)
2025	(2,3,4)	234,434	33,159	267,593	382,150	649,743	650,596	(0.1)
2026	(2,3)	244,039	33,755	277,794	391,251	669,045	669,045	0.0
2027	(2,3)	246,688	34,154	280,842	393,615	674,458	674,458	0.0
2028	(2,3)	249,951	34,639	284,590	396,946	681,536	681,536	0.0
2029	(2,3)	252,728	35,051	287,778	399,417	687,195	687,195	0.0
2030	(2,3)	255,553	35,468	291,021	401,925	692,946	692,946	0.0

		Low Case Annual Toll Revenue						Low Case
		Turnpike					Base Case	Percentage
		Passenger	Commercial	Turnpike	Parkway	System	Forecast - System	Difference
Year		Cars	Vehicles	Total	Total	Total	**Total (5)**	**from Base Case**
2019	(1)	$816,271	$360,205	$1,176,476	$435,792	$1,612,268	$1,612,268	0.0 %
2020	(1,2,3,4)	656,207	373,437	1,029,644	380,617	1,410,261	1,410,261	0.0
2021	(2,3,4)	898,682	446,047	1,344,728	487,737	1,832,465	1,920,742	(4.6)
2022	(2,3,4)	1,037,729	472,905	1,510,633	533,546	2,044,179	2,058,052	(0.7)
2023	(2,3,4)	1,104,818	495,560	1,600,378	559,728	2,160,106	2,171,012	(0.5)
2024	(2,3,4)	1,178,723	520,519	1,699,241	588,559	2,287,801	2,295,430	(0.3)
2025	(2,3,4)	1,250,666	543,932	1,794,598	615,668	2,410,266	2,414,249	(0.2)
2026	(2,3)	1,340,424	569,730	1,910,154	649,390	2,559,545	2,559,545	0.0
2027	(2,3)	1,395,193	593,762	1,988,955	672,955	2,661,909	2,661,909	0.0
2028	(2,3)	1,455,938	620,246	2,076,184	699,052	2,775,236	2,775,236	0.0
2029	(2,3)	1,515,876	646,453	2,162,329	724,557	2,886,886	2,886,886	0.0
2030	(2,3)	1,578,403	673,767	2,252,169	751,035	3,003,204	3,003,204	0.0

(1) Includes actual values for 2019 and through August for 2020.
(2) Reflects implementation of tolling on NJTP Interchange 19W ramps and changes to the bus toll schedule that went into effect on September 13, 2020.
(3) Reflects implementation of a 36% toll increase on the Turnpike and a 27% toll increase on the Parkway on September 13, 2020 and annual 3% toll increases beginning in January 2022.
(4) Reflects impacts due to COVID-19 pandemic.
(5) The traffic and revenue values shown here reflect the Base Case total system values shown in Table 15.

*   *   *

While the most up-to-date daily transactions and toll revenue data have been used in preparation of this analysis, we are still in the midst of the COVID-19 pandemic. The models and other methodologies used to estimate impacts associated with NJTA operational adjustments and toll rate changes have been successfully used for prior studies and have proven to be quite accurate. The ultimate extent and duration of local, state, and federal restrictions and social distancing guidelines as a result of COVID-19 will directly affect transactions on the Turnpike and Parkway. CDM Smith will continue to monitor travel patterns as the crisis continues.

Sincerely,

Scott A. Allaire

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Disclaimer

CDM Smith used currently accepted professional practices and procedures in the development of the transactions and revenue estimates in this report. However, as with any forecast, differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of the forecasters. CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the New Jersey Turnpike Authority (NJTA). CDM Smith also relied upon the reasonable assurances of independent parties and is not aware of any material facts that would make such information misleading.

CDM Smith made qualitative judgments related to several key variables in the development and analysis of the transactions and revenue estimates that must be considered as a whole; therefore, selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit of partial information extracted from this report.

All estimates and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple agencies, including NJTA, New Jersey Department of Transportation, the State of New Jersey, Woods & Poole Economics, Moody's Analytics, U. S. Energy Information Administration, U.S. Bureau of Labor Statistics, and the Conference Board. These estimates and projections may not be indicative of actual or future values and are therefore subject to substantial uncertainty. Certain variables such as future developments, economic cycles, global pandemics, and impacts relating to advances in automotive technology, etc. cannot be predicted with certainty and may affect the estimates or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate or projection contained within this report.

While CDM Smith believes that the projections and other forward-looking statements contained within the report are based on reasonable assumptions as of the date of the report, such forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of this report, CDM Smith will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to socioeconomic and demographic forecasts, proposed residential or commercial land use development projects, and/or potential improvements to the regional transportation network.

The report and its contents are intended solely for use by NJTA and designated parties approved by NJTA and CDM Smith. Any use by third-parties, other than as noted above, is expressly prohibited. In addition, any publication of the report without the express written consent of CDM Smith is prohibited.

CDM Smith is not, and has not been, a municipal advisor as defined in Federal law (the Dodd Frank Bill) to NJTA and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to NJTA with respect to the information and material contained in this report. CDM Smith is not recommending and has not recommended any action to NJTA. NJTA should discuss the information and material contained in this report with any and all internal and external advisors that it deems appropriate before acting on this information.

*   *   *

New Jersey Turnpike System 2018 Traffic and Toll Revenue Forecast Study

Final Report

September 21, 2018

CDM Smith

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Chapter 1

Introduction

This study presents the traffic and toll revenue forecasts from 2018 through 2028 developed by CDM Smith for the New Jersey Turnpike (Turnpike), the Garden State Parkway (Parkway), and the Total System (the Turnpike and Parkway). This investment grade study was undertaken at the request of the New Jersey Turnpike Authority (NJTA) for use in future bond issuances. CDM Smith forecasts have been used by the NJTA for more than 30 years in support of the issuance of bond financing and for internal financial planning. In light of the current economic climate, it is more important than ever to have up-to-date traffic and toll revenue forecasts based on the most currently available information.

CDM Smith last completed a detailed investment grade traffic and toll revenue study for the NJTA in May 2014. Since that time two “draw down” letters have been developed to update the forecast presented in the 2014 study. The first draw down letter was presented to the NJTA on October 2, 2015 and the second on March 8, 2017. The purpose of a draw down letter is to update actual traffic and revenue experience since the last study and to adjust short term (two- to five-year) forecasts based on recent trends. Detailed economic analyses are not conducted as part of a draw down letter and therefore, longer term forecasts are not adjusted from those originally developed as part of the prior investment grade study.

This current investment grade study presents a new ten-year forecast of traffic and toll revenue for the Turnpike and Parkway. The traffic and revenue forecasts were based on a detailed analysis of the past relationship between actual Turnpike and Parkway transactions and actual socio-economic data. The development of the new forecasts relied on the most currently available socio-economic forecasts, historic traffic and toll revenue trends through July 2018, and the NJTA’s most recent assumptions regarding future toll schedules, discount programs, and future capital improvements. No toll increases or discount program changes are planned during the projection period. In addition, the estimated E-ZPass market share was developed for the forecast period based on historical trends and on future toll schedule assumptions. Meetings with local Metropolitan Planning Organizations (MPOs) and other agencies were conducted in order to complete the analysis of the potential growth in traffic and toll revenue on the Turnpike and Parkway. This study resulted in a new ten-year forecast of traffic and toll revenue for the Turnpike and the Parkway.

Report Structure

This report is comprised of five chapters, including the following:

Chapter 1 (Introduction) provides an introduction to the study, outlines the report structure and presents the basic study methodology.

Chapter 2 (Current Turnpike System Characteristics) introduces the NJTA Turnpike System and provides information on current Turnpike and Parkway characteristics, including per-mile toll rates and toll discount programs, current E-ZPass market shares, and vehicle class compositions on the two facilities. Also included are mainline traffic volumes and recent monthly and daily variations at select mainline locations.

Chapter 3 (Historical Traffic and Toll Revenue Trends) reviews annual and monthly transaction and toll revenue trends on the Turnpike and Parkway. Data are provided for passenger cars and commercial vehicles on the Turnpike and total vehicles on the Parkway. Information is provided on historical changes in the toll schedule and discount programs. Also included are historical E-ZPass market share trends and trends in vehicle composition.

Chapter 4 (Corridor Growth Analysis) summarizes the methodology that was employed to estimate future growth in toll transactions on the Turnpike and Parkway. This includes a description of the econometric model that was utilized as well as the meetings with local MPOs and other regional or local government agencies. A socioeconomic analysis was conducted to identify potentially explanatory factors that may influence future toll transactions. A discussion of the factors, including population, employment, unemployment, retail sales, and gross regional product trends and forecasts is provided in Chapter 4. The ultimate product of the corridor growth analysis is a set of estimated annual normal growth rates for Turnpike passenger cars and commercial vehicles, and Parkway total vehicles. These estimated growth rates are presented in Chapter 4 along with a discussion of the explanatory factors.

Chapter 5 (Estimated Annual Toll Transactions and Gross Toll Revenue) presents a summary of the planned roadway improvement program on the Turnpike, the Parkway, and other roads in the study corridor. Estimates of future E-ZPass market shares are described. Lastly, estimated annual toll transactions and gross toll revenue are provided from 2018 through 2028. The annual estimates are provided for Turnpike passenger cars and commercial vehicles, and for total Parkway vehicles.

Chapter 2

Current Turnpike System Characteristics

This chapter describes the two toll facilities that comprise the NJTA System, the Turnpike and Parkway, and presents current characteristics of the two facilities. The characteristics include the current toll collection system, toll rates, and accepted methods of payment. The proportion of 2017 toll transactions and toll revenue by each facility is provided. Other characteristics include the current E-ZPass market share and the vehicle class composition. Average daily mainline traffic volumes are presented for calendar year 2017, along with a presentation of monthly and daily traffic variations at select mainline locations. It should be noted that gross toll revenue is defined in this report as toll revenue including all toll adjustments and discounts, but not accounting for maintenance and operating costs.

Facility Descriptions

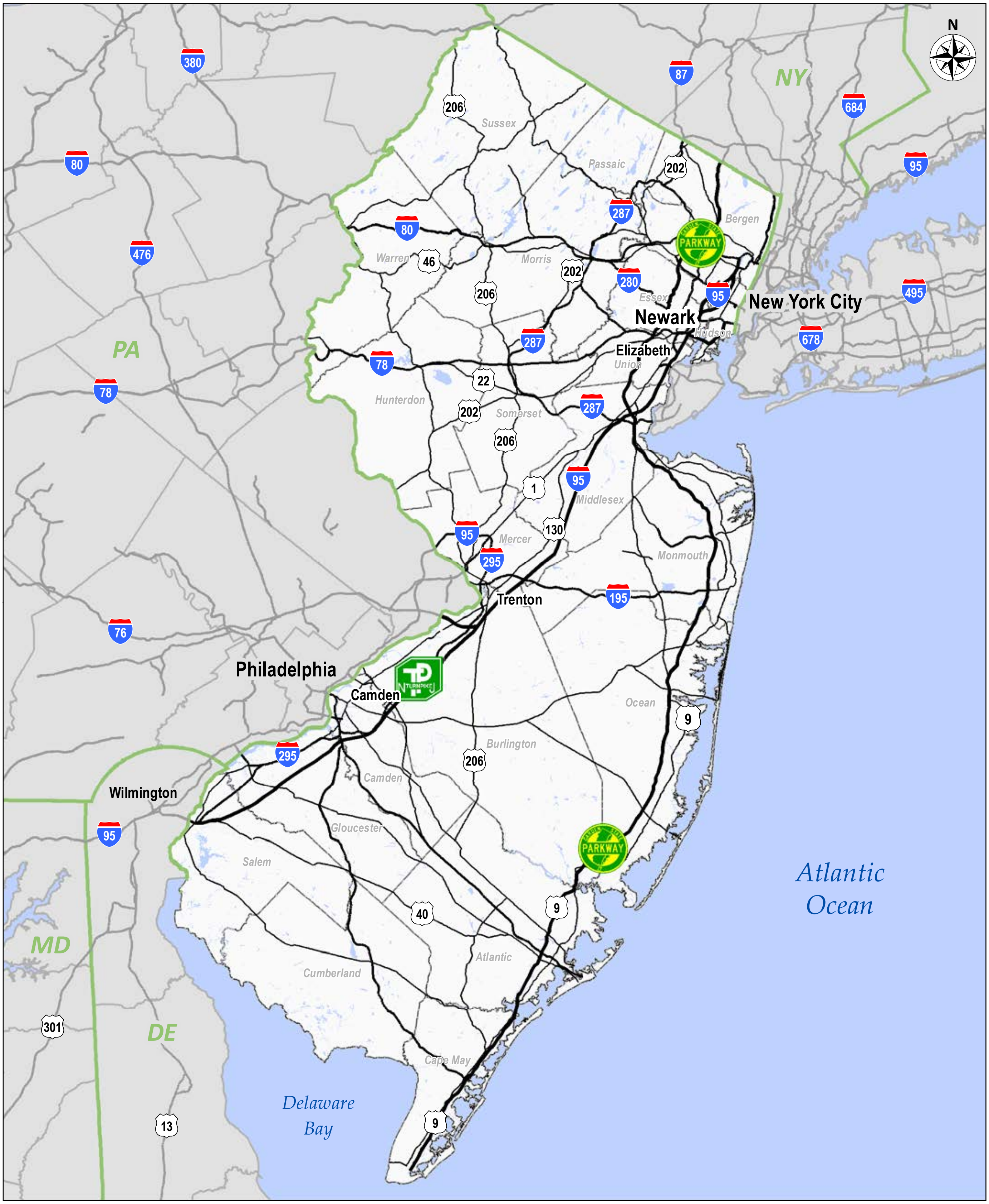
The NJTA toll road facilities are comprised of the New Jersey Turnpike and the Garden State Parkway. **Figure 2-1** shows the location of these two toll roads. Interchange locations in northern and southern New Jersey are shown in **Figures 2-2** and **2-3**, respectively.

The New Jersey Turnpike

The Turnpike consists of a 122-mile mainline and two extensions, the 8.2-mile Newark Bay-Hudson County Extension (which crosses Newark Bay and connects the cities of Newark with Bayonne and Jersey City), and the 5.7-mile Pearl Harbor Memorial Turnpike Extension (which connects the Turnpike to the Pennsylvania Turnpike, I-276, via a bridge over the Delaware River). The Turnpike mainline is a principal north-south roadway in New Jersey linking major economic centers of the east coast, including Boston, New York City, Philadelphia, and Washington, D.C. Within New Jersey, the Turnpike provides access to a major seaport in Newark and Elizabeth, and to a major airport (Newark International Airport).

Interchanges on the Turnpike are numbered sequentially from the southern terminus to the northern, ranging from Interchange 1 to 18W/18E. At its southern terminus the Turnpike connects, via a short section of US Route 40, with the Delaware Memorial Bridge, the only crossing between New Jersey and Delaware. At its northern terminus, the Turnpike feeds into the George Washington Bridge, one of the most heavily traveled bridges in the world. North of Interchange 6, the Turnpike carries the I-95 designation.

The Turnpike currently provides two travel lanes per direction between Interchange 1 (Delaware Memorial Bridge) to Interchange 4 (Camden-Philadelphia), and three travel lanes per direction between Interchange 4 to Interchange 6 (Pennsylvania Turnpike). Between Interchange 6 to just north of Interchange 14 (Newark), the Turnpike has an inner roadway and an outer roadway in each direction (four separate roads). Under normal operations, the outer roadway permits truck, bus and passenger-car traffic, while the inner roadway permits only passenger-car traffic. This system of inner and outer roadways is called the “dual/dual” roadway. Between Interchanges 6 and 14 there are six lanes per direction; three outer lanes and three inner lanes.



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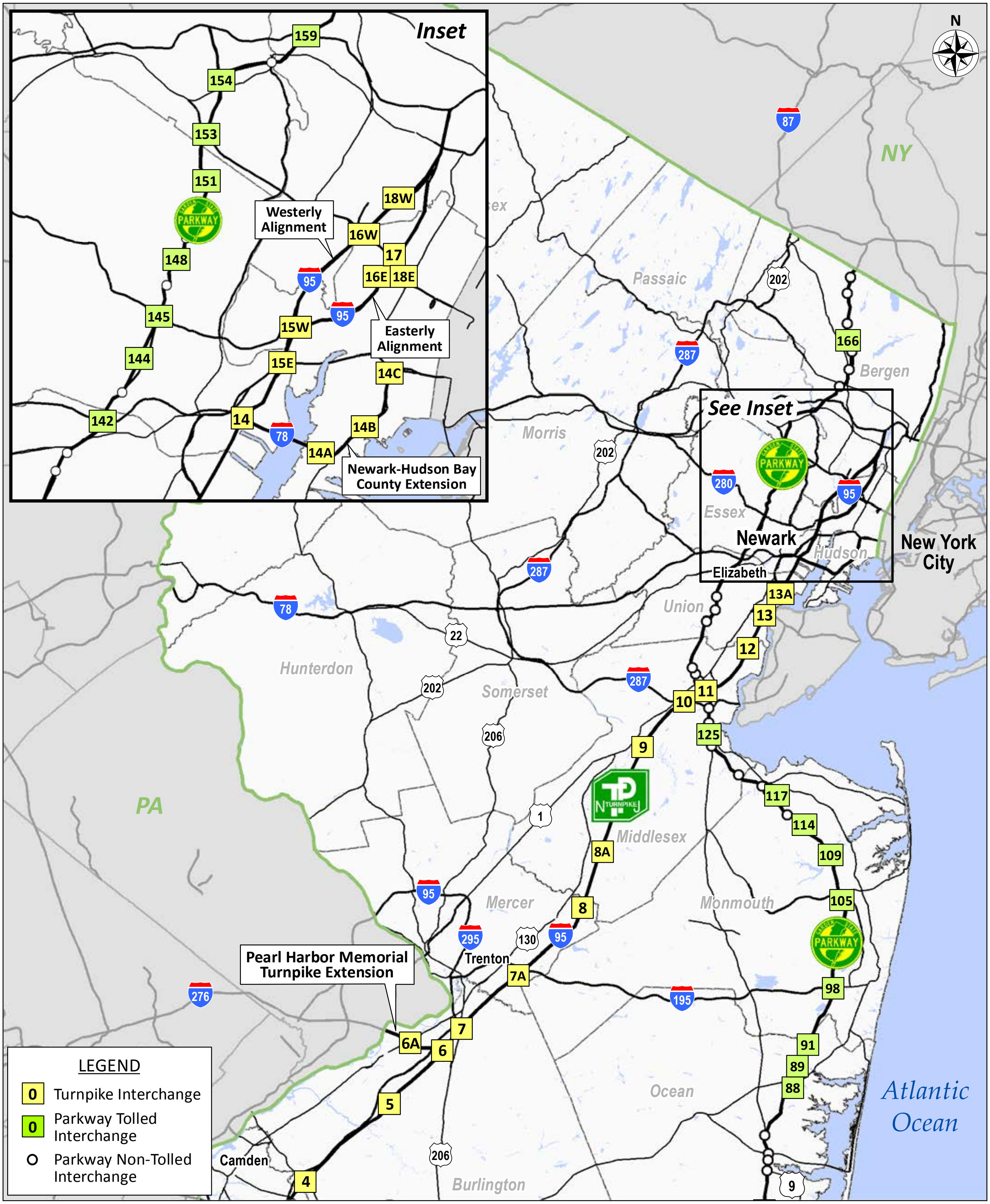
NJTA TOLL ROAD FACILITIES

FIGURE 2-1



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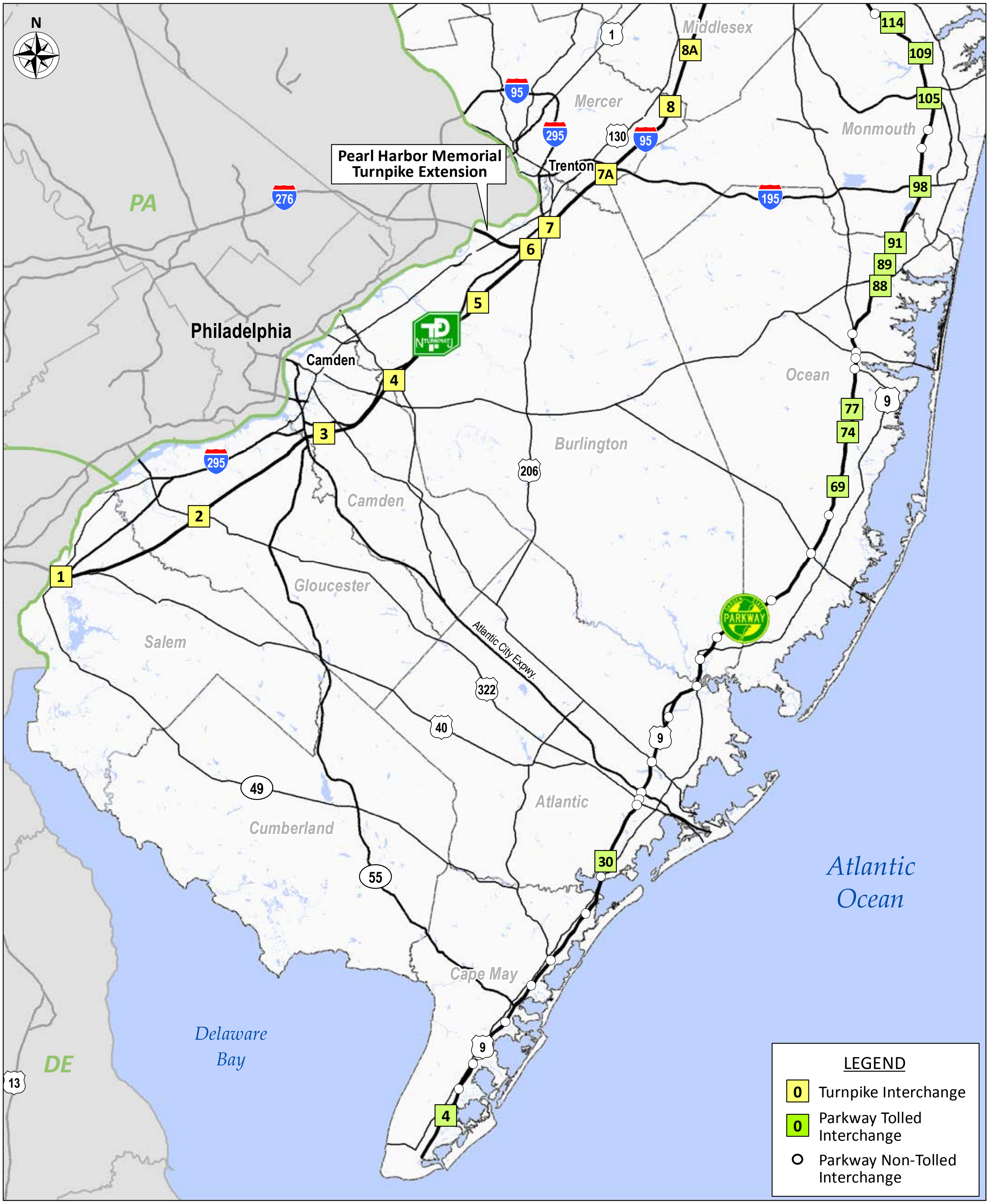
DETAIL MAP OF NORTHERN NEW JERSEY

FIGURE 2-2



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CDM Smith

DETAIL MAP OF SOUTHERN NEW JERSEY

FIGURE 2-3

The NJTA has recently completed the Interchange 6 to 9 Widening Program, resulting in three outer and three inner lanes per direction between Interchange 6 to Interchange 14. This construction project was initiated in 2009 and was completed in late 2014. North of Interchange 14, the inner and outer roadways merge together and then split into two alignments, a westerly alignment west of the Hackensack River and an easterly alignment on the east side of the river. Each alignment serves both northbound and southbound traffic. The westerly alignment provides three travel lanes per direction north to Interchange 16W (NJ Route 30), and two travel lanes per direction between Interchange 16W and the merge with the easterly alignment. The easterly alignment provides three travel lanes per direction.

The Newark Bay-Hudson County Extension is a four-lane, 8.2-mile roadway that extends from Interchange 14 and provides access to Bayonne, Jersey City, and the Holland Tunnel via Interchanges 14A, 14B, and 14C, respectively. This extension is designated as I-78 on its entire length. The Pearl Harbor Memorial Turnpike Extension is a six-lane, 5.7-mile roadway that provides a connection between the Turnpike mainline and the Pennsylvania Turnpike (I-276/I-76). There is only one Interchange on this extension (Interchange 6A).

The Garden State Parkway

The Parkway is a 173-mile roadway that follows the New Jersey coastline from its southern terminus in Cape May northward to Woodbridge where the Parkway crosses the Turnpike and continues in a northerly direction further inland, passing through Newark and Clifton before reaching the NJ/NY State line. The Parkway connects to the New State Thruway (Interstate 87) just north of the NJ/NY State line. Interchanges on the Parkway are numbered by milepost from south to north beginning with Interchange 0 in Cape May and ending with Interchange 171 in northern New Jersey. The Parkway provides access to the Atlantic City Expressway; Interstate Routes 195, 287, 95, 78, 280, and 80; the New Jersey Turnpike; and various U.S. and state highways.

Both commuters and tourists are served by the Parkway. Commuter and business traffic is high in the northern sections of the Parkway, as it passes through Bergen, Passaic, Essex, Union, and Middlesex counties near the New Jersey cities of New Brunswick, Newark, Jersey City, and New York City, NY. The proportion of tourist and recreational trips increases on the southern Parkway through Monmouth, Ocean, Atlantic, and Cape May counties. While commercial traffic does occur on the Parkway, heavy commercial vehicles (registered as 10,000 lbs. or more, or those having six tires or three-or-more axles) are prohibited from using the Parkway north of Interchange 105 in Monmouth County.

Two travel lanes per direction are provided on the Parkway from Interchange 0 (Cape May) to Interchange 6 in the northbound travel lanes and to Interchange 9 in the southbound lanes. The Parkway then has three lanes per direction until just north of Interchange 11. The Parkway maintains two lanes per direction until Interchange 36 (Fire Road in Atlantic County). Three travel lanes per direction are provided northward to Interchange 91 (Route 549 in Monmouth County), four lanes per direction through Interchange 102 (Neptune in Monmouth County), and five lanes per direction through Interchange 117 (Route 35 in Monmouth County). Six travel lanes per direction are provided between Interchanges 117 and 127 (I-287 in Union County), and five lanes per direction are provided northward through Interchange 140 in Union County. Four travel lanes per direction exist northward to Interchange 145 (I-280 in Essex County), six lanes per direction continue northward to Interchange 168 in Bergen County, and four lanes per direction continue to the New York State border.

The NJTA recently completed its third and final phase of a widening program to add an additional lane and full width shoulders between interchanges 35 and 80 on the Parkway, creating a total of three travel lanes in both directions. The widening project was completed and opened to traffic north of Interchange 36 in 2018. This project is discussed in further detail in Chapter 5 of this report.

Toll Collection

This section presents information on the current toll collection system, the toll schedule and accepted methods of payment, and discount programs.

Toll Collection Systems

There are two toll collection systems on the Turnpike System: a ticket system on the Turnpike (with the exception of two barrier toll plazas described below) and an open-barrier system on the Parkway.

On the Turnpike, motorists pick up a ticket upon entering the Turnpike and pay for the trip upon exiting the Turnpike. The toll rate is based on the trip entrance and exit (the trip distance), the vehicle class, the time of day, and the method of payment. There are no toll-free movements on the ticket system. There are two barrier plazas that are part of the Turnpike, but not part of the ticket system. These are located at Interchanges 6A (Florence) and 17 (Lincoln Tunnel, Secaucus). At these two locations, motorists pay a fixed toll for passing through the toll plaza. Tolls are collected in the northbound direction at Interchange 17 and in the eastbound direction at Interchange 6A. There are 28 interchanges on the Turnpike.

On the Parkway, motorists pay a fixed toll at mainline and ramp barrier toll plazas. The toll is based on the type of barrier (mainline or ramp), vehicle class, the time of day, and method of payment. One trip may pass through multiple toll barriers. There are 11 mainline barrier locations, and 23 interchanges that have ramp barrier toll plazas. Out of the 11 mainline barriers, only one, Toms River at milepost 85, support toll collection in both the northbound and southbound directions. The ten other mainline barriers were all gradually converted from two-way to one-way toll collection (either northbound or southbound) to create greater efficiencies in the toll collection system and reduce motorist delay.

Toll Schedule and Methods of Payment

Both the Turnpike and the Parkway accept cash and E-ZPass for toll payments. Peak periods are defined by the NJTA as 7:00 to 9:00 AM and 4:30 to 6:30 PM Monday through Friday, and all-day Saturday and Sunday for both toll road facilities. Both toll roads have a separate toll schedule for the following vehicle classes:

- 2-axle passenger cars;
- 2-axle trucks;
- 3-axle trucks;
- 4-axle trucks;
- 5-axle trucks;
- 6-or-more axle trucks;

- 2-axle buses; and
- 3-axle buses.

The NJTA offers automatic discounted toll rates on both toll roads to vehicles equipped with a NJ E-ZPass transponder. The eligibility for the discount is based on time of day, vehicle class, and other factors. Other discount programs which require enrollment are offered on one or both toll roads. These programs include a Senior Citizen Discount and a Green Pass Discount (eligible low-emissions vehicles) among others.

The current toll schedule was implemented on January 1, 2012. Currently, the toll rate for a passenger car paying with cash or E-ZPass to travel the entire length of the Turnpike during a peak period is $13.85, which is equivalent to 11.4 cents per mile. The toll rate for a through trip on the Parkway is $8.25 or 4.8 cents per mile for a passenger car paying with either cash or E-ZPass.

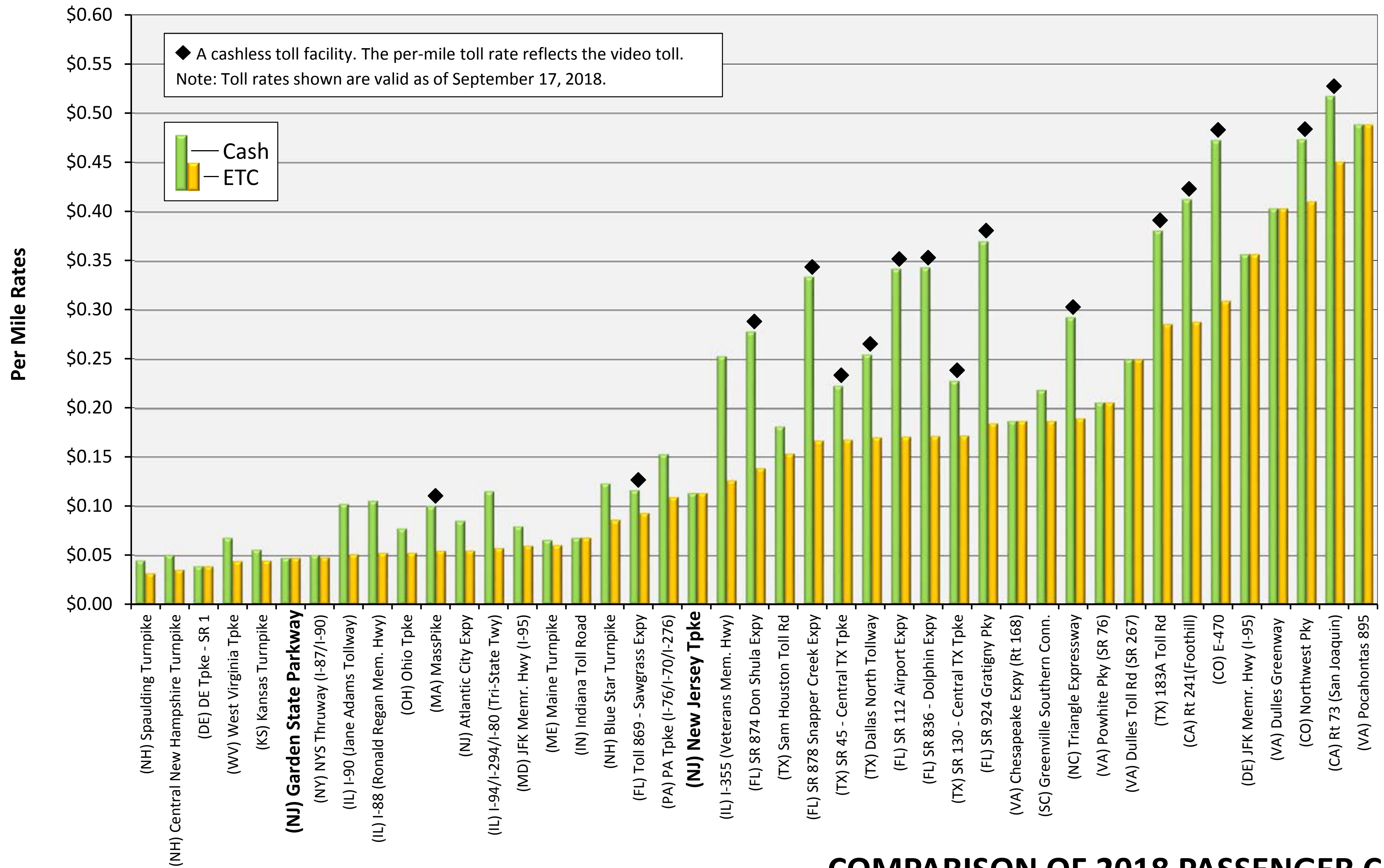
For five-axle vehicles on the Turnpike, a through trip toll for a cash customer costs $49.75, or 40.8 cents per mile. The same trip for a peak period E-ZPass customer costs $45.45, or 37.3 cents per mile. Just as for passenger cars, five-axle per-mile toll rates on the Parkway are much less. A round trip on the Parkway for a five-axle vehicle between Milepost 0 and 105 (trucks are prohibited north of Milepost 105) costs $45.00 for both cash and peak period E-ZPass customers. This amounts to a per-mile rate of 21.1 cents.

Figures 2-4 and **2-5** help to put these per-mile toll rates in perspective. Figure 2-4 graphically shows the passenger car cash and ETC per-mile toll rates for both the New Jersey Turnpike and Parkway, along with the passenger car per-mile rates for other toll facilities throughout the United States. Figure 2-5 shows the same information for five-axle vehicles. In both figures, the toll facilities are placed in order of their ETC per-mile rate, from lowest on the left to highest on the right. As evident in these two figures, Parkway per-mile rates are very low compared to those on the other facilities. Even though the Turnpike's rank is more toward the middle of the two figures, its per-mile rates are still relatively low, especially when considering that it serves some of the highest income populations in the country.

2017 Toll Transactions and Gross Toll Revenue by Facility

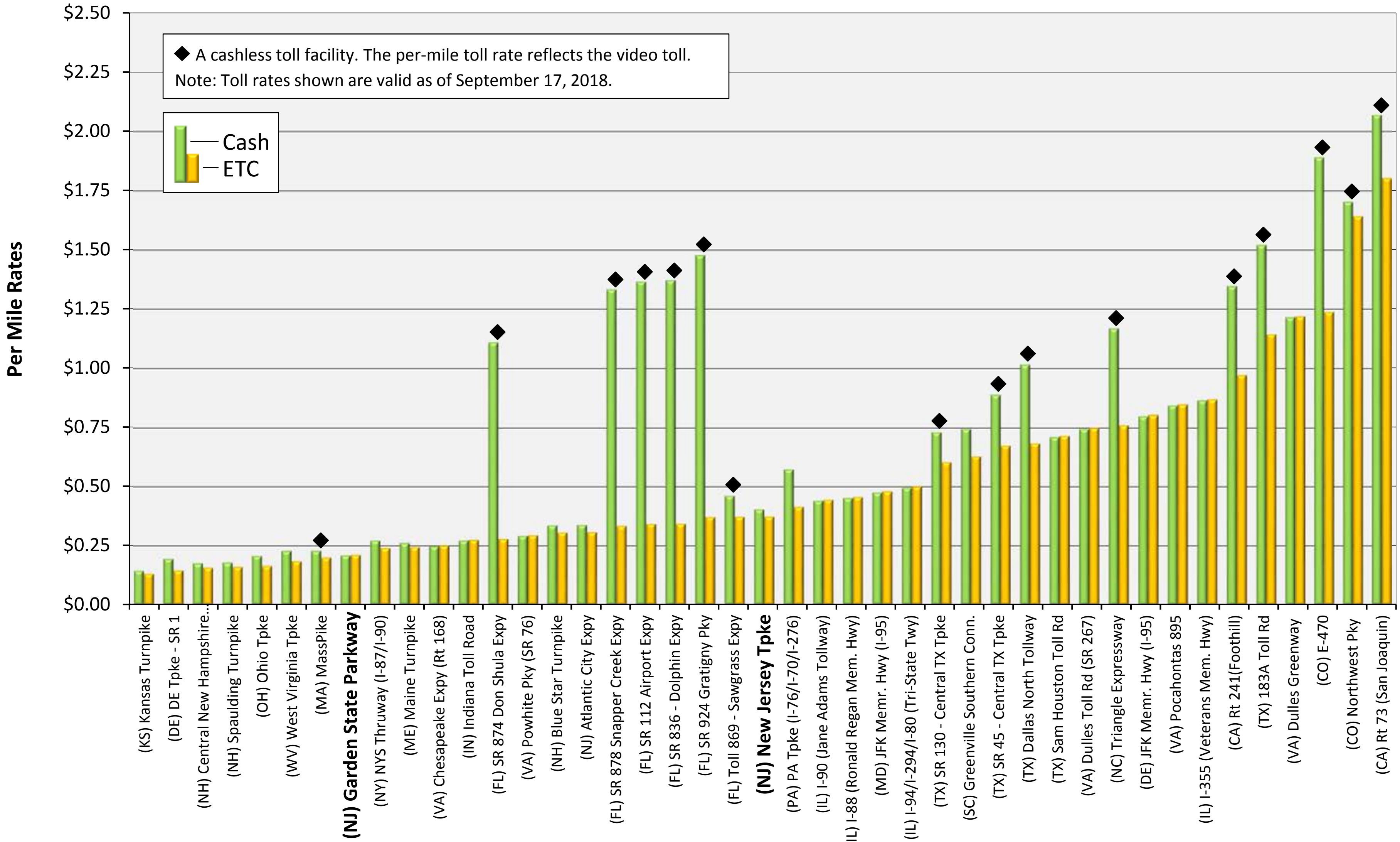
As presented in **Figure 2-6**, approximately 72.9 percent of the systemwide 2017 annual gross toll revenue was collected on the Turnpike compared to 27.1 percent on the Parkway. This reflects the higher per-mile toll rate structure on the Turnpike compared to the Parkway. In 2017, the Turnpike generated $1,152 million in gross toll revenue compared to $428 million for the Parkway.

In contrast, the Turnpike generated only 39.9 percent of the total 2017 toll transactions compared to 60.1 percent generated by the Parkway. The Turnpike generates fewer toll transactions because one transaction accounts for the entire trip while multiple transactions may occur on a Parkway trip. In 2017, the Turnpike generated approximately 261 million toll transactions compared to 393 million toll transactions for the Parkway.



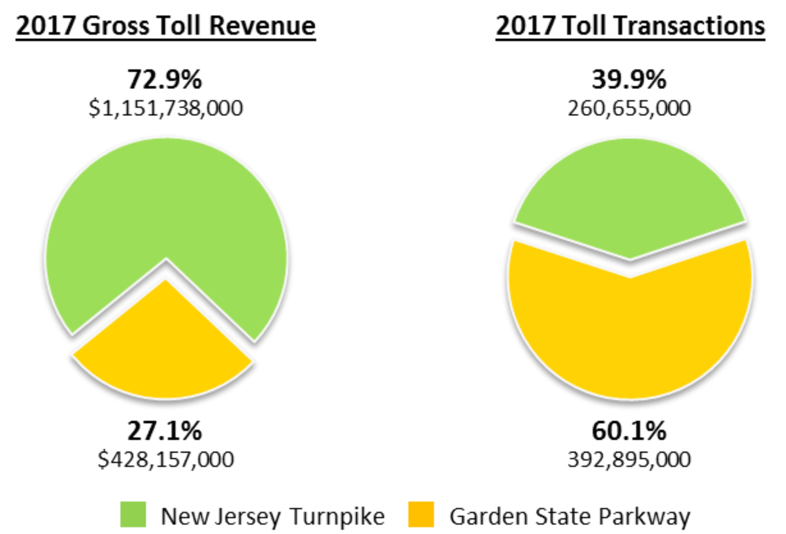
COMPARISON OF 2018 PASSENGER CAR PER-MILE THROUGH TRIP TOLL RATES (DATA SORTED BY ETC TOLL RATES)

FIGURE 2-4



COMPARISON OF 2018 FIVE-AXLE VEHICLE PER-MILE THROUGH TRIP TOLL RATES (DATA SORTED BY ETC TOLL RATES)

FIGURE 2-5



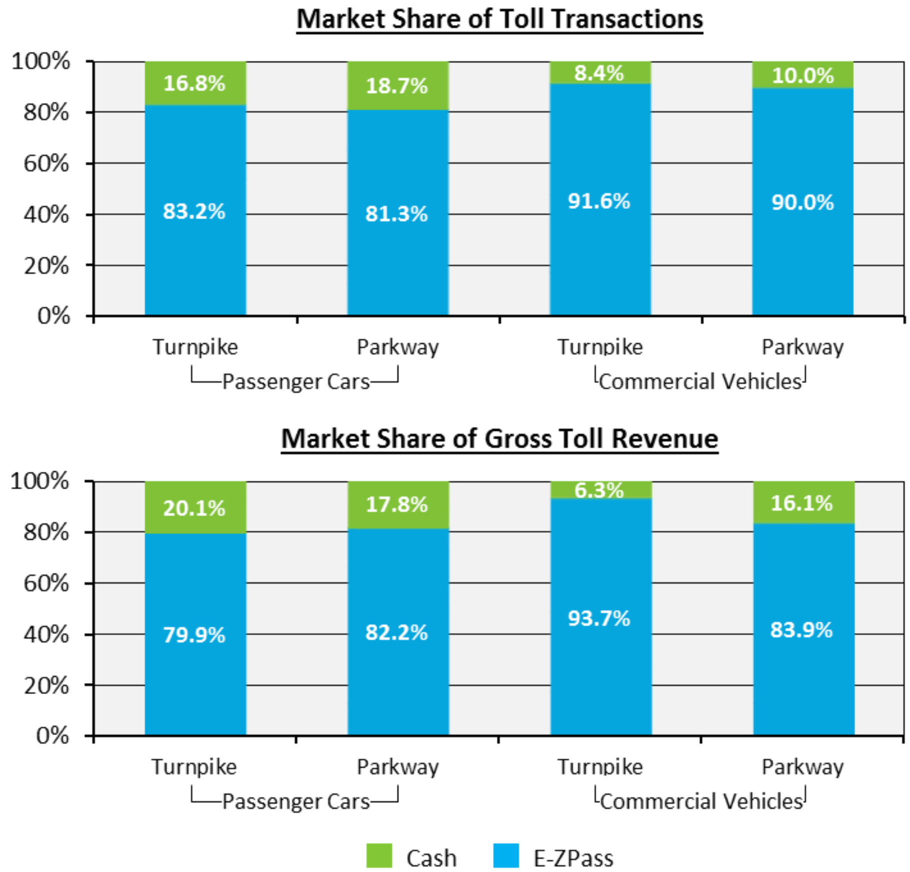
TOLL TRANSACTIONS AND GROSS TOLL REVENUE DISTRIBUTION BY FACILITY

FIGURE 2-6

2017 E-ZPass Market Share

E-ZPass is the preferred method of payment on both the Turnpike and the Parkway. The market share of E-ZPass in 2017 for the Turnpike and Parkway is presented in **Figure 2-7**. E-ZPass comprised 83.2 percent of all Turnpike and 81.3 percent of all Parkway passenger-car toll transactions. The E-ZPass market share was even higher for commercial vehicles, totaling 91.6 percent of all commercial-vehicle transactions on the Turnpike and 90.0 percent on the Parkway.

The market share of gross toll revenue generated by E-ZPass compared to cash was very similar to the market share by transactions. About 79.9 percent of passenger-car gross toll revenue was generated by E-ZPass on the Turnpike and 82.2 percent on the Parkway. About 93.7 percent of commercial-vehicle gross toll revenue was generated by E-ZPass on the Turnpike and 83.9 percent on the Parkway.



2017 E-ZPass MARKET SHARE

FIGURE 2-7

2017 Vehicle Class Distribution

Passenger-car transactions comprised the vast majority of total toll transactions on both the Turnpike and the Parkway. The vehicle class distribution in 2017 is presented in **Table 2-1**. Passenger cars comprised 87.2 percent of all Turnpike transactions, and 98.7 percent of Parkway transactions. On the Turnpike, five-axle trucks totaled 5.9 percent of total transactions.

Table 2-1
2017 Vehicle Class Distribution
By Toll Transactions and Gross Toll Revenue
(Percent Distribution)

Vehicle Class	Description	2017 Toll Transactions Turnpike	2017 Toll Transactions Parkway	2017 Toll Transactions Total System	2017 Gross Toll Revenue Turnpike	2017 Gross Toll Revenue Parkway	2017 Gross Toll Revenue Total System
1	Passenger Cars	87.2	98.7	94.1	69.1	96.2	76.4
2	2-Axle Trucks	3.3	0.2	1.5	5.1	0.4	3.9
3	3-Axle Trucks	1.4	0.3	0.7	2.3	0.8	1.9
4	4-Axle Trucks	1.1	0.2	0.6	2.8	0.9	2.3
5	5-Axle Trucks	5.9	0.1	2.4	18.3	0.6	13.5
6	6-or-More Axle Trucks	0.2	0.0	0.1	0.6	0.0	0.5
B2	2-Axle Buses	0.2	0.2	0.2	0.2	0.4	0.3
B3	3-Axle Buses	0.8	0.2	0.4	1.5	0.6	1.3
Total		100.0	100.0	100.0	100.0	100.0	100.0
Passenger Cars (Class 1)		87.2	98.7	94.1	69.1	96.2	76.4
Commercial Vehicles (Classes 2-6, B2,B3)		12.8	1.3	5.9	30.9	3.8	23.6

Source: NJTA

On the revenue side, Turnpike passenger cars generated 69.1 percent of the 2017 annual gross toll revenue and five-axle trucks generated 18.3 percent. Parkway passenger cars generated 96.2 percent of the 2017 annual gross toll revenue.

2017 Mainline Traffic Volumes

The Turnpike and Parkway each serve a vast number of motorists every day. **Table 2-2** presents annual average daily traffic (AADT) volumes on mainline sections of the Turnpike in 2017 and shows the percent trucks of the total volume. The AADTs are for both directions of travel. On the Turnpike Mainline, AADTs ranged from 49,800 at the southern terminus (between Interchanges 1 and 2) to a high of 269,500 between Interchanges 13 (Elizabeth) and 13A (Newark Airport – Elizabeth Seaport). AADTs peaked at 138,200 on the Easterly Alignment and 137,100 on the Westerly Alignment in 2017. Annual average daily traffic volumes ranged from 78,100 to 105,300 in 2017 on the Newark Bay-Hudson County Extension, and from 36,700 to 40,200 on the Pearl Harbor Memorial Extension.

Mainline traffic data on the Parkway is only available where there is a mainline barrier toll plaza. There are 11 mainline barrier toll plazas on the Parkway, and only one of them (Toms River) operates in both the northbound and southbound directions. 2017 mainline AADTs on the Parkway are shown

Table 2-2
2017 Annual Average Daily Traffic
Volumes On Mainline Segments
New Jersey Turnpike
(Both Directions)

Mainline Section Between Interchanges: Interchange	Interchange	2017 AADT (1)	Percent Commercial Vehicles
Mainline			
1	2	49,800	12.4
2	3	53,400	12.4
3	4	64,300	12.3
4	5	84,000	12.3
5	JCT. (2)	89,900	12.2
JCT. (2)	7	119,000	13.1
7	7A	132,300	14.1
7A	8	150,200	15.1
8	8A	155,600	14.7
8A	9	175,700	14.4
9	10	206,500	13.1
10	11	193,400	13.4
11	12	231,600	13.8
12	13	247,900	14.2
13	13A	269,500	14.8
13A	14	227,200	15.1
14	M (3)	249,300	15.3
Mainline Easterly Alignment			
M (3)	15E	124,300	14.0
15E	JE (4)	121,100	14.0
JE (4)	15X	138,200	13.2
15X	16E/18E	127,900	12.6
17	N (5)	67,700	15.0
Mainline Westerly Alignment			
M (3)	JW (6)	125,000	16.4
JW (6)	15W	137,100	17.7
15W	16W	130,300	16.6
16W	18W	92,100	17.4
Newark Bay-Hudson County Extension			
14	14A	105,300	8.7
14A	14B	81,200	5.9
14B	14C	78,100	5.4
Pearl Harbor Memorial Turnpike Extension			
JCT (2)	6	36,700	15.0
6	Bridge (7)	40,200	15.9

(1) Annual Average Daily Traffic
(2) JCT = the interchange between the Turnpike Mainline and the Pearl Harbor Memorial Turnpike Extension.
(3) M = The point where the dual-dual lanes terminate and merge into the easterly and westerly alignments.
(4) JE = southernmost access point on the easterly alignment.
(5) N = mainline section north of Interchange 17.
(6) JW = southernmost access point on the westerly alignment.
(7) Bridge = the bridge over the Delaware River that ties into I-276 in PA.into the easterly and westerly alignments.
Source: NJTA

in **Table 2-3** at the mainline barrier plazas. Actual AADTs are shown in the tolled direction and estimated two-directional AADTS are shown based on doubling the traffic volume in the tolled direction. Mainline 2017 AADTs ranged from 31,600 at the southernmost plaza (Cape May) to 229,600 at the Raritan Plaza.

Table 2-3
2017 Annual Average Daily Traffic Volumes
At Mainline Toll Plazas
Garden State Parkway
(By Direction)

		2017 Annual Average Daily Traffic		
Milepost	Mainline Toll Plaza	NB (1)	SB (2)	Both (3)
166	Pascack Valley *	na	42,300	84,600
161	Bergen*	74,100	na	148,200
151	Essex*	na	76,800	153,600
142	Union*	105,700	na	211,400
124	Raritan*	na	114,800	229,600
104	Asbury Park*	79,600	na	159,200
85	Toms River	50,600	47,300	97,900
69	Barnegat*	na	33,500	67,000
54	New Gretna*	19,000	na	38,000
29	Great Egg*	na	20,100	40,200
19	Cape May*	15,500	na	31,000

(1) NB = northbound
(2) SB = southbound
(3) These are estimated AADTs based on doubling the reported traffic in the tolled direction.

* These mainline toll plazas have one-way toll collection. Traffic volumes are not available in the non-tolled direction.

Source: NJTA

2017 Mainline Monthly and Daily Traffic Volumes

This section presents 2017 monthly and daily traffic variations on select Turnpike and Parkway mainline segments. Recall that mainline traffic volume data is only available at mainline toll barriers on the Parkway, in the tolled direction. The following mainline sections were selected to illustrate the range of conditions on the facilities from the southern to the northern locations:

Turnpike mainline segments:

- Interchange 1 (Delaware Memorial Bridge) to 2 (Swedesboro-Chester);
- Interchange 7 (Bordentown-Trenton) to 7A (Allentown-Trenton);
- Interchange 9 (New Brunswick) to 10 (Edison); and
- Interchange 16W (NJ 3-Sportsplex) to 18W (George Washington Bridge).

Parkway mainline segments:

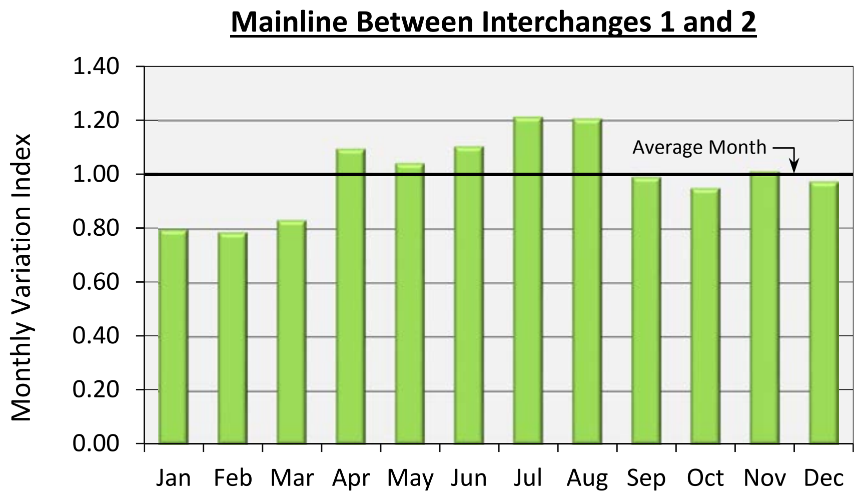
- Cape May Mainline Plaza – northbound (milepost 19);
- Toms River Mainline Plaza – northbound (milepost 85);
- Union Mainline Plaza – northbound (milepost 142); and
- Bergen Mainline Plaza – northbound (milepost 161).

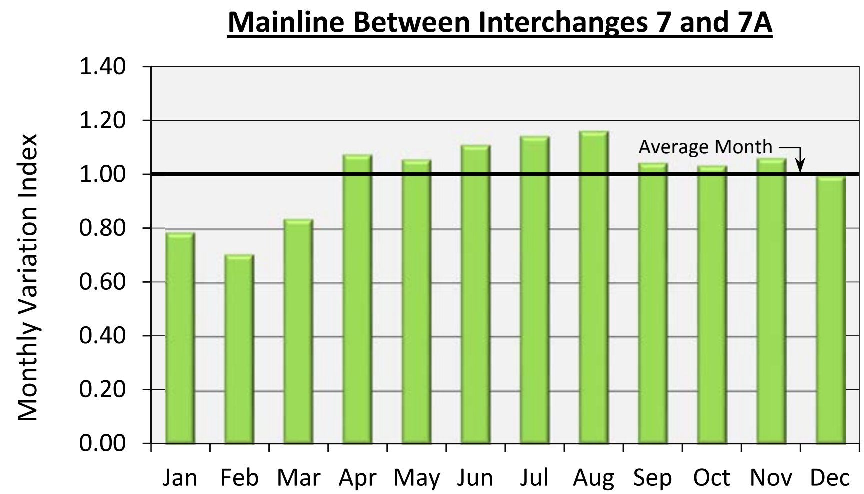
The Turnpike characteristics are based on the total two-way traffic on each link, and the Parkway characteristics are based on northbound traffic.

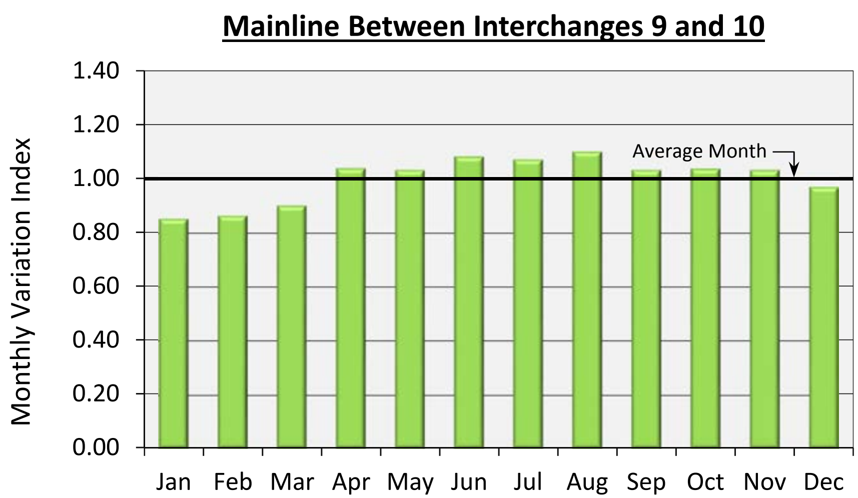
Monthly Traffic Variations

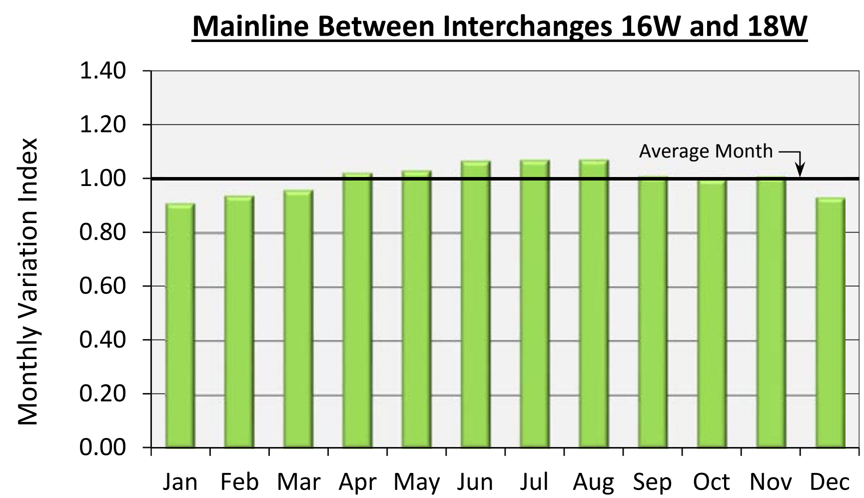
Based on the four selected Turnpike mainline locations, the 2017 monthly traffic variations were greatest in the southern, more rural locations and less pronounced in the northern, more urban locations. These variations are shown in **Figure 2-8**. The traffic variations are based on average daily traffic (ADT) per month, and an index of 1.00 represents the "average month". In general, daily traffic volumes peaked during the summer months and reached their low point in January or February. As shown in Figure 2-8, average daily traffic on the southernmost Turnpike link, Interchange 1 – 2, in July was 21 percent higher than the average month, while the ADT in February was 79 percent of the average month. This represents a 42-percentage point spread in monthly ADTs. The total spread at mainline sections between Interchanges 7 – 7A was 46 percentage points. In contrast, the total spread decreased to 25 and 16 percentage points at mainline sections between Interchanges 9 – 10, and 16W and 18W, respectively. June, July, and August traffic were all only 7 percent higher than the average month, and January traffic was 91 percent of the average month on the mainline between Interchanges 16W and 18W.

Monthly traffic variations for the Parkway are presented in **Figure 2-9**. The variations are shown for northbound traffic at the selected mainline barrier toll plazas. Similar to the Turnpike, monthly ADTs peaked in the summer months, and reached the lowest level in January. Average daily traffic on the southern mainline section that contains the Cape May toll plaza was 75 percent greater than the average month in both July and August, and January traffic was only 59 percent of the average month. This represents a 116-percentage point spread between the lowest and highest traffic month. The total percentage point spread in monthly variations decreased to 40 points at the Toms River mainline barrier (milepost 85), and to 19 and 17 percentage points at the Union and Bergen mainline barriers, respectively. At the Bergen mainline barrier, June daily traffic was 6 percent greater than the average month, and January daily traffic was 89 percent of the average month.







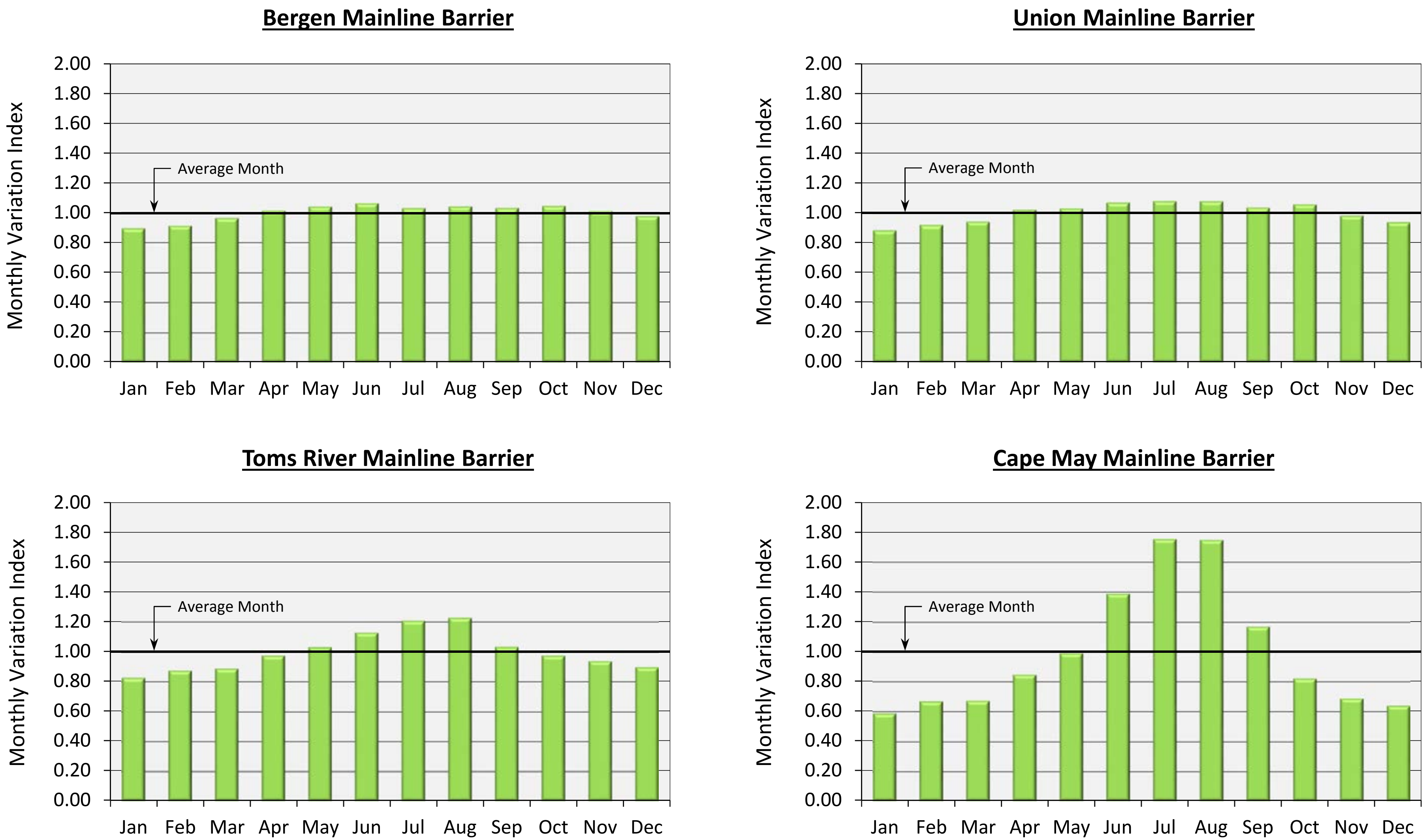


Note: Based on Two-Way Traffic Volumes.
Source: NJTA

CDM Smith

TURNPIKE: 2017 MONTHLY TRAFFIC VARIATIONS

FIGURE 2-8



Note: Based on Northbound Traffic Volumes.
Source: NJTA

CDM Smith

PARKWAY: 2017 MONTHLY TRAFFIC VARIATIONS

FIGURE 2-9

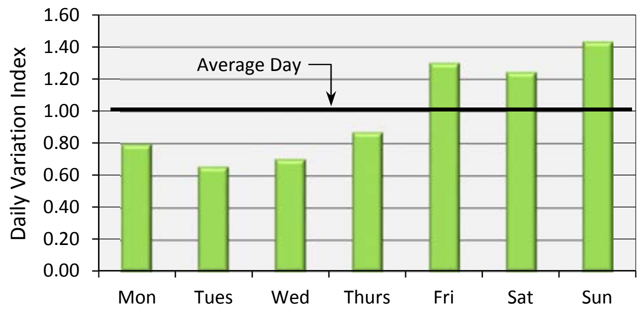
Daily Traffic Variations

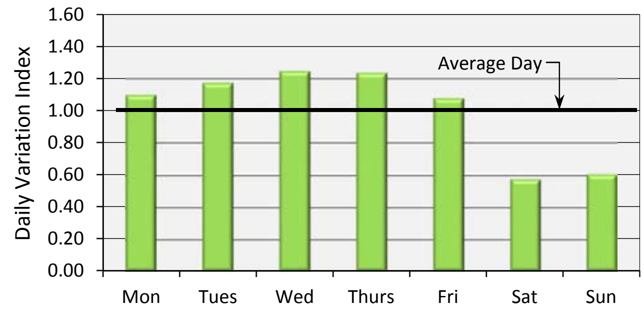
A sample of daily mainline traffic volumes at the select mainline locations was provided by the NJTA. The sample consisted of a week of traffic data in April 2018. The daily variations on the Turnpike are presented in **Figure 2-10** for passenger cars and commercial vehicles. As anticipated, commercial-vehicle traffic volumes were very consistent throughout the weekdays, and declined on Saturday and Sunday. Daily passenger-car traffic volumes were most consistent on the northern, more urban sections, and showed more daily variation in the southern sections of the Turnpike. On the northern portion of the Turnpike, between Interchanges 16W and 18W, Saturday passenger-car traffic was 14 percent greater than the average day, and Monday passenger-car traffic was 91 percent of the average day. On the southern mainline section between Interchanges 1 and 2, Sunday passenger-car traffic was 43 percent greater than the average day, and Tuesday passenger-car traffic was 66 percent of the average day. In general, Turnpike passenger-car traffic peaked on Saturday or Sunday and reached its lowest volume on a Monday or Tuesday.

Daily traffic variations for the Parkway are shown in **Figure 2-11**. The daily variations are shown for total traffic, as the percentage of trucks is very small. At the two more northerly locations (Bergen and Union mainlines) the daily traffic volumes peaked on Friday and reached the lowest volume on Sunday. At the Toms River location, the daily traffic volumes also peaked on Friday and reached the lowest volume on Sunday. At the southernmost Cape May location, daily traffic volumes peaked on Sunday and reached the lowest volume on Monday. This is indicative of the higher proportion of tourist and recreational traffic on the southern sections of the Parkway.

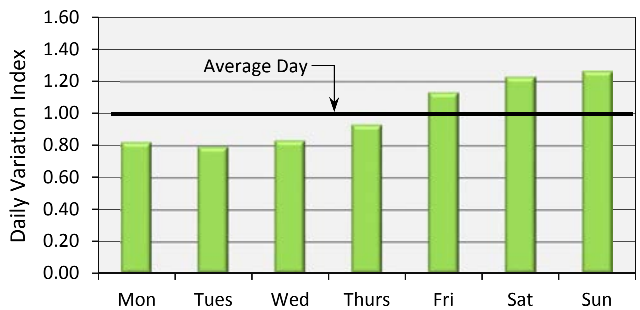
Passenger Cars | **Commercial Vehicles**

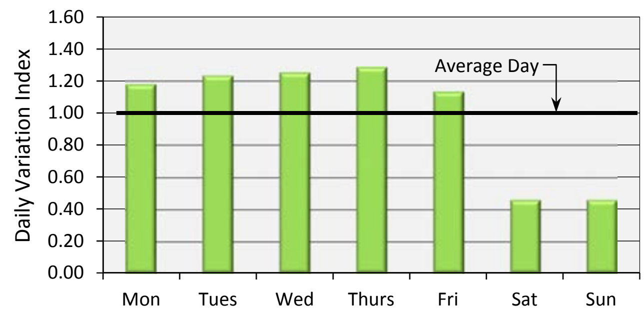
Mainline Between Interchanges 1 and 2



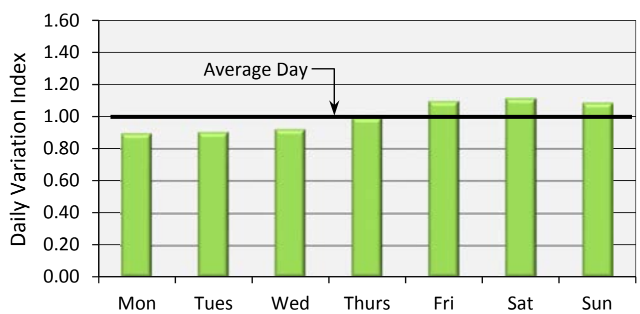


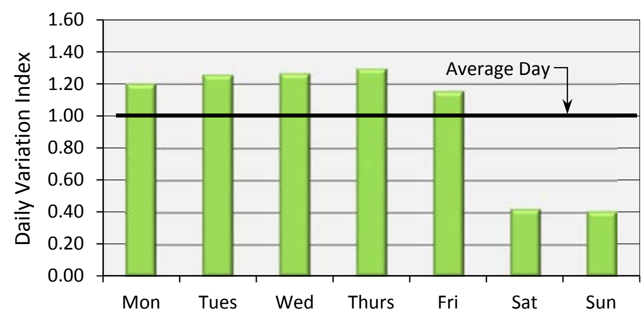
Mainline Between Interchanges 7 and 7A



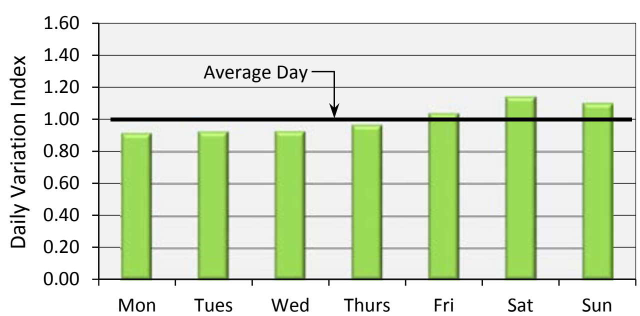


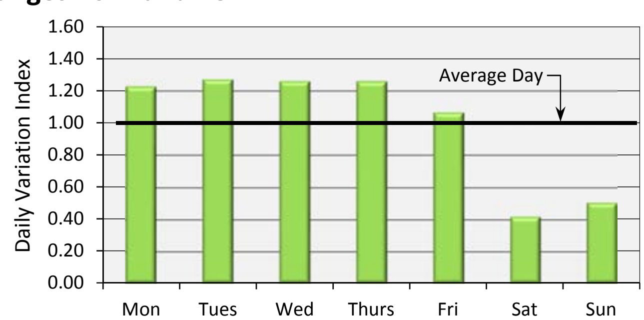
Mainline Between Interchanges 9 and 10





Mainline Between Interchanges 16W and 18W



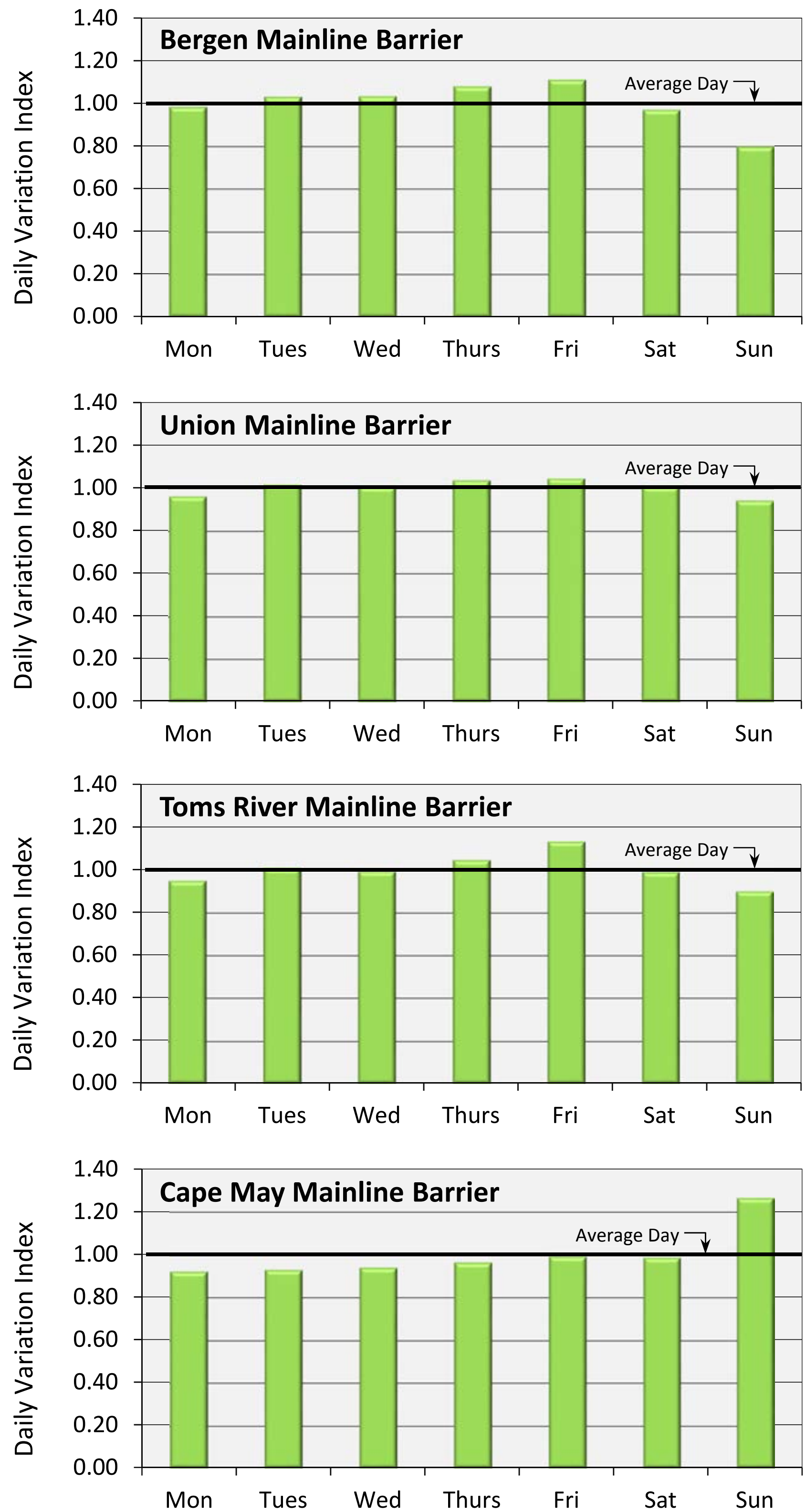


Note: Based on Two-Way Traffic Volumes.
Source: NJTA

CDM Smith

TURNPIKE: APRIL 2018 DAILY TRAFFIC VARIATIONS

FIGURE 2-10



Note: Based on Northbound Traffic Volumes.
Source: NJTA

PARKWAY: APRIL 2018 DAILY TRAFFIC VARIATIONS

FIGURE 2-11

Chapter 3

Historical Transaction and Toll Revenue Trends

This chapter presents historical toll transaction and toll revenue trends that have occurred on the Turnpike and Parkway and their relationships to changes in the toll rate schedule, the conversion of toll plazas on the Parkway to one-way tolling (from two-way tolling), and the economy. Both annual and monthly trend data are presented and analyzed. Annual trends in the E-ZPass market share and the vehicle class composition are also presented. Chapter 4 (Corridor Growth Analysis) will describe how the trend data was incorporated into the development of future-year growth rate estimates for toll transactions.

Historical Changes in the Toll Schedule and Toll Collection

Toll rates were increased five times on the Turnpike and twice on the Parkway since 1991. In addition, ten mainline toll plazas on the Parkway were converted from two-way tolling to one-way tolling between 2004 and 2012. Toll collection was discontinued at four ramp toll plazas on the Parkway as part of the conversion to one-way toll collection.

Changes in the Toll Schedule

Table 3-1 presents historical toll schedule increases and discount program modifications on the Turnpike since 1991. The changes are shown for passenger cars and commercial vehicles, by cash and E-ZPass, and by peak and off-peak time periods. **Table 3-2** presents the same information for the Parkway. Of most significance in recent years were the toll rate increases implemented in December 2008 (a 40-percent increase on the Turnpike and a 43-percent toll increase on the Parkway) and January 2012 (a 53-percent increase on the Turnpike and a 50-percent toll increase on the Parkway). The 2008 toll rate increase had a negative impact on transactions and a positive impact on toll revenue. Similarly, the 2012 toll rate increase had a negative impact on toll transactions, and a positive impact on toll revenue.

Conversion to One-Way Tolling

Table 3-3 identifies the Parkway toll plaza locations that were affected as part of the conversion to one-way toll collection. When any toll plaza was converted from two-way to one-way tolling, toll collection was discontinued in the non-tolled direction and the toll rate was doubled in the tolled direction. The following are the general impacts on toll transactions and toll revenue due to the one-way toll conversion:

- The total number of tolled transactions at the affected toll plazas decreased by approximately half due to the discontinuation of tolling in the non-tolled direction;
- The toll rate was doubled in the remaining tolled direction at the affected toll plazas; and
- The net impact was a small reduction in total gross toll revenue due to a small reduction in toll transactions in the remaining tolled direction. The reduction in transactions in the tolled direction was due to the doubling of the toll rate.

Table 3-1
Historical Toll Schedule Changes
New Jersey Turnpike

		Percent Change in Toll Rates			
		Passenger Cars		Commercial Vehicles	
Date	**Time Period (1)**	Cash	E-ZPass	Cash	E-ZPass
Scheduled Toll Increases					
3/17/1991	All	70	na	100	na
9/30/2000 (2)	Peak	20	8	13	8
	Off-peak	20	0	13	8
1/1/2003	Peak	17	10	13	8
	Off-peak	17	5	13	8
12/1/2008	All	40	40	40	40
1/1/2012	All	53	53	53	53
Discount Program Modifications					
1/1/2006 (3)	Peak	0	15	0	15
	Off-peak	0	0	0	0
7/1/2011 (4)	Peak	0	0	0	0
	Off-peak	0	33	0	0

(1) Peak hours are 7:00 - 9:00 AM and 4:30 - 6:30 PM through Friday and all day Saturday and Sunday. Off-peak hours are all other hours.
(2) E-ZPass and variable pricing were implemented on the Turnpike. A toll differential was implemented between cash and E-ZPass. Peak and off-peak hours were defined, and a toll differential implemented for E-ZPass between peak and off-peak periods.
(3) The E-ZPass discount was eliminated for cars and trucks that traveled during peak hours.
(4) The E-ZPass discount was eliminated for passenger-car non-NJ E-ZPass accounts.

Source: NJTA

Table 3-2
Historical Toll Schedule Changes
Garden State Parkway

		Percent Change in Toll Rates					
		Passenger Cars			Commercial Vehicles		
Date	**Time Period (1)**	Cash	Token (2)	E-ZPass	Cash	Token (2)	E-ZPass
Scheduled Toll Increases							
12/1/2008	All	43	0	43	43	0	43
1/1/2012	All	50	na	50	50	na	50
Discount Program Modifications							
11/19/2001 (3)	All	0	0	(6)	0	0	(6)
11/18/2002 (4)	All	0	0	6	0	0	6
12/1/2008 (5)	Peak	0	0	0	0	0	0
	Off-peak	0	0	0	0	0	(5)
1/1/2009 (6)	All	0	6	0	0	6	0

(1) Peak Hours are 7:00 - 9:00 AM and 4:30 - 6:30 PM Monday through Friday and all day Saturday and Sunday. Off-peak hours are all other hours.
(2) Tokens no longer sold after January 2002, although they were still accepted for toll
(3) E-ZPass dscounts were implemented on 11/19/2001. Prior to this, cash and E-ZPass rates were the same.
(4) The E-ZPass discount was discontinued.
(5) An E-ZPass discount was implemented for commercial vehicles during off-peak time periods.
(6) Tokens were no longer accepted. Customers who previously used tokens incurred a 6 percent toll increase if they paid cash.

Source: NJTA

Table 3-3
Toll Plaza Locations Impacted By
The Conversion To One-Way Toll Collection
Garden State Parkway

Year	Month	Milepost	Location (1)
2004	September	124	Raritan - northbound mainline
2004	September	105	Eatontown Ramp - southbound exit
2004	September	104	Asbury Park - southbound mainline
2005	March	142	Union Ramp - southbound exit
2005	March	142	Union - southbound mainline
2005	July	151	Essex - northbound mainline
2005	December	161	Bergen - southbound mainline
2005	December	159	Saddle Brook Ramp - southbound entry
2006	January	54	New Gretna - southbound mainline
2006	January	30	Somers Point Ramp - northbound entry
2006	January	29	Great Egg - northbound mainline
2006	January	19	Cape May - southbound mainline
2007	March	69	Barnegat - northbound mainline
2010	February	166	Pascack Valley - northbound mainline
2018	July	145	East Orange - northbound exit

(1) The direction identified at each location is now the toll-free direction.

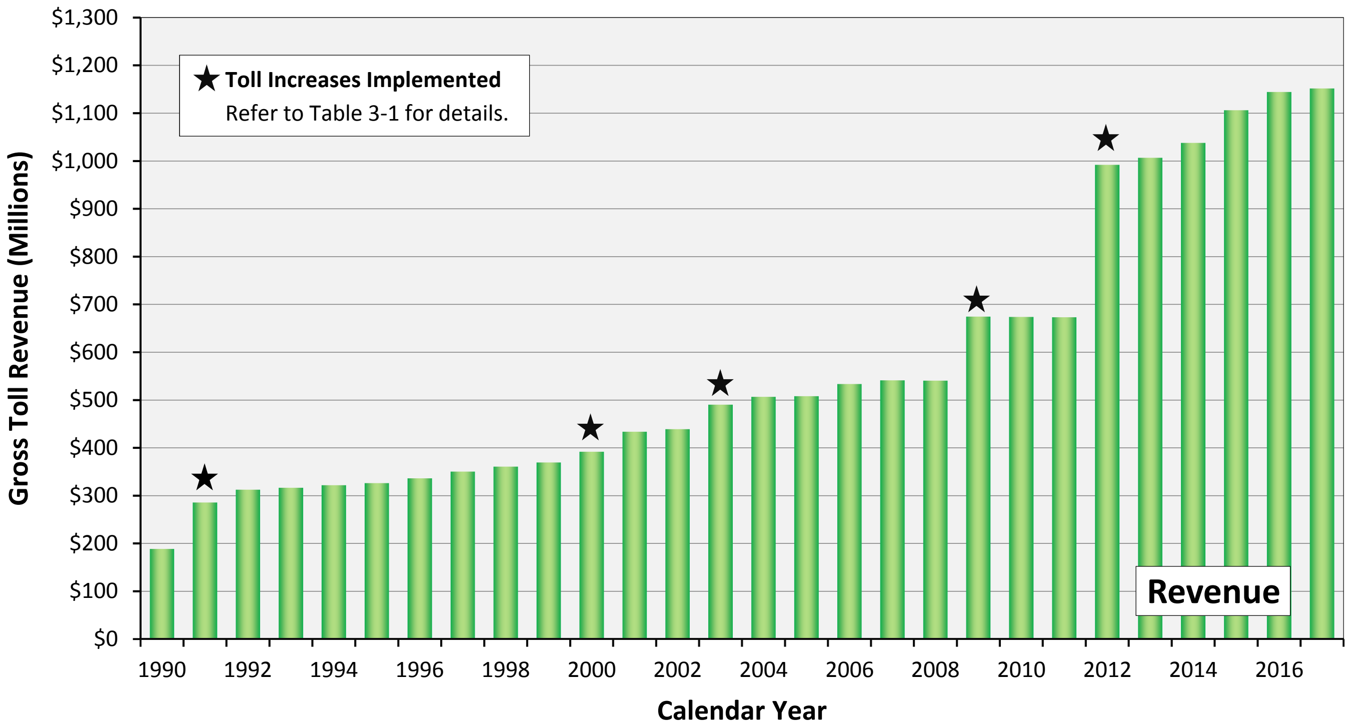
Source: NJTA

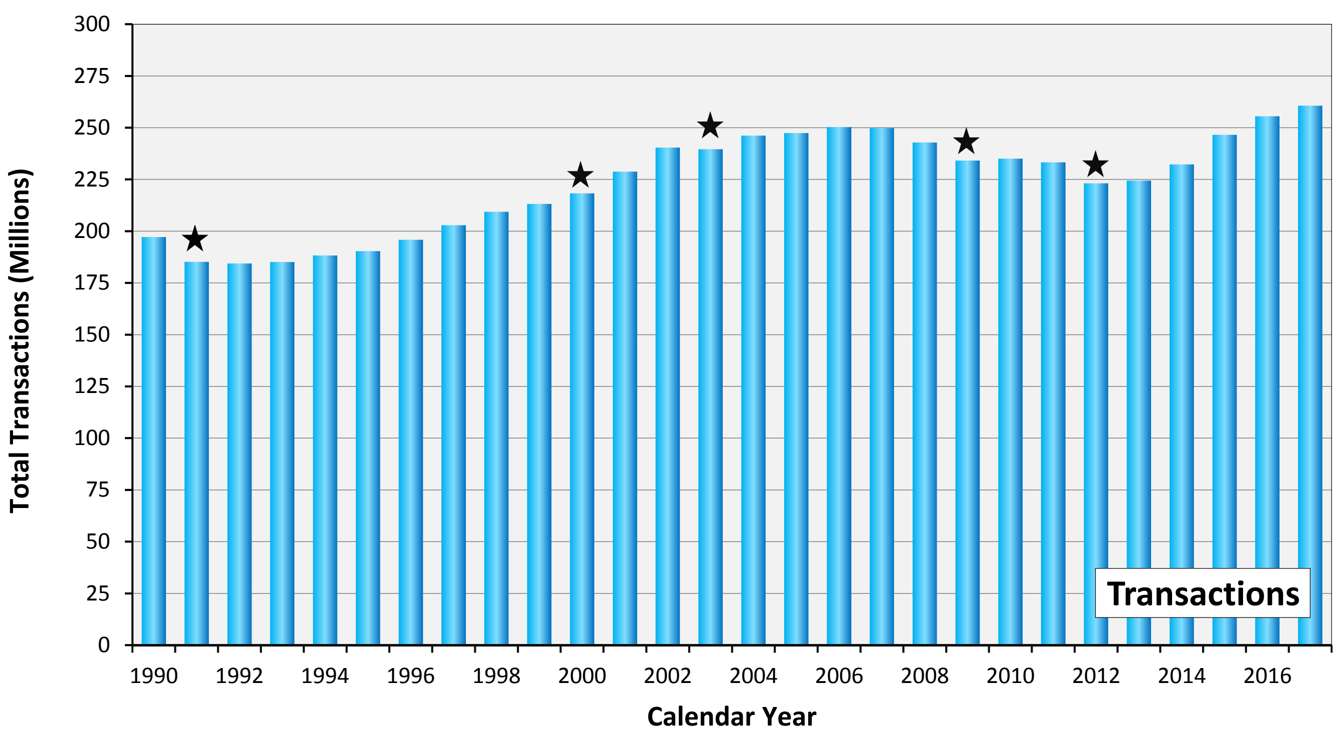
Annual Toll Transaction and Toll Revenue Trends

Annual toll transaction and toll revenue data were obtained from the NJTA. Data was provided from 1990 through 2017 for the Turnpike and from 1993 through 2017 for the Parkway. Turnpike data was provided by passenger car and commercial vehicle, while the Parkway data was aggregated to total vehicles as the percentage of commercial vehicles is very small. The annual trend data was analyzed to help determine the impacts associated with toll increases, the economy, roadway improvements, and other variables. This section reviews the annual trend data for the two toll facilities.

Turnpike Trends

Turnpike transactions and gross toll revenue trends are shown in **Tables 3-4 and 3-5**, and **Figure 3-1**. As shown in Table 3-4 and Figure 3-1, total toll transactions generally increased from 1992 to 2006 despite a toll increase in 2000 and 2003. Annual transactions decreased by 0.2 percent in 2007 and 2.8 percent in 2008 largely due to the economy, and by 3.6 percent in 2009 due to the combined effects of the economy and the 40 percent toll increase implemented on December 1, 2008. Transaction growth remained relatively flat through 2011 due to slow economic recovery. The 53-percent toll increase in January 2012 resulted in a 4.3 percent decrease in total toll transactions.





TURNPIKE: ANNUAL TOLL TRANSACTION AND TOLL REVENUE TRENDS

FIGURE 3-1

Table 3-4
Annual Toll Transaction Trends
(Thousands of Vehicles)

		New Jersey Turnpike						Garden State Parkway			Total System	
Calendar Year		Cars	Percent Change Over Prior Year	Commercial Vehicles	Percent Change Over Prior Year	Total	Percent Change Over Prior Year		All Vehicles	Percent Change Over Prior Year	All Vehicles	Percent Change Over Prior Year
1990		171,993		25,574		197,167			na		na	
1991	(1)	162,177	(5.7)	23,016	(10.0)	185,193	(6.1)		na		na	
1992		161,766	(0.3)	22,620	(1.7)	184,386	(0.4)		na		na	
1993		162,458	0.4	22,609	(0.0)	185,067	0.4		516,423		701,490	
1994		164,724	1.4	23,556	4.2	188,280	1.7		515,244	(0.2)	703,524	0.3
1995		166,734	1.2	23,641	0.4	190,375	1.1		529,420	2.8	719,795	2.3
1996		171,318	2.7	24,513	3.7	195,831	2.9		536,026	1.2	731,857	1.7
1997		177,268	3.5	25,584	4.4	202,852	3.6		557,697	4.0	760,549	3.9
1998		182,911	3.2	26,497	3.6	209,408	3.2		576,186	3.3	785,594	3.3
1999		185,556	1.4	27,595	4.1	213,151	1.8		583,348	1.2	796,499	1.4
2000	(2)	189,617	2.2	28,666	3.9	218,283	2.4		597,870	2.5	816,153	2.5
2001		199,318	5.1	29,453	2.7	228,771	4.8		609,551	2.0	838,322	2.7
2002		209,855	5.3	30,510	3.6	240,365	5.1		620,905	1.9	861,270	2.7
2003	(3)	208,472	(0.7)	31,151	2.1	239,623	(0.3)		628,287	1.2	867,910	0.8
2004		214,095	2.7	32,104	3.1	246,199	2.7	(5)	610,085	(2.9)	856,284	(1.3)
2005		214,687	0.3	32,701	1.9	247,388	0.5	(5)	502,575	(17.6)	749,963	(12.4)
2006		217,306	1.2	32,999	0.9	250,305	1.2	(5)	427,197	(15.0)	677,502	(9.7)
2007		216,625	(0.3)	33,163	0.5	249,788	(0.2)	(5)	417,464	(2.3)	667,252	(1.5)
2008	(4)	210,926	(2.6)	31,943	(3.7)	242,869	(2.8)	(4)	407,032	(2.5)	649,901	(2.6)
2009		205,366	(2.6)	28,737	(10.0)	234,103	(3.6)		396,269	(2.6)	630,372	(3.0)
2010		205,687	0.2	29,393	2.3	235,080	0.4	(5)	382,475	(3.5)	617,555	(2.0)
2011		203,627	(1.0)	29,601	0.7	233,228	(0.8)		377,891	(1.2)	611,119	(1.0)
2012	(6)	194,508	(4.5)	28,633	(3.3)	223,141	(4.3)	(6)	366,157	(3.1)	589,298	(3.6)
2013		195,208	0.4	29,277	2.2	224,485	0.6		368,915	0.8	593,400	0.7
2014		202,348	3.7	29,896	2.1	232,244	3.5		370,351	0.4	602,595	1.5
2015		215,358	6.4	31,238	4.5	246,596	6.2		379,282	2.4	625,878	3.9
2016		223,634	3.8	31,860	2.0	255,494	3.6		389,609	2.7	645,103	3.1
2017		227,979	1.9	32,686	2.6	260,665	2.0		392,895	0.8	653,560	1.3
Average Annual Percent Change:												
2012 - 2017 (5 years)			3.2		2.7		3.2			1.4		2.1
2007 - 2017 (10 years)			0.5		(0.1)		0.4			(0.6)		(0.2)
2002 - 2017 (15 years)			0.6		0.5		0.5			(3.0)		(1.8)
1997 - 2017 (20 years)			1.3		1.2		1.3			(1.7)		(0.8)
1993 - 2017 (24 years)			1.4		1.5		1.4			(1.1)		(0.3)

(1) Toll increase effective 3/17/1991. Refer to Table 3-1 for the details.
(2) Toll increase effective 9/30/2000. Refer to Table 3-1 for the details.
(3) Toll increase effective 1/1/2003. Refer to Table 3-1 for the details.
(4) Toll increase effective 12/1/2008. Refer to Tables 3-1 and 3-2 for the details.
(5) Toll transactions were negatively impacted due to the phased conversion to one-way tolling. Refer to Table 3-3 for a detailed schedule.
(6) Toll increase effective 1/1/2012. Refer to Tables 3-1 and 3-2 for the details.

Source: NJTA

Table 3-5
Annual Gross Toll Revenue Trends
(Thousands of Dollars)

	New Jersey Turnpike							Garden State Parkway			Total System	
Calendar Year		Cars	Percent Change Over Prior Year	Commercial Vehicles	Percent Change Over Prior Year	Total	Percent Change Over Prior Year		All Vehicles	Percent Change Over Prior Year	All Vehicles	Percent Change Over Prior Year
1990		$124,364		$64,366		$188,730			na		na	
1991	(1)	186,046	49.6	99,592	54.7	285,638	51.3		na		na	
1992		202,825	9.0	109,710	10.2	312,535	9.4		na		na	
1993		204,098	0.6	112,422	2.5	316,520	1.3		$167,618		$484,138	
1994		205,138	0.5	116,653	3.8	321,791	1.7		166,891	(0.4)	488,682	0.9
1995		209,739	2.2	116,564	(0.1)	326,303	1.4		171,528	2.8	497,831	1.9
1996		215,223	2.6	121,118	3.9	336,341	3.1		172,940	0.8	509,281	2.3
1997		223,575	3.9	126,862	4.7	350,437	4.2		178,923	3.5	529,360	3.9
1998		230,585	3.1	130,247	2.7	360,832	3.0		183,927	2.8	544,759	2.9
1999		234,949	1.9	134,548	3.3	369,497	2.4		185,782	1.0	555,279	1.9
2000	(2)	246,107	4.7	145,928	8.5	392,035	6.1		190,916	2.8	582,951	5.0
2001		280,108	13.8	153,656	5.3	433,764	10.6		196,085	2.7	629,849	8.0
2002		288,100	2.9	150,942	(1.8)	439,042	1.2		194,851	(0.6)	633,893	0.6
2003	(3)	321,357	11.5	168,833	11.9	490,190	11.6		202,655	4.0	692,845	9.3
2004		329,734	2.6	177,122	4.9	506,856	3.4	(5)	208,729	3.0	715,585	3.3
2005		327,228	(0.8)	180,783	2.1	508,011	0.2	(5)	203,824	(2.3)	711,835	(0.5)
2006		348,039	6.4	185,360	2.5	533,399	5.0	(5)	203,880	0.0	737,279	3.6
2007		345,249	(0.8)	196,042	5.8	541,291	1.5	(5)	204,629	0.4	745,920	1.2
2008	(4)	345,394	0.0	195,288	(0.4)	540,682	(0.1)	(4)	206,055	0.7	746,737	0.1
2009		449,897	30.3	224,738	15.1	674,635	24.8		277,783	34.8	952,418	27.5
2010		446,045	(0.9)	227,848	1.4	673,893	(0.1)	(5)	278,273	0.2	952,166	(0.0)
2011		447,434	0.3	225,716	(0.9)	673,150	(0.1)		275,730	(0.9)	948,880	(0.3)
2012	(6)	667,987	49.3	324,034	43.6	992,021	47.4	(6)	401,639	45.7	1,393,660	46.9
2013		672,828	0.7	333,892	3.0	1,006,720	1.5		407,044	1.3	1,413,764	1.4
2014		695,128	3.3	342,615	2.6	1,037,743	3.1		408,005	0.2	1,445,748	2.3
2015		745,008	7.2	361,259	5.4	1,106,267	6.6		416,862	2.2	1,523,129	5.4
2016		776,337	4.2	368,220	1.9	1,144,557	3.5		426,104	2.2	1,570,661	3.1
2017		800,478	3.1	351,260	(4.6)	1,151,738	0.6		428,157	0.5	1,579,895	0.6
Average Annual Percent Change:												
2012 - 2017 (5 years)			3.7		1.6		3.0			1.3		2.5
2007 - 2017 (10 years)			8.8		6.0		7.8			7.7		7.8
2002 - 2017 (15 years)			7.1		5.8		6.6			5.4		6.3
1997 - 2017 (20 years)			6.6		5.2		6.1			4.5		5.6
1993 - 2017 (24 years)			5.9		4.9		5.5			4.0		5.1

(1) Toll increase effective 3/17/1991. Refer to Table 3-1 for the details.
(2) Toll increase effective 9/30/2000. Refer to Table 3-1 for the details.
(3) Toll increase effective 1/1/2003. Refer to Table 3-1 for the details.
(4) Toll increase effective 12/1/2008. Refer to Tables 3-1 and 3-2 for the details.
(5) Toll transactions were negatively impacted due to the phased conversion to one-way tolling. Refer to Table 3-3 for a detailed schedule.
(6) Toll increase effective 1/1/2012. Refer to Tables 3-1 and 3-2 for the details.

Source: NJTA

Since the 2012 toll increase, toll transaction growth has been positive in all years through 2017. The average annual growth rate has averaged 3.2 percent over the last five years. In 2016, total transactions reached 255.5 million, surpassing, for the first time, the previous highest number of transactions that was reached ten years earlier (prior to the Great Recession) in 2006. Total 2017 transactions reached 260.7 million, the highest level ever for the Turnpike.

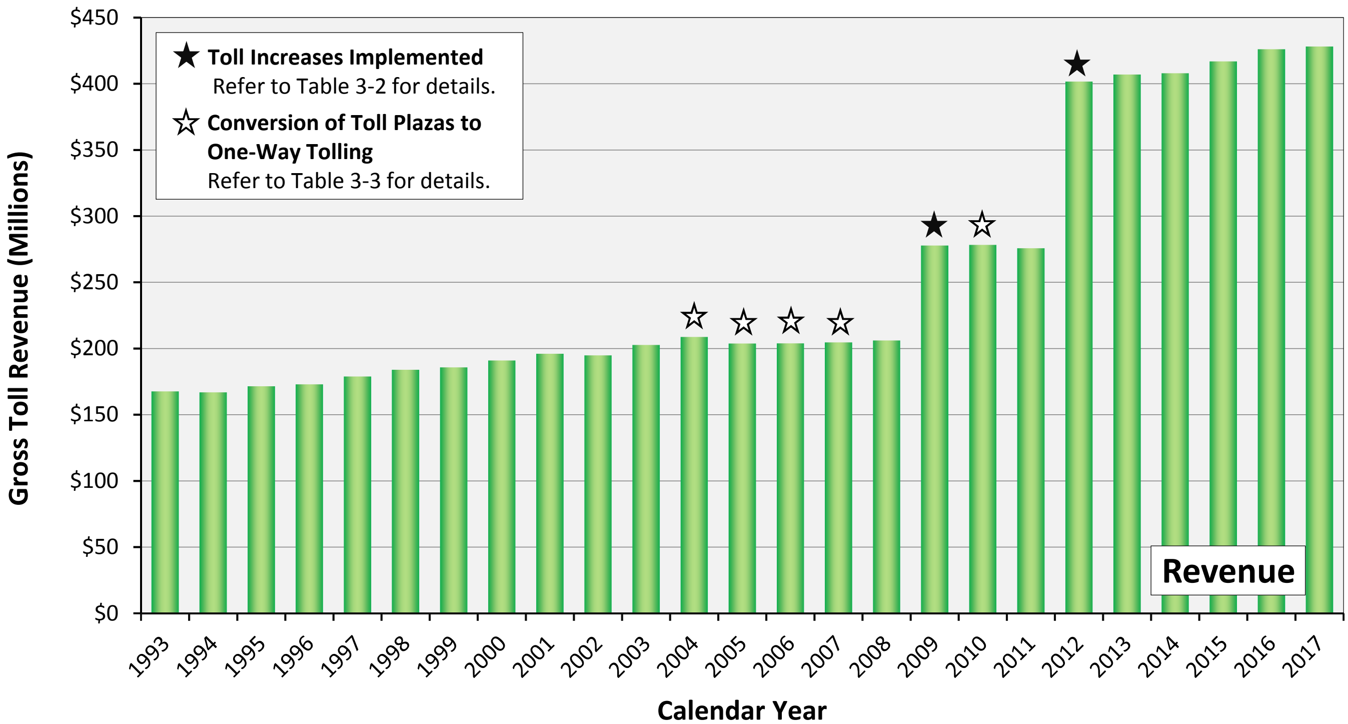
Turnpike toll revenue trends are shown in Table 3-5 and Figure 3-1. Annual Turnpike toll revenues increased every year from 1990 to 2007 due to generally increasing toll transactions and toll increases in 1991, 2000, and 2003. In 2008 toll revenue decreased by 0.1 percent due largely to the economy. Toll revenue increased by 24.8 percent in 2009 in response to the 2008 toll increase implemented on December 1, 2008. In 2010 and 2011, toll revenue decreased by 0.1 percent each year because of low or negative growth in transactions due to the economy, severe winter weather in both years, and Hurricane Irene in August 2011. Turnpike revenue increased by 47.4 percent in 2012 primarily as a result of the toll increase implemented January 1, 2012. Annual toll revenue growth since 2012 has largely mirrored similar toll transaction growth. Since 2012 revenue growth has been positive in every year through 2017, averaging 3.0 percent per year.

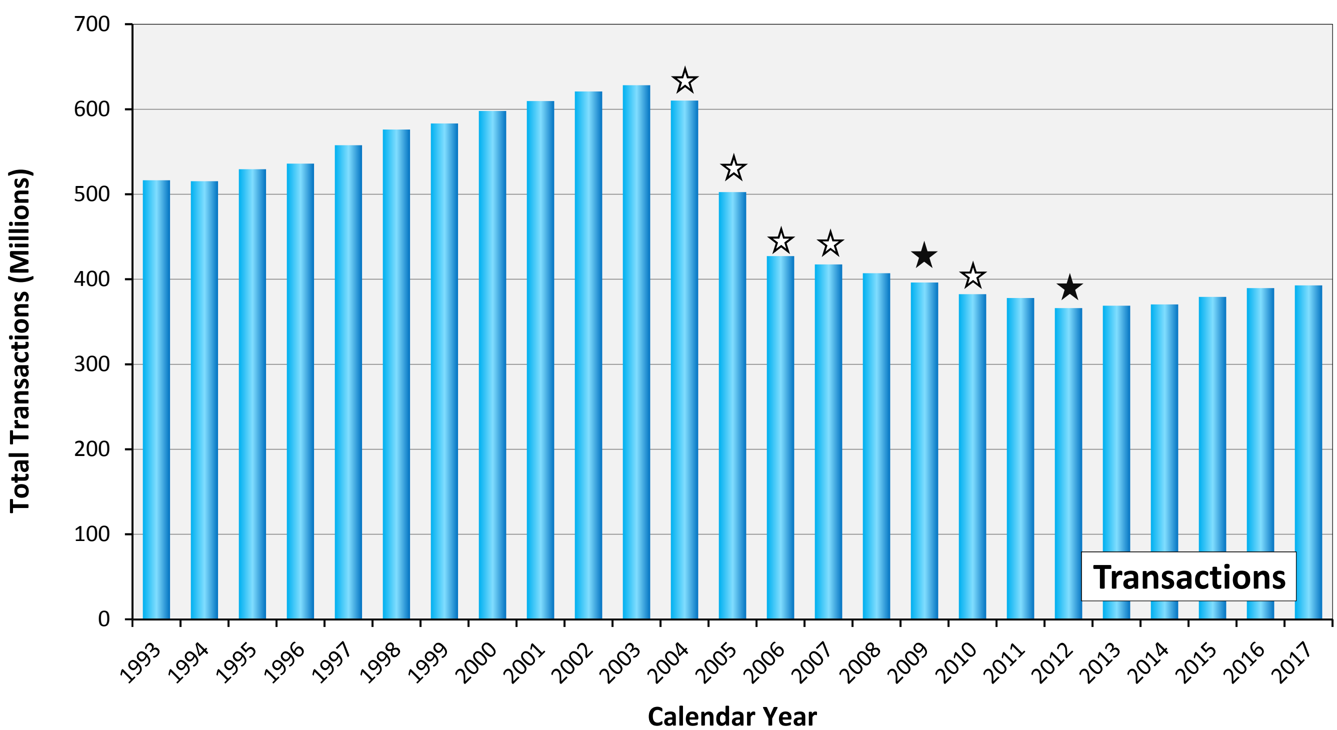
It should be noted that a retroactive revenue recognition change was implemented for the Turnpike in March 2018; it impacted nearly all of 2017 revenue data. This affected the mix of passenger car versus commercial vehicle revenue, while holding total toll revenue unchanged. This explains the divergence between positive commercial transaction growth (+2.6 percent) and negative revenue growth (-4.6 percent) between 2016 and 2017. Total revenue, however, remains a valid comparison. Toll transactions were not affected by this change.

Parkway Trends

Parkway trend data is shown in Tables 3-4 and 3-5, and **Figure 3-2**. Annual toll transactions increased each year from 1994 to 2003. Beginning in 2004, annual toll transactions decreased every year through 2012. These decreases were due to the impacts of the conversion to one-way tolling in 2004, 2005, 2006, 2007, and 2010; a 43-percent toll increase implemented on December 1, 2008; the economic recession of 2007; severe winter events in 2010 and 2011; Hurricane Irene in 2011; and the 50-percent toll increase in 2012. The largest impacts of the one-way toll conversion were felt in 2005 and 2006, when annual transactions decreased by 17.6 percent and 15.0 percent, respectively. Toll transaction growth has been positive every year since the toll increase in 2012; the average annual growth rate between 2012 and 2017 has been 1.4 percent.

Parkway revenue growth has only been negative in three years between 1994 and 2017 (-0.6 percent in 2002, -2.3 percent in 2005, and -0.9 percent in 2011). These were the result of either one-way toll conversion or economic slowdowns. The positive impacts of the December 2008 and January 2012 toll increases are clear; toll revenue increased by 34.8 percent in 2009 and by 45.7 percent in 2012. Annual revenue growth has been positive in every year since the 2012 toll increase, averaging 1.3 percent growth through 2017.





PARKWAY: ANNUAL TOLL TRANSACTION AND TOLL REVENUE TRENDS

FIGURE 3-2

Total System Trends

The Total System trends reflect the activities on the Turnpike and the Parkway. Total System trend data is shown in Tables 3-4 and 3-5, and **Figure 3-3**. Total annual transactions increased each year from 1993 through 2003 and decreased each year from 2004 through 2012 largely due to the impacts on the Parkway associated with conversion to one-way tolling, the 2008 and 2012 toll increases implemented on the Turnpike and the Parkway, the poor economic conditions that began in 2007, and severe weather events in 2010 and 2011. Total annual transaction growth has been positive every year since 2012. Over the last five years (2012 through 2017), the rate of annual growth has averaged 2.1 percent for the Total System.

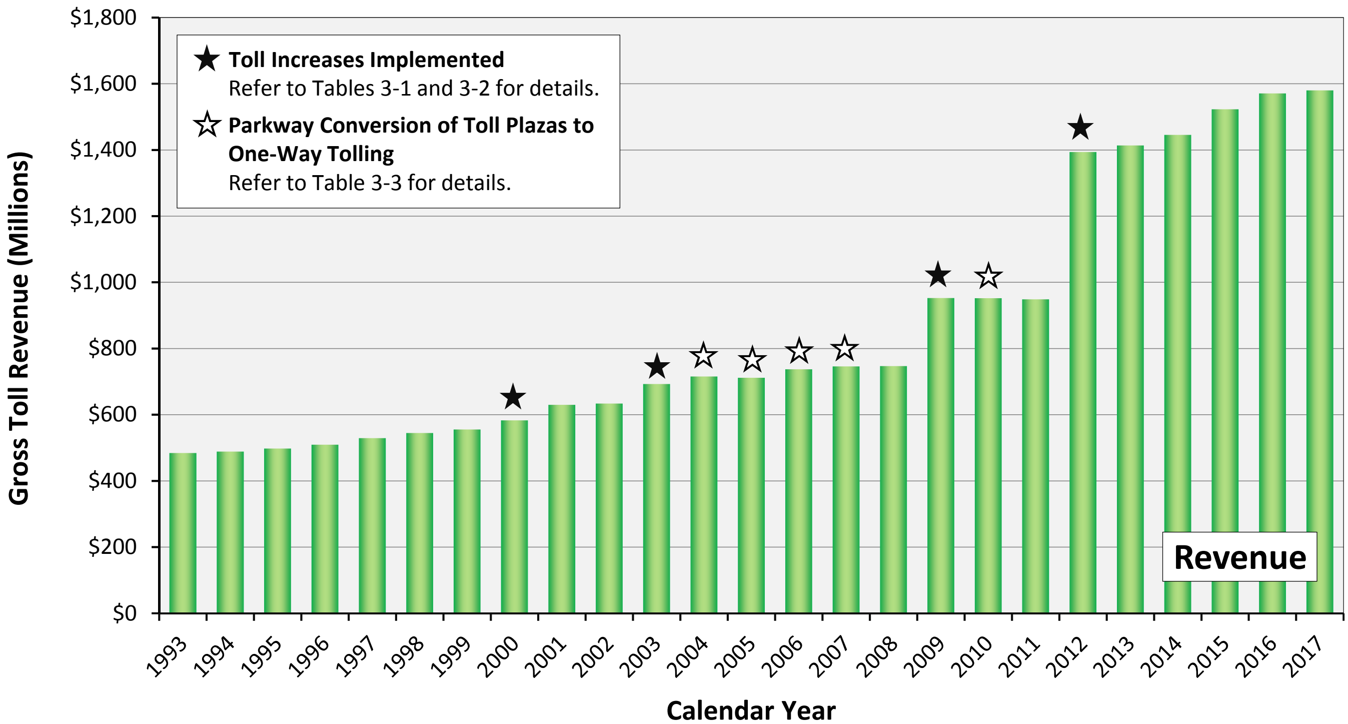
Total System annual toll revenue increased every year from 1994 through 2009, except for 2005, when the annual toll revenue decreased by 0.5 percent. Annual toll revenue increased by 27.5 percent in 2009, primarily due to the systemwide toll increase implemented on December 1, 2008, when Turnpike toll rates increased by 40 percent and Parkway toll rates increased by 43 percent. Annual toll revenue decreased in 2010 by less than one tenth of a percent and decreased again in 2011 by 0.3 percent. These decreases were associated with the slow economy, the impact of the conversion to one-way tolling at the Pascack Valley mainline toll plaza on the Parkway, severe winter weather in 2011, and Hurricane Irene in 2011. Toll revenue increased by 46.9 percent in 2012 primarily due to the toll increases implemented on January 1, 2012. Since 2012, toll revenue has increased every year, averaging 2.5 percent through 2017.

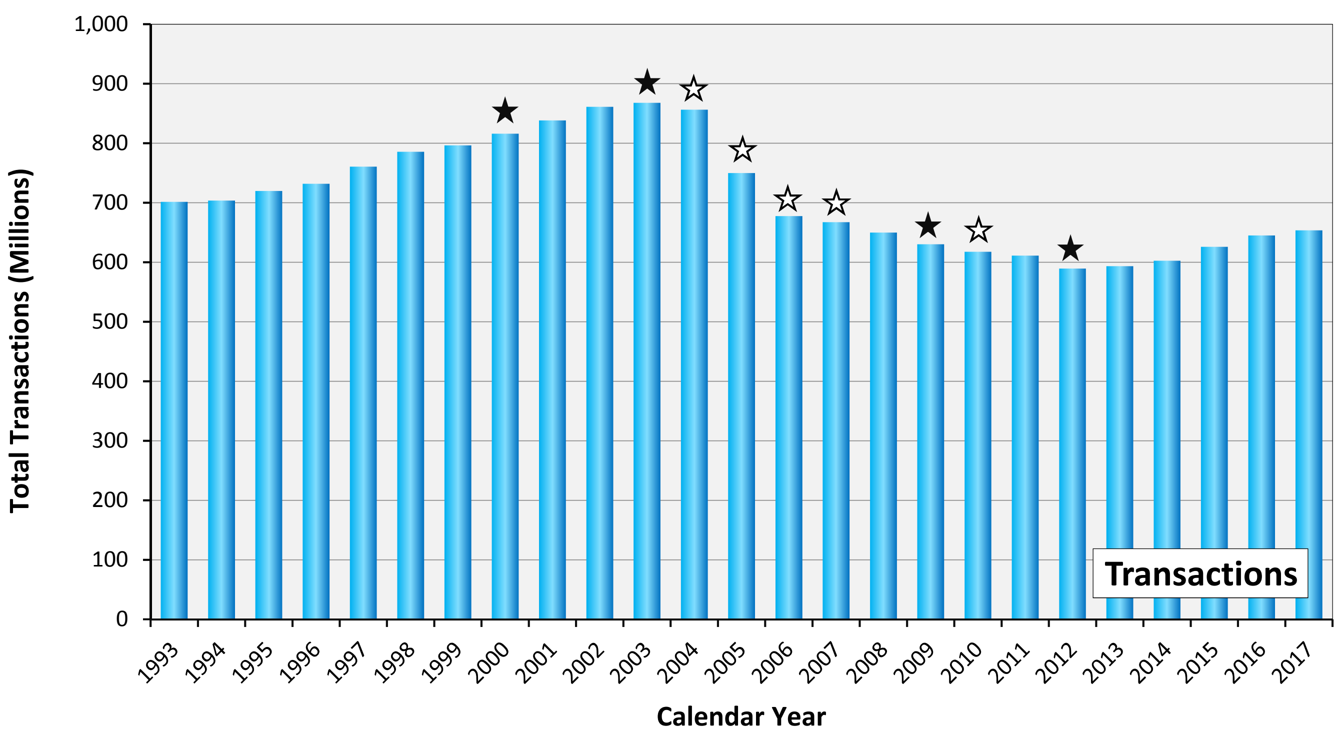
Monthly Toll Transaction and Toll Revenue Trends

Monthly toll transaction and toll revenue trends have been summarized from January 2013 through July 2018, by passenger car and commercial vehicles for both the Turnpike and the Parkway. The monthly trend data was used to refine the near-term toll transaction estimates developed for the Turnpike and Parkway.

Turnpike Trends

Monthly transaction and toll revenue trends for the New Jersey Turnpike from January 2013 through July 2018 are shown in **Tables 3-6 and 3-7**, respectively. Various events had noticeable impacts on Turnpike transactions and toll revenue in recent years. Significant winter weather events in February 2013, the first quarter of 2014, and in March 2017 reduced transactions and toll revenue below their normal levels. Lane closures on the Pulaski Skyway positively impacted both passenger-car transactions and toll revenues on the Turnpike beginning in April 2014. The closure of the Delaware River Turnpike Bridge (DRTB), from January 20, 2017 through March 9, 2017, had negative impacts on both transactions and toll revenue.





TOTAL SYSTEM: ANNUAL TOLL TRANSACTION AND TOLL REVENUE TRENDS

FIGURE 3-3

Table 3-6
Historical Toll Transaction Trends By Month
New Jersey Turnpike
(Thousands of Vehicles)

Passenger Car Transactions

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	14,855	(4.4)	14,202 (2)	4.9	14,894 (2,7)	6.4	15,850 (7)	6.8	16,928 (7,8)	0.2	16,960 (7)
February	13,414 (2)	(4.3)	12,832 (2)	12.0	14,371 (2,7)	12.2	16,127 (1,7)	(3.9)	15,493 (7,8)	4.9	16,252 (7)
March	16,022	0.6	16,119 (6)	5.4	16,990 (2,7)	8.3	18,402 (7)	(2.7)	17,908 (2,7,8)	1.9	18,244 (7)
April	16,210	4.9	17,008 (7)	6.5	18,108 (7)	1.8	18,426 (7)	3.9	19,148 (7)	0.7	19,287 (7)
May	17,109	6.0	18,136 (7)	5.2	19,072 (7)	1.6	19,378 (7)	3.3	20,023 (7)	1.9	20,395 (7)
June	16,874	7.0	18,053 (7)	4.4	18,856 (7)	4.3	19,662 (7)	3.0	20,249 (7)	0.9	20,434 (7)
July	17,409	4.8	18,251 (7)	7.9	19,696 (7)	1.2	19,925 (7)	2.2	20,366 (7)	0.6	20,481 (7)
August	18,151	2.5	18,608 (7)	6.1	19,748 (7)	2.6	20,270 (7)	2.9	20,859 (7)		
September	16,369	5.0	17,183 (7)	5.6	18,144 (7)	3.9	18,853 (7)	2.3	19,288 (7)		
October	17,172	4.5	17,950 (7)	5.9	19,003 (7)	2.1	19,411 (7)	3.2	20,029 (7)		
November	15,887	5.3	16,736 (7)	7.9	18,061 (7)	3.2	18,634 (7)	2.3	19,067 (7)		
December	15,736	9.7	17,270 (7)	6.6	18,415 (7)	1.5	18,696 (7)	(0.4)	18,621 (7)		
TOTAL	195,208	3.7	202,348	6.4	215,358	3.8	223,634	1.9	227,979		132,053
Subtotal Jan. - July	111,893	2.4	114,601	6.4	121,987	4.7	127,770	1.8	130,115	1.5	132,053

Commercial Vehicle Transactions (5)

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	2,415	(4.0)	2,318 (2)	(0.9)	2,296 (2)	0.8	2,315	8.7	2,517 (8)	6.0	2,668
February	2,148 (2)	(4.2)	2,057 (2)	7.7	2,216 (2)	8.6	2,406 (1)	(5.8)	2,266 (8)	9.7	2,485
March	2,371	3.7	2,458 (6)	5.5	2,593 (2)	5.6	2,737	(1.6)	2,694 (2,8)	1.7	2,740
April	2,492	1.8	2,536	4.2	2,642	(2.2)	2,584	0.9	2,608	7.6	2,805
May	2,567	0.7	2,586	2.1	2,641	1.3	2,675	8.5	2,903	3.9	3,015
June	2,379	8.4	2,578	8.3	2,793	0.6	2,809	3.7	2,912	1.4	2,954
July	2,554	3.5	2,644	5.5	2,789	(4.6)	2,660	1.5	2,701	8.8	2,940
August	2,593	(2.7)	2,522	5.2	2,654	9.0	2,893	1.3	2,930		
September	2,430	6.0	2,577	4.1	2,682	0.9	2,706	0.3	2,715		
October	2,688	1.9	2,739	2.0	2,793	(1.9)	2,741	7.9	2,958		
November	2,308	1.9	2,351	8.0	2,538	4.7	2,658	5.3	2,799		
December	2,333	8.4	2,530	2.8	2,601	2.9	2,676	0.3	2,683		
TOTAL	29,278	2.1	29,896	4.5	31,238	2.0	31,860	2.6	32,686		19,607
Subtotal Jan. - July	16,926	1.5	17,177	4.6	17,970	1.2	18,186	2.3	18,601	5.4	19,607

Total Transactions

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	17,270	(4.3)	16,520 (2)	4.1	17,190 (2,7)	5.7	18,165 (7)	7.0	19,445 (7,8)	0.9	19,628 (7)
February	15,562 (2)	(4.3)	14,889 (2)	11.4	16,587 (2,7)	11.7	18,533 (1,7)	(4.2)	17,759 (7,8)	5.5	18,737 (7)
March	18,393	1.0	18,577 (6)	5.4	19,583 (2,7)	7.9	21,139 (7)	(2.5)	20,602 (2,7,8)	1.9	20,984 (7)
April	18,702	4.5	19,544 (7)	6.2	20,750 (7)	1.3	21,010 (7)	3.6	21,756 (7)	1.5	22,092 (7)
May	19,676	5.3	20,722 (7)	4.8	21,713 (7)	1.6	22,053 (7)	4.0	22,926 (7)	2.1	23,410 (7)
June	19,253	7.2	20,631 (7)	4.9	21,649 (7)	3.8	22,471 (7)	3.1	23,161 (7)	1.0	23,388 (7)
July	19,963	4.7	20,895 (7)	7.6	22,485 (7)	0.4	22,585 (7)	2.1	23,067 (7)	1.5	23,421 (7)
August	20,744	1.9	21,130 (7)	6.0	22,402 (7)	3.4	23,163 (7)	2.7	23,789 (7)		
September	18,799	5.1	19,760 (7)	5.4	20,826 (7)	3.5	21,559 (7)	2.1	22,003 (7)		
October	19,860	4.2	20,689 (7)	5.4	21,796 (7)	1.6	22,152 (7)	3.8	22,987 (7)		
November	18,195	4.9	19,087 (7)	7.9	20,599 (7)	3.4	21,292 (7)	2.7	21,866 (7)		
December	18,069		19,800 (7)	6.1	21,016 (7)	1.7	21,372 (7)	(0.3)	21,304 (7)		
TOTAL	224,486	3.5	232,244	6.2	246,596	3.6	255,494	2.0	260,665		151,660
Subtotal Jan. - July	128,819	2.3	131,778	6.2	139,957	4.3	145,956	1.9	148,716	2.0	151,660

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) A 53% toll increase was implemented on January 1, 2012.
(4) Superstorm Sandy, October 29-30, 2012
(5) Consists of Classes 2 through 6, and B2 and B3.
(6) Abnormally cold weather.
(7) Construction on the Pulaski Skyway positively impacted passenger car traffic on the Turnpike.
(8) Delaware River Turnpike Bridge was closed to all traffic from January 20, 2017 through March 9, 2017.
Source: NJTA

Table 3-7
Historical Gross Toll Revenue Trends By Month
New Jersey Turnpike
(Thousands of Dollars)

Passenger Car Toll Revenue

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	$49,246	(4.9)	$46,857 (2)	5.9	$49,627 (2,7)	6.9	$53,075 (7)	9.0	$57,833 (7,8)	(1.2)	$57,145 (7)
February	44,132 (2)	(4.5)	42,128 (2)	11.6	46,995 (2,7)	14.1	53,615 (1,7)	(2.7)	52,166 (7,8)	5.9	55,233 (7)
March	54,997	(1.7)	54,042 (6)	4.7	56,593 (2,7)	10.5	62,543 (7)	(3.3)	60,489 (2,7,8)	4.3	63,077 (7)
April	55,132	6.1	58,468 (7)	7.1	62,592 (7)	2.1	63,923 (7)	7.1	68,434 (7)	(1.4)	67,506 (7)
May	59,351	5.3	62,514 (7)	7.4	67,110 (7)	1.4	68,030 (7)	3.5	70,429 (7)	0.9	71,045 (7)
June	59,327	5.2	62,389 (7)	4.7	65,346 (7)	5.1	68,664 (7)	4.3	71,606 (7)	0.6	72,069 (7)
July	62,242	3.7	64,569 (7)	10.0	71,042 (7)	3.1	73,258 (7)	2.6	75,184 (7)	(0.5)	74,787 (7)
August	65,468	3.7	67,897 (7)	6.7	72,439 (7)	1.2	73,343 (7)	4.0	76,268 (7)		
September	55,977	4.0	58,214 (7)	7.0	62,285 (7)	4.0	64,768 (7)	4.8	67,851 (7)		
October	57,502	5.0	60,366 (7)	7.0	64,572 (7)	3.0	66,531 (7)	3.6	68,897 (7)		
November	54,808	6.4	58,294 (7)	7.7	62,788 (7)	2.4	64,293 (7)	1.7	65,398 (7)		
December	54,646	8.7	59,390 (7)	7.1	63,619 (7)	1.1	64,294 (7)	2.5	65,923 (7)		
TOTAL	$672,828	3.3	$695,128	7.2	$745,008	4.2	$776,337	3.1	$800,478		$460,862
Subtotal Jan. - July	$384,427	1.7	$390,967	7.2	$419,305	5.7	$443,108	2.9	$456,141	1.0	$460,862

Commercial Vehicle Toll Revenue (5)

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	$26,662	(1.7)	$26,216 (2)	1.2	$26,519 (2)	0.6	$26,687	3.0	$27,490 (8)	5.8	$29,077
February	24,384 (2)	(4.7)	23,232 (2)	10.3	25,619 (2)	8.1	27,691 (1)	(11.4)	24,525 (8)	9.6	26,876
March	26,989	3.6	27,952 (6)	5.5	29,502 (2)	7.5	31,726	(8.4)	29,068 (2,8)	2.6	29,831
April	29,159	(0.5)	29,012	6.2	30,799	(3.0)	29,862	(4.8)	28,438	7.0	30,426
May	29,243	0.4	29,352	6.1	31,136	1.2	31,502	0.6	31,679	3.1	32,669
June	26,996	7.8	29,112	9.9	31,994	1.3	32,415	(3.6)	31,234	1.6	31,725
July	28,641	2.7	29,417	8.9	32,035	(3.6)	30,870	(6.2)	28,964	9.5	31,720
August	29,367	(3.9)	28,208	8.7	30,650	7.6	32,980	(4.8)	31,408		
September	28,313	6.2	30,068	2.4	30,789	0.7	30,990	(5.4)	29,321		
October	30,403	8.1	32,867	(1.9)	32,253	(1.3)	31,821	(3.5)	30,698		
November	27,164	3.3	28,062	5.5	29,617	4.6	30,981	(5.2)	29,361		
December	26,571	9.6	29,117	4.2	30,346	1.2	30,695	(5.3)	29,074		
TOTAL	$333,892	2.6	$342,615	5.4	$361,259	1.9	$368,220	(4.6)	$351,260		$212,324
Subtotal Jan. - July	$192,074	1.2	$194,293	6.9	$207,604	1.5	$210,753	(4.4)	$201,398	5.4	$212,324

Total Toll Revenue

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	$75,908	(3.7)	$73,073 (2)	4.2	$76,146 (2,7)	4.7	$79,762 (7)	7.0	$85,323 (7,8)	1.1	$86,222 (7)
February	68,516 (2)	(4.6)	65,360 (2)	11.1	72,614 (2,7)	12.0	81,306 (1,7)	(5.7)	76,691 (7,8)	7.1	82,109 (7)
March	81,986	0.0	81,994 (6)	5.0	86,095 (2,7)	9.5	94,269 (7)	(5.0)	89,557 (2,7,8)	3.7	92,908 (7)
April	84,291	3.8	87,480 (7)	6.8	93,391 (7)	0.4	93,785 (7)	3.3	96,872 (7)	1.1	97,932 (7)
May	88,594	3.7	91,866 (7)	6.9	98,246 (7)	1.3	99,532 (7)	2.6	102,108 (7)	1.6	103,714 (7)
June	86,323	6.0	91,501 (7)	6.4	97,340 (7)	3.8	101,079 (7)	1.7	102,840 (7)	0.9	103,794 (7)
July	90,883	3.4	93,986 (7)	9.7	103,077 (7)	1.0	104,128 (7)	0.0	104,148 (7)	2.3	106,507 (7)
August	94,835	1.3	96,105 (7)	7.3	103,089 (7)	3.1	106,323 (7)	1.3	107,676 (7)		
September	84,290	4.7	88,282 (7)	5.4	93,074 (7)	2.9	95,758 (7)	1.5	97,172 (7)		
October	87,905	6.1	93,233 (7)	3.9	96,825 (7)	1.6	98,352 (7)	1.3	99,595 (7)		
November	81,972	5.3	86,356 (7)	7.0	92,405 (7)	3.1	95,274 (7)	(0.5)	94,759 (7)		
December	81,217		88,507 (7)	6.2	93,965 (7)	1.1	94,989 (7)	0.0	94,997 (7)		
TOTAL	$1,006,720	3.1	$1,037,743	6.6	$1,106,267	3.5	$1,144,557	0.6	$1,151,738		$673,186
Subtotal Jan. - July	$576,501	1.5	$585,260	7.1	$626,909	4.3	$653,861	0.6	$657,539	2.4	$673,186

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) A 53% toll increase was implemented on January 1, 2012.
(4) Superstorm Sandy, October 29-30, 2012
(5) Consists of Classes 2 through 6, and B2 and B3.
(6) Abnormally cold weather.
(7) Construction on the Pulaski Skyway positively impacted passenger car revenue on the Turnpike.
(8) Delaware River Turnpike Bridge was closed to all traffic from January 20, 2017 through March 9, 2017.
Source: NJTA

The following summarizes the major events that took place between calendar years, from January 2013 through July 2018, that impacted transaction and toll revenue trends on the New Jersey Turnpike.

- **2013-2014**: Growth in transactions and toll revenue increased in 2014 compared to the prior year. Passenger-car transactions grew 3.7 percent with a corresponding increase of 3.3 percent in toll revenue. This growth was fueled in part by positive impacts associated with construction on the Pulaski Skyway that diverted some passenger-car traffic onto the New Jersey Turnpike. Construction work started in April 2014 and continued through the remainder of the year. Commercial-vehicle transactions grew 2.1 percent with a corresponding toll revenue increase of 2.6 percent. In total, transactions and toll revenue increased by 3.5 percent and 3.1 percent respectively on the Turnpike.

- **2014-2015**: Strong growth in transactions and toll revenue occurred in 2015 compared to 2014. This growth was due to decreasing fuel prices, an improving economy, and continuing positive impacts on passenger-car transactions associated with traffic diverted from the Pulaski Skyway due to ongoing construction. Passenger-car transactions increased 6.4 percent with a corresponding toll revenue increase of 7.2 percent. Commercial-vehicle transactions increased 4.5 percent and toll revenue increased 5.4 percent. Total transactions grew 6.2 percent and total toll revenue grew 6.6 percent compared to 2014.

- **2015-2016**: Passenger-car transactions and toll revenue increased 3.8 percent and 4.2 percent respectively, and commercial-vehicle transactions and toll revenue increased 2.0 and 1.9 percent respectively. In total, transactions grew by 3.6 percent and toll revenue grew by 3.5 percent compared to 2015. The growth reflected low fuel prices and an extra day for Leap Year. Construction work continued on the Pulaski Skyway.

- **2016-2017**: Passenger-car transactions and toll revenue increased 1.9 percent and 3.1 percent respectively. Commercial-vehicle transactions increased 2.6 percent while toll revenue decreased 4.6 percent. As discussed above, a retroactive revenue recognition change was implemented in March 2018; it impacted nearly all of 2017 revenue data. This affected the mix of passenger car versus commercial vehicle revenue, while holding total toll revenue unchanged. This explains the divergence between positive commercial transaction growth and negative revenue growth between 2016 and 2017. Total revenue, however, remains a valid comparison. Toll transactions were not affected by this change. Overall, transactions increased by 2.0 percent and toll revenue increased by 0.6 percent compared to 2016. The first three months of 2017 were negatively impacted by the temporary closure of the Delaware River Turnpike Bridge (DRTB) which connects the New Jersey Turnpike to the Pennsylvania Turnpike. The closure extended from Friday, January 20, 2017 through Thursday, March 9, 2017. The closure was due to a fracture in the bridge superstructure beneath the westbound lanes, which has been fully repaired.

- **2017-2018**: Year to date, from January through July, passenger-car transactions increased by 1.5 percent and toll revenue grew 1.0 percent compared to the same period in 2017. Similarly, commercial-vehicle transactions and toll revenue both increased by 5.4 percent. In total, transactions grew 2.0 percent and toll revenue increased by 2.4 percent in the first seven months of 2018 compared to the same period in 2017.

Parkway Trends

Monthly transaction and toll revenue trends for the Garden State Parkway from January 2013 to July 2018 are shown in **Tables 3-8 and 3-9**, respectively. It should be noted that given the commercial-vehicle restrictions on the Parkway and the resulting low commercial-vehicle volumes (less than 1.5 percent of total transactions), very small changes in commercial-vehicle transactions have relatively big percentage impacts. This will be evident in the commercial-vehicle transaction and revenue growth rates shown in Tables 3-8 and 3-9 for the Parkway.

Many of the events that impacted Turnpike transactions and toll revenue also impacted Parkway transactions and toll revenue. In addition, several casino closures in the Atlantic City area negatively impacted transactions and toll revenue on the Parkway beginning in 2014. The following summarizes the major events, from January 2013 through July 2018, that impacted transaction and toll revenue trends on the Garden State Parkway.

- **2013-2014**: Transactions and toll revenue increased in 2014 compared to the prior year. Passenger-car transactions grew 0.4 percent with a corresponding increase of 0.6 percent in toll revenue. Commercial-vehicle transactions decreased 0.8 percent with a corresponding toll revenue decrease of 9.1 percent. In total, Parkway transactions and toll revenue increased by 0.4 percent and 0.2 percent respectively. The low or negative growth in transactions and toll revenue primarily reflect the impacts associated with the closure of three casinos in Atlantic City in January, August, and September, combined with negative impacts due to severe winter weather in the first quarter of 2014. In addition, much of the decrease in commercial-vehicle toll revenue is attributable to an NJTA accounting change initiated in 2013.

- **2014-2015**: Moderate growth in transactions and toll revenue occurred in 2015 compared to 2014. This growth was due in part to decreasing fuel prices and an improving economy. Passenger-car transactions increased 2.4 percent with a corresponding toll revenue increase of 2.1 percent. Commercial-vehicle transactions increased 3.5 percent and toll revenue increased 4.8 percent. Total transactions grew by 2.4 percent and total toll revenue grew by 2.2 percent compared to 2014.

- **2015-2016**: Passenger-car transactions and toll revenue increased 2.8 percent and 2.4 percent respectively, and commercial-vehicle transactions and toll revenue decreased 3.2 percent and 2.6 percent respectively. Total transactions grew by 2.7 percent and toll revenue grew by 2.2 percent compared to 2015. The overall growth reflected an extra day for Leap Year in 2016.

- **2016-2017**: Passenger-car transactions and toll revenue increased 0.8 percent and 0.4 percent, respectively, compared to 2016. Commercial-vehicle transactions and toll revenue increased 1.7 percent and 1.4 percent, respectively. In total, transactions grew 0.8 percent and toll revenue increased by 0.5 percent in 2017 compared to 2016.

- **2017-2018**: Year to date (January through July), passenger-car transactions and toll revenue increased 0.5 percent and 0.8 percent, respectively, compared to the same period in 2017. Commercial-vehicle transactions and toll revenue increased 4.8 percent and 3.6 percent, respectively. In total, transactions grew 0.6 percent and toll revenue increased by 0.9 percent in the first seven months of 2018 compared to the same period in 2017.

Table 3-8
Historical Toll Transaction Trends By Month
Garden State Parkway
(Thousands of Vehicles)

Passenger Car Transactions

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	27,372	(6.2)	25,676 (2,7)	0.6	25,831 (2)	4.9	27,091	5.0	28,442	(0.3)	28,370
February	24,733 (2)	(4.7)	23,563 (2)	4.5	24,629 (2)	12.0	27,586 (1)	(2.2)	26,977	1.7	27,443
March	29,064	(0.1)	29,022 (6)	(0.8)	28,779 (2)	8.5	31,218	(3.0)	30,292 (2)	(1.1)	29,971
April	29,719	1.2	30,073	1.5	30,531	1.5	31,004	1.9	31,604	0.2	31,659
May	31,979	2.1	32,642	1.6	33,180	0.4	33,299	1.5	33,795	1.6	34,338
June	32,355	3.0	33,336	0.1	33,376	4.5	34,886	1.0	35,232	0.8	35,525
July	34,601	1.8	35,228	3.4	36,442	0.5	36,610	0.4	36,746	0.6	36,967
August	35,439	1.2	35,878 (7)	2.7	36,838	0.8	37,123	0.4	37,266		
September	30,764	1.1	31,100 (7)	4.1	32,374	0.8	32,644	1.1	33,002		
October	31,126	0.1	31,155	1.9	31,751	1.0	32,068	2.7	32,945		
November	28,710	(1.3)	28,339	4.9	29,722	2.3	30,409	1.9	30,981		
December	28,002	4.7	29,326	4.5	30,640	0.0	30,648	(0.5)	30,504		
TOTAL	363,864	0.4	365,338	2.4	374,093	2.8	384,586	0.8	387,786		224,273
Subtotal Jan. - July	209,823	(0.1)	209,540	(15.9)	176,326	25.7	221,694	0.6	223,088	0.5	224,273

Commercial Vehicle Transactions (5)

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	364	(4.9)	346 (2,7)	(6.6)	323 (2)	6.2	343	5.2	361	6.9	386
February	329 (2)	(1.2)	325 (2)	(0.9)	322 (2)	7.8	347 (1)	(5.5)	328	6.4	349
March	367	(1.4)	362 (6)	5.2	381 (2)	9.7	418	(7.2)	388 (2)	2.3	397
April	432	(4.2)	414	3.6	429	5.1	451	(11.1)	401	8.2	434
May	502	(4.4)	480	0.4	482	1.0	487	1.2	493	4.5	515
June	470	2.3	481	2.1	491	(2.6)	478	2.5	490	2.4	502
July	503	0.8	507	1.4	514	(10.7)	459	4.8	481	4.2	501
August	488	(2.3)	477 (7)	2.5	489	(4.9)	465	5.2	489		
September	428	3.3	442 (7)	2.9	455	(7.7)	420	5.0	441		
October	449	1.6	456	3.9	474	(11.6)	419	7.9	452		
November	378	(3.2)	366	21.0	443	(14.2)	380	6.1	403		
December	344	3.8	357	8.1	386	(7.8)	356	7.3	382		
TOTAL	5,054	(0.8)	5,013	3.5	5,189	(3.2)	5,023	1.7	5,109		3,084
Subtotal Jan. - July	2,967	(1.8)	2,915	0.9	2,942	1.4	2,983	(1.4)	2,942	4.8	3,084

Total Transactions

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	27,736	(6.2)	26,022 (2,7)	0.5	26,154 (2)	4.9	27,434	5.0	28,803	(0.2)	28,756
February	25,062 (2)	(4.7)	23,888 (2)	4.4	24,951 (2)	12.0	27,933 (1)	(2.2)	27,305	1.8	27,792
March	29,431	(0.2)	29,384 (6)	(0.8)	29,160 (2)	8.5	31,636	(3.0)	30,680 (2)	(1.0)	30,368
April	30,151	1.1	30,487	1.6	30,960	1.6	31,455	1.7	32,005	0.3	32,093
May	32,481	2.0	33,122	1.6	33,662	0.4	33,786	1.5	34,288	1.6	34,853
June	32,825	3.0	33,817	0.1	33,867	4.4	35,364	1.0	35,722	0.9	36,027
July	35,104	1.8	35,735	3.4	36,956	0.3	37,069	0.4	37,227	0.6	37,468
August	35,927	1.2	36,355 (7)	2.7	37,327	0.7	37,588	0.4	37,755		
September	31,192	1.1	31,542 (7)	4.1	32,829	0.7	33,064	1.1	33,443		
October	31,575	0.1	31,611	1.9	32,225	0.8	32,487	2.8	33,397		
November	29,088	(1.3)	28,705	5.1	30,165	2.1	30,789	1.9	31,384		
December	28,346	4.7	29,683	4.5	31,026	(0.1)	31,004	(0.4)	30,886		
TOTAL	368,918	0.4	370,351	2.4	379,282	2.7	389,609	0.8	392,895		227,357
Subtotal Jan. - July	212,790	(17.0)	176,720	22.1	215,710	4.2	224,677	0.6	226,030	0.6	227,357

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) A 50% toll increase was implemented on January 1, 2012.
(4) Superstorm Sandy, October 29-30, 2012.
(5) Consists of Classes 2 through 6, and B2 and B3. Heavy trucks, registered as 10,000 lbs or more (6 tires or 3-or-more-axles), are prohibited north of Interchange 105.
(6) Abnormally cold weather.
(7) Casino closures: Atlantic Club in January, Showboat in August, and Revel and Trump Plaza in September.

Source: NJTA

Table 3-9
Historical Gross Toll Revenue Trends By Month
Garden State Parkway
(Thousands of Dollars)

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
Passenger Car Toll Revenue											
January	$28,919	(5.4)	$27,357 (2,8)	0.1	$27,396 (2)	4.4	$28,613	5.2	$30,095	(0.5)	$29,945
February	26,127 (2)	(4.0)	25,078 (2)	3.8	26,034 (2)	12.7	29,351 (1)	(3.2)	28,415	2.3	29,062
March	30,856	0.1	30,876 (6)	(1.0)	30,573 (2)	8.5	33,178	(3.5)	32,014 (2)	(0.7)	31,804
April	31,496	2.0	32,137	1.5	32,625	0.7	32,860	2.1	33,560	0.3	33,644
May	34,132	2.4	34,961	2.1	35,690	(0.5)	35,518	1.3	35,987	1.4	36,494
June	34,762	3.3	35,909	0.3	36,024	3.7	37,359	0.9	37,713	1.0	38,075
July	37,650	1.6	38,267	3.4	39,568	0.3	39,689	0.1	39,711	1.4	40,281
August	38,748	1.0	39,125 (8)	2.8	40,207	0.5	40,394	(0.1)	40,338		
September	33,360	1.3	33,788 (8)	3.1	34,828	0.1	34,877	1.2	35,279		
October	33,454	0.1	33,476	1.1	33,841	1.0	34,174	2.4	34,990		
November	30,872	(1.3)	30,469	3.9	31,652	1.8	32,208	(0.5)	32,059		
December	29,921	4.7	31,335	3.6	32,472	(0.4)	32,346	(0.3)	32,235		
TOTAL	$390,297	0.6	$392,778	2.1	$400,910	2.4	$410,567	0.4	$412,396		$239,305
Subtotal Jan. - July	$223,942	0.3	$224,585	1.5	$227,910	3.8	$236,568	0.4	$237,495	0.8	$239,305
Commercial Vehicle Toll Revenue (5)											
January	$1,211	(20.6)	$962 (2,7,8)	2.3	$984 (2)	2.0	$1,004	9.4	$1,098	5.7	$1,161
February	1,103 (2)	(17.4)	911 (2,7)	3.7	945 (2)	8.1	1,022 (1)	(5.3)	968	5.8	1,024
March	1,249	(15.3)	1,058 (2,6,7)	6.8	1,130 (2)	9.9	1,242	(5.3)	1,176 (2)	0.8	1,185
April	1,477	(19.5)	1,189 (7)	9.3	1,299	3.6	1,346	(8.2)	1,235	6.6	1,317
May	1,732	(15.5)	1,463 (7)	1.2	1,480	(0.7)	1,470	3.3	1,519	2.0	1,550
June	1,619	(9.5)	1,465 (7)	3.8	1,520	(0.3)	1,515	1.1	1,532	0.6	1,541
July	1,749	(8.2)	1,605 (7)	2.4	1,643	(9.4)	1,489	1.6	1,513	4.8	1,585
August	1,707	(10.1)	1,534 (7,8)	3.1	1,582	(1.9)	1,552	0.9	1,566		
September	1,485	(4.5)	1,418 (7,8)	1.2	1,435	(8.2)	1,318	5.4	1,389		
October	1,378	4.4	1,438 (7)	2.4	1,472	(10.0)	1,325	3.0	1,365		
November	1,094 (7)	1.0	1,105	18.3	1,307	(10.6)	1,169	3.1	1,205		
December	943 (7)	14.4	1,079	7.0	1,155	(6.1)	1,085	10.1	1,195		
TOTAL	$16,747	(9.1)	$15,227	4.8	$15,952	(2.6)	$15,537	1.4	$15,761		$9,363
Subtotal Jan. - July	$10,140	(14.7)	$8,653	4.0	$9,001	1.0	$9,088	(0.5)	$9,041	3.6	$9,363
Total Toll Revenue											
January	$30,130	(6.0)	$28,319 (2,8)	0.2	$28,380 (2)	4.4	$29,617	5.3	$31,193	(0.3)	$31,106
February	27,230 (2)	(4.6)	25,989 (2)	3.8	26,979 (2)	12.6	30,373 (1)	(3.3)	29,383	2.4	30,086
March	32,105	(0.5)	31,934 (2,6)	(0.7)	31,703 (2)	8.6	34,420	(3.6)	33,190 (2)	(0.6)	32,989
April	32,973	1.1	33,326	1.8	33,924	0.8	34,206	1.7	34,795	0.5	34,961
May	35,864	1.6	36,424	2.0	37,170	(0.5)	36,988	1.4	37,506	1.4	38,044
June	36,381	2.7	37,374	0.5	37,544	3.5	38,874	1.0	39,245	0.9	39,616
July	39,399	1.2	39,872	3.4	41,211	(0.1)	41,178	0.1	41,224	1.6	41,866
August	40,455	0.5	40,659 (8)	2.8	41,789	0.4	41,946	(0.1)	41,904		
September	34,845	1.0	35,206 (8)	3.0	36,263	(0.2)	36,195	1.3	36,668		
October	34,832	0.2	34,914	1.1	35,313	0.5	35,499	2.4	36,355		
November	31,966	(1.2)	31,574	4.4	32,959	1.3	33,377	(0.3)	33,264		
December	30,864	5.0	32,414	3.7	33,627	(0.6)	33,431	(0.0)	33,430		
TOTAL	$407,044	0.2	$408,005	2.2	$416,862	2.2	$426,104	0.5	$428,157		$248,668
Subtotal Jan. - July	$234,082	(0.4)	$233,238	1.6	$236,911	3.7	$245,656	0.4	$246,536	0.9	$248,668

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) A 50% toll increase was implemented on January 1, 2012.
(4) Superstorm Sandy, October 29-30, 2012
(5) Consists of Classes 2 through B3. Heavy trucks, registered as 10,000 lbs or more (6 tires or 3-or-more-axles), are prohibited north of Interchange 105.
(6) Abnormally cold weather.
(7) NJTA changed its accounting for toll discounts, resulting in a slightly greater percentage of discounts attributed to commercial vehicles, and a decreased percentage attributed attributed to passenger cars. A comparison of commercial vehicle toll revenue to the prior year is not valid. The lost revenue exhibited for the commercial vehicles was added to the car category, but due to the relatively low value of the revenue shift, the impact is not noticeable for passenger cars.
(8) Casino closures: Atlantic Club in January, Showboat in August, and Revel and Trump Plaza in September.

Source: NJTA

Total System Trends

Table 3-10 shows monthly toll revenue trends for the Authority's roadways from January 2013 through July 2018. Compared to the preceding year, total systemwide toll revenue increased 2.3 percent in 2014, 5.4 percent in 2015, 3.1 percent in 2016, and 0.6 percent in 2017. In the first seven months of 2018, total toll revenue increased by 2.0 percent.

Annual Trends in E-ZPass Market Share

E-ZPass percent market shares of toll transactions for the Turnpike, Parkway and Total System are shown in **Table 3-11**. The market shares are provided by passenger car and commercial vehicle for the Turnpike from 2003 through 2017, and by all vehicles for the Parkway and the Total System from 2007 through 2017. In addition, the percentage point change in market share from the prior year is also provided.

The E-ZPass market shares increased from 60.2 percent in 2003 to 83.2 percent in 2017 for passenger-car transactions on the Turnpike. Commercial-vehicle transactions had an E-ZPass market share of 66.8 percent in 2003, increasing to 91.6 percent in 2017. Parkway E-ZPass market share increased from 65 .7 percent in 2007 to 81.4 percent in 2017. Total System E-ZPass market share increased from 67.4 percent to 82.5 percent in the same time period.

Currently passenger cars do not receive any automatic discount for E-ZPass usage on the Parkway. Trucks (classes 2 – 6) receive an automatic E-ZPass discount of about 5.0 percent off the cash rate for travel in off-peak periods. On the Turnpike, passenger-car E-ZPass customers receive an automatic discount for trips made during off-peak hours. The net discount varies depending on the particular trip. For a through trip, the passenger-car discount is 25 percent. Trucks using E-ZPass on the Turnpike also receive an automatic discount from the cash rate, totaling about 9 percent for a through trip any time of the day, and about 13 percent for a trip during off-peak hours. These current toll differentials do offer a financial incentive to use E-ZPass instead of cash. It should be noted that all E-ZPass toll discounts are only available to E-ZPass accounts set up in New Jersey. All non-New Jersey registered E-ZPass motorists pay the cash rates.

On December 1, 2008, tolls increased by 40 percent on the Turnpike and 43 percent on the Parkway, substantially increasing the actual toll differential between cash and E-ZPass. In 2008 and 2009 total E-ZPass market share increased by 1.9 percentage points and 1.4 percentage points, respectively, on the Turnpike in response to the 2008 toll increase. The rate of increase declined to 1.1 percentage points in 2010, and then increased by 1.9 percentage points in 2011. The toll increase implemented on January 1, 2012 further increased the actual toll differential between cash and E-ZPass. The increased differential contributed to unusually high E-ZPass market share growth in 2012, demonstrated by an increase of 2.8 percentage points for all Turnpike transactions. Since 2012, E-ZPass market share on the Turnpike has increased every year, by between 0.5 and 1.6 percentage points.

Table 3-10
Historical Gross Toll Revenue Trends By Month
Total of All Vehicle Classes
(Thousands of Dollars)

New Jersey Turnpike

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	$75,908	(3.7)	$73,073 (2)	4.2	$76,146 (2,7)	4.7	$79,762 (7)	7.0	$85,323 (7,8)	1.1	$86,222 (7)
February	68,516 (2)	(4.6)	65,360 (2)	11.1	72,614 (2,7)	12.0	81,306 (1,7)	(5.7)	76,691 (7,8)	7.1	82,109 (7)
March	81,986	0.0	81,994 (6)	5.0	86,095 (2,7)	9.5	94,269 (7)	(5.0)	89,557 (7,8)	3.7	92,908 (7)
April	84,291	3.8	87,480 (7)	6.8	93,391 (7)	0.4	93,785 (7)	3.3	96,872 (7)	1.1	97,932 (7)
May	88,594	3.7	91,866 (7)	6.9	98,246 (7)	1.3	99,532 (7)	2.6	102,108 (7)	1.6	103,714 (7)
June	86,323	6.0	91,501 (7)	6.4	97,340 (7)	3.8	101,079 (7)	1.7	102,840 (7)	0.9	103,794 (7)
July	90,883	3.4	93,986 (7)	9.7	103,077 (7)	1.0	104,128 (7)	0.0	104,148 (7)	2.3	106,507 (7)
August	94,835	1.3	96,105 (7)	7.3	103,089 (7)	3.1	106,323 (7)	1.3	107,676 (7)		
September	84,290	4.7	88,282 (7)	5.4	93,074 (7)	2.9	95,758 (7)	1.5	97,172 (7)		
October	87,905	6.1	93,233 (7)	3.9	96,825 (7)	1.6	98,352 (7)	1.3	99,595 (7)		
November	81,972	5.3	86,356 (7)	7.0	92,405 (7)	3.1	95,274 (7)	(0.5)	94,759 (7)		
December	81,217	9.0	88,507 (7)	6.2	93,965 (7)	1.1	94,989 (7)	0.0	94,997 (7)		
TOTAL	$1,006,720	3.1	$1,037,743	6.6	$1,106,267	3.5	$1,144,557	0.6	$1,151,738		$673,186
Subtotal Jan. - July	$576,501	1.5	$585,260	7.1	$626,909	4.3	$653,861	0.6	$657,539	2.4	$673,186

Garden State Parkway

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	$30,130	(6.0)	$28,319 (2)	0.2	$28,380 (2)	4.4	$29,617	5.3	$31,193	(0.3)	$31,106
February	27,230 (2)	(4.6)	25,989 (2)	3.8	26,979 (2)	12.6	30,373 (1)	(3.3)	29,383	2.4	30,086
March	32,105	(0.5)	31,934 (6)	(0.7)	31,703 (2)	8.6	34,420	(3.6)	33,190	(0.6)	32,989
April	32,973	1.1	33,326	1.8	33,924	0.8	34,206	1.7	34,795	0.5	34,961
May	35,864	1.6	36,424	2.0	37,170	(0.5)	36,988	1.4	37,506	1.4	38,044
June	36,381	2.7	37,374	0.5	37,544	3.5	38,874	1.0	39,245	0.9	39,616
July	39,399	1.2	39,872	3.4	41,211	(0.1)	41,178	0.1	41,224	1.6	41,866
August	40,455	0.5	40,659	2.8	41,789	0.4	41,946	(0.1)	41,904		
September	34,845	1.0	35,206	3.0	36,263	(0.2)	36,195	1.3	36,668		
October	34,832	0.2	34,914	1.1	35,313	0.5	35,499	2.4	36,355		
November	31,966	(1.2)	31,574	4.4	32,959	1.3	33,377	(0.3)	33,264		
December	30,864	5.0	32,414	3.7	33,627	(0.6)	33,431	(0.0)	33,430		
TOTAL	$407,044	0.2	$408,005	2.2	$416,862	2.2	$426,104	0.5	$428,157		$248,668
Subtotal Jan. - July	$234,082	(0.4)	$233,238	1.6	$236,911	3.7	$245,656	0.4	$246,536	0.9	$248,668

Total Toll Revenue

Month	2013	Percent Change	2014	Percent Change	2015	Percent Change	2016	Percent Change	2017	Percent Change	2018
January	$106,038	(4.4)	$101,392 (2)	3.1	$104,526 (2,7)	4.6	$109,379 (7)	6.5	$116,516 (7,8)	0.7	$117,328 (7)
February	95,746 (2)	(4.6)	91,349 (2)	9.0	99,593 (2,7)	12.1	111,679 (1,7)	(5.0)	106,074 (7,8)	5.8	112,195 (7)
March	114,091	(0.1)	113,928 (6)	3.4	117,798 (2,7)	9.2	128,689 (7)	(4.6)	122,747 (7,8)	2.6	125,897 (7)
April	117,264	3.0	120,806 (7)	5.4	127,315 (7)	0.5	127,991 (7)	2.9	131,667 (7)	0.9	132,893 (7)
May	124,458	3.1	128,290 (7)	5.6	135,416 (7)	0.8	136,520 (7)	2.3	139,614 (7)	1.5	141,758 (7)
June	122,704	5.0	128,875 (7)	4.7	134,884 (7)	3.8	139,953 (7)	1.5	142,085 (7)	0.9	143,410 (7)
July	130,282	2.7	133,858 (7)	7.8	144,288 (7)	0.7	145,306 (7)	0.0	145,372 (7)	2.1	148,373 (7)
August	135,290	1.1	136,764 (7)	5.9	144,878 (7)	2.3	148,269 (7)	0.9	149,580 (7)		
September	119,135	3.7	123,488 (7)	4.7	129,337 (7)	2.0	131,953 (7)	1.4	133,840 (7)		
October	122,737	4.4	128,147 (7)	3.1	132,138 (7)	1.3	133,851 (7)	1.6	135,950 (7)		
November	113,938	3.5	117,930 (7)	6.3	125,364 (7)	2.6	128,651 (7)	(0.5)	128,023 (7)		
December	112,081	7.9	120,921 (7)	5.5	127,592 (7)	0.6	128,420 (7)	0.0	128,427 (7)		
TOTAL	$1,413,764	2.3	$1,445,748	5.4	$1,523,129	3.1	$1,570,661	0.6	$1,579,895		$921,854
Subtotal Jan. - July	$810,583	1.0	$818,498	5.5	$863,820	4.1	$899,517	0.5	$904,075	2.0	$921,854

(1) Leap year - February had 29 days.
(2) Severe winter weather events.
(3) A 53% toll increase was implemented on January 1, 2012.
(4) A 50% toll increase was implemented on January 1, 2012.
(5) Superstorm Sandy, October 29-30, 2012.
(6) Abnormally cold weather.
(7) Construction on the Pulaski Skyway positively impacted passenger car traffic on the Turnpike.
(8) Delaware River Turnpike Bridge was closed to all traffic from January 20, 2017 through March 9, 2017.
Source: NJTA

Table 3-11
Historical Trends in E-ZPass Market Share
Of Toll Transactions

Calendar Year	Turnpike Passenger Cars	Turnpike Commercial Vehicles	Turnpike All Vehicles	Parkway All Vehicles	Total System All Vehicles
Percent E-ZPass Market Share					
2003	60.2 %	66.8 %	61.1 %	na	na
2004	63.5	69.7	64.3	na	na
2005	65.5	74.7	66.7	na	na
2006	67.4	76.7	68.6	na	na
2007	69.0	78.0	70.2	65.7 %	67.4 %
2008	70.9	80.0	72.1	67.7	69.4
2009	72.3	81.5	73.5	70.6	71.7
2010	73.5	81.8	74.6	71.4	72.6
2011	75.5	83.0	76.4	72.5	74.0
2012	78.1	86.5	79.2	75.7	77.0
2013	79.5	88.2	80.6	77.2	78.5
2014	80.0	89.1	81.2	78.1	79.3
2015	80.5	89.9	81.7	78.7	79.9
2016	81.4	90.8	82.6	79.6	80.8
2017	83.2	91.6	84.2	81.4	82.5
Net Change In Percentages					
2003	- -	- -	- -	- -	- -
2004	3.3	2.9	3.2	na	na
2005	2.0	5.0	2.4	na	na
2006	1.8	2.0	1.9	na	na
2007	1.6	1.3	1.6	na	na
2008	1.9	2.0	1.9	2.0	2.0
2009	1.5	1.5	1.4	2.9	2.3
2010	1.2	0.2	1.1	0.8	0.9
2011	1.9	1.2	1.9	1.1	1.4
2012	2.6	3.5	2.8	3.2	3.0
2013	1.4	1.7	1.4	1.5	1.5
2014	0.5	0.9	0.6	0.9	0.8
2015	0.5	0.8	0.5	0.6	0.6
2016	0.9	0.9	0.9	0.9	0.9
2017	1.8	0.8	1.6	1.8	1.7

Source: NJTA

The Parkway also exhibited larger than normal E-ZPass market share increases as a result of the December 2008 and January 2012 toll increases. In 2009, Parkway E-ZPass market share increased by 2.9 percent and in 2012 it increased by 3.2 percent. Since 2012, the rate of E-ZPass increase on the Parkway has been nearly identical to that for the Turnpike, averaging between 0.6 and 1.8 percentage points. This analysis of the E-ZPass market share trends helped develop future year estimates of E-ZPass penetration rates.

Annual Trends in Vehicle Class Distribution

The percent of commercial-vehicle transactions on the Turnpike and Parkway have remained quite stable over the last fourteen years, as has their share of the gross toll revenue. As seen in **Table 3-12**, commercial-vehicle toll transactions on the Turnpike ranged from a high of 13.9 percent of total toll transactions in 2006 and 2007 to a low of 12.5 percent in 2016 and 2017. Their share of the gross toll revenue ranged from a high of 36.5 percent of total toll revenue in 2008 to a low of 30.5 percent in 2017.

On the Parkway, commercial-vehicle toll transactions have much less variation, ranging from 1.1 percent to 1.4 percent of total transactions between 2004 and 2017. Their share of gross toll revenue was also very consistent, ranging from a high of 4.1 percent of total gross toll revenue to a low of 1.1 percent. Since 2008, the Parkway commercial-vehicle revenue share ranged from 2.8 percent to 4.1 percent. It should be noted that in 2007 the Parkway modified their vehicle class definitions to match the Turnpike's. This change impacted how transactions were divided into passenger car and commercial vehicle transactions from 2008 onward.

Table 3-12
Annual Trends in Commercial Vehicle Distribution
By Toll Transactions and Toll Revenue

Calendar Year	Toll Transactions: Turnpike	Toll Transactions: Parkway	Toll Transactions: Total System	Gross Toll Revenue: Turnpike	Gross Toll Revenue: Parkway	Gross Toll Revenue: Total System
2004	13.7 %	1.4 %	4.9 %	35.4 %	1.4 %	25.7 %
2005	13.8	1.3	5.5	36.0	3.5	26.9
2006	13.9	1.1	5.8	35.0	1.1	25.8
2007 (1)	13.9	1.1	5.9	35.5	1.1	26.2
2008	13.8	1.1	5.9	36.5	2.8	27.3
2009	12.9	1.3	5.6	33.7	3.3	24.8
2010	12.8	1.2	5.7	32.6	3.4	24.0
2011	12.7	1.3	5.6	33.9	3.2	24.9
2012	12.8	1.3	5.7	32.7	4.1	24.4
2013	13.0	1.4	5.8	33.2	4.1	24.8
2014	12.9	1.4	5.8	33.0	3.7	24.8
2015	12.7	1.4	5.8	32.7	3.8	24.8
2016	12.5	1.3	5.7	32.2	3.6	24.4
2017	12.5	1.3	5.8	30.5	3.7	23.2

Note: Commercial Vehicles are defined as vehicle classes 2-6 and B1 and B2.
(1) Parkway changed their class structure to match Turnpike in 2007.

Source: NJTA

Chapter 4

Corridor Growth Analysis

Historical and forecast socioeconomic data was collected and evaluated to understand how New Jersey and the major sub-state regions are growing. Discussions with local Metropolitan Planning Organization (MPO) representatives were also conducted to confirm and substantiate the socioeconomic data and understand underlying trends. This information was then used in an econometric analysis to estimate mid-term baseline travel demand on the two New Jersey Turnpike Authority (NJTA) facilities: the New Jersey Turnpike and the Garden State Parkway.

The purpose of this chapter is: 1) to provide a description of the historical and forecasted trends in the study area socioeconomics; 2) qualitatively summarize discussions with regional MPO representatives regarding socioeconomic trends and regional developments; and 3) to describe the methodological approach and findings of the econometric growth analysis.

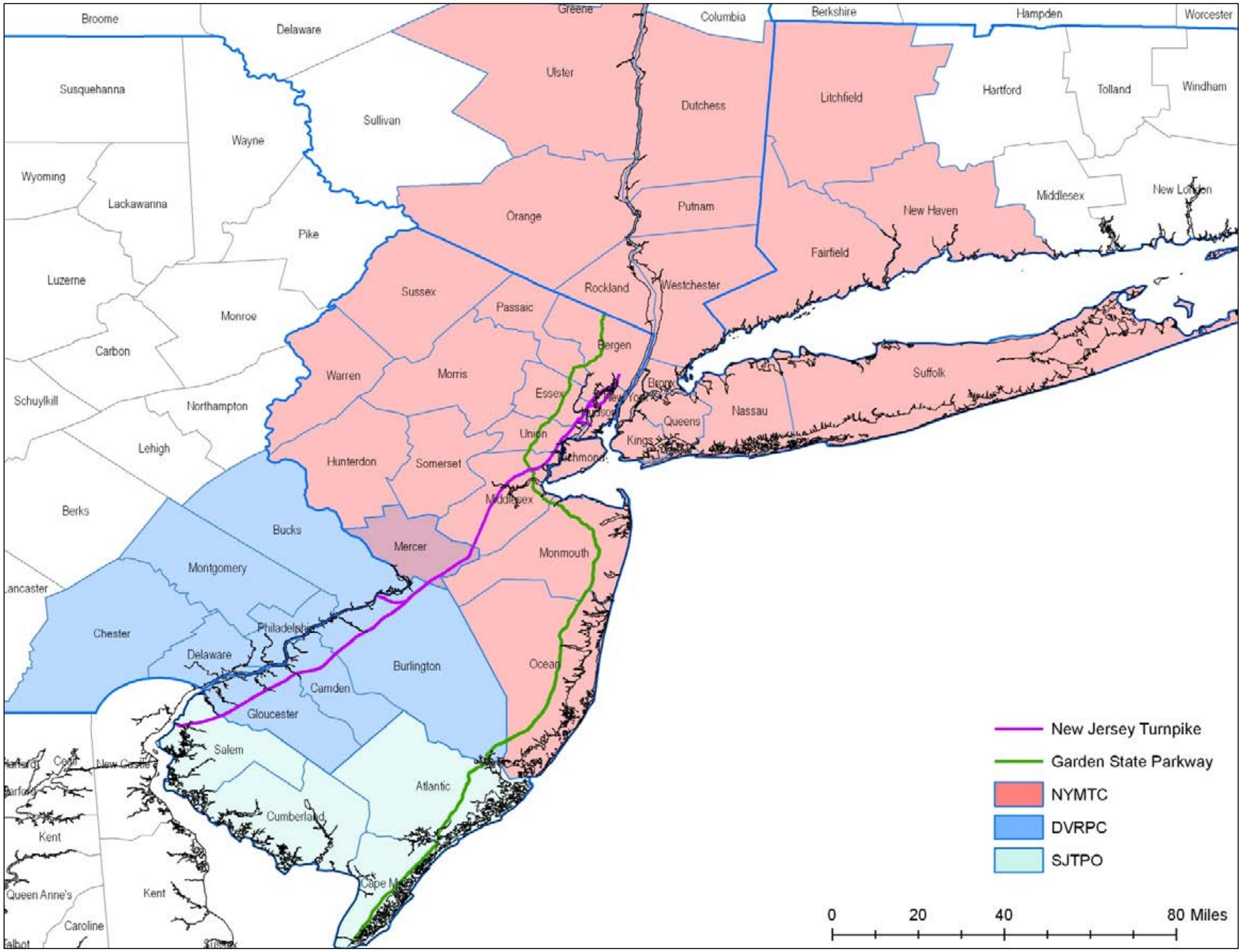
Socioeconomic Historical Trends and Forecasts

Socioeconomic trends and forecasts for the geographies along and surrounding the New Jersey Turnpike and the Garden State Parkway were evaluated, which serve as inputs into the regression-based demand growth analysis. Subsections below provide a summary of various demographic and economic measures, including population, employment, real retail sales, and real gross regional product (GRP). Additional information is provided regarding monthly unemployment rates and monthly retail gasoline and diesel fuel prices.

In the subsequent tables, the socioeconomic growth rates are presented in annualized compound average growth rate (CAGR) terms, reported in five-year increments from 1995 through 2030. Geographically, the state of New Jersey is presented along with the metropolitan areas of New York City (NYC) and Philadelphia, as well as the southeastern section of the state, and the entire nation. County compositions of the respective sub-state and metropolitan areas are included within footnotes in the presented tables and a map of the respective areas is depicted in **Figure 4-1**.

Population Historical Trends and Forecasts

Historical population data were obtained from the United States Census Bureau and forecast data from other public and private sources, depending on geography, as presented in Table 4-1 New Jersey counties' and metropolitan areas' population data were obtained from the respective regional MPOs, and are available through at least year 2040. Metropolitan NYC (comprised of counties in Connecticut, New York, and New Jersey) population forecast data are from the New York Metropolitan Transportation Council (NYMTC), and the North Jersey Transportation Planning Authority (NJTPA). Metropolitan Philadelphia data are from the Delaware Valley Regional Planning Commission (DVRPC), and the southeastern New Jersey counties are from the South Jersey Transportation Planning Organization (SJTPO). Population forecasts for the entire state of New Jersey are the aggregation of the constituent forecasts for the combined 21 counties in the state, from the respective MPO sources.



CORRIDOR INFLUENCE AREA

FIGURE 4-1

National data are presented for comparative purposes, with the forecasts from the Woods and Poole dataset[1].

As shown in **Table 4-1**, population growth in New Jersey and the surrounding metropolitan areas are lower relative to the growth in the nation, for both the historical trends and forecasts. Historically, the resident population in New Jersey annually increased by about 0.5 percent on average from 1995 through 2015, with metropolitan Philadelphia and southeastern New Jersey growth slower than NYC. Comparatively, historical population growth in the United States averaged about 0.9 percent per year over the same twenty-year period.

Table 4-1
Population Trends and Forecasts (CAGR, %)

Area		1995 - '00	2000 - '05	2005 - '10	2010 - '15	2015 - '20	2020 - '25	2025 - '30	1995 - '15	2015 - '30
Metro NYC	1	0.9	0.3	0.4	0.6	0.3	0.4	0.5	0.5	0.4
Metro Philadelphia	2	0.3	0.4	0.5	0.3	0.4	0.4	0.4	0.4	0.4
Southeastern NJ	3	0.6	0.7	0.3	(0.3)	0.4	0.4	0.3	0.3	0.4
New Jersey	4	0.8	0.5	0.3	0.4	0.3	0.4	0.5	0.5	0.4
United States		1.2	0.9	0.9	0.7	0.9	0.9	0.9	0.9	0.9

Geographies:

[1] Metro NYC as defined by NYMTC includes the following counties: Fairfield, CT; Litchfield, CT; New Haven, CT; Bergen, NJ; Essex, NJ; Hudson, NJ; Hunterdon, NJ; Mercer, NJ; Middlesex, NJ; Monmouth, NJ; Morris, NJ; Ocean, NJ; Passaic, NJ; Somerset, NJ; Sussex, NJ; Union, NJ; Warren, NJ; Bronx, NY; Dutchess, NY; Kings, NY; Nassau, NY; New York, NY; Orange, NY; Putnam, NY; Queens, NY; Richmond, NY; Rockland, NY; Suffolk, NY; Sullivan, NY; Ulster, NY; and, Westchester, NY

[2] Metro Philadelphia as defined by DVRPC includes the following counties: Burlington, NJ; Camden, NJ; Gloucester, NJ; Mercer, NJ; Bucks, PA; Chester, PA; Delaware, PA; Montgomery, PA; and, Philadelphia, PA

[3] Southeastern NJ as defined by SJTPO includes the following counties: Atlantic, NJ; Cape May, NJ; Cumberland, NJ; and, Salem, NJ

[4] New Jersey includes an aggregation of all 21 counties in the state

Sources: Years 1995 to 2015 reflect United States Census data; MPO forecasts are from the respective MPOs; New Jersey is based on the aggregation of pertinent MPO sources; and, United States forecasts are from Woods & Poole 2018

Future resident population growth around New Jersey is forecast to remain at the relatively slow-growth historical levels. As exhibited, projections average 0.4 percent per annum through 2030. Similar to the recent historical trends, this rate would remain below the expected population growth for the nation, which, on average, is projected to be 0.9 percent per annum through 2030.

[1] Source: Woods & Poole Economics, Inc. Washington, D.C. Copyright 2018. Woods & Poole does not guarantee the accuracy of this data. The use of this data and the conclusion drawn from it are solely the responsibility of the Consultant.

Employment and Unemployment Historical Trends and Forecasts

Employment trends are exhibited in **Table 4-2**, with historical data from the United States Bureau of Labor Statistics from 1995 through 2015, and future data are based on MPO sources or Woods & Poole, depending on geography, similar to the population data.

Historical employment growth patterns are similar across the presented geographies, with a relatively robust growth in the late '90s, followed by a deceleration in the subsequent five years through 2005, and a contraction between 2005 to 2010, reflective of the economic downturn realized during the recent recession, which officially began in late 2007. In all but the southeastern New Jersey region, employment growth rebounded following the recession in the 2010 to 2015 timeframe. Nationally, historical employment growth exhibited similar patterns during the five-year increments; although, similarly to population trends, the overall employment growth rates were somewhat faster for the nation than for the New Jersey areas.

Table 4-2
Employment Trends and Forecasts (CAGR, %)

Area		1995 - '00	2000 - '05	2005 - '10	2010 - '15	2015 - '20	2020 - '25	2025 - '30	1995 - '15	2015 - '30
Metro NYC	1	1.7	0.5	(0.2)	1.2	0.6	0.3	0.3	0.8	0.4
Metro Philadelphia	2	1.0	0.4	(0.2)	0.9	0.5	0.4	0.4	0.5	0.4
Southeastern NJ	3	1.8	0.8	(1.4)	(0.7)	(0.3)	(0.1)	0.3	0.1	(0.0)
New Jersey	4	1.3	0.3	(0.4)	0.7	0.7	0.3	0.3	0.5	0.4
United States		1.9	0.7	(0.4)	1.4	1.8	1.4	1.3	0.9	1.5

Geographies:

[1] Metro NYC as defined by NYMTC includes the following counties: Fairfield, CT; Litchfield, CT; New Haven, CT; Bergen, NJ; Essex, NJ; Hudson, NJ; Hunterdon, NJ; Mercer, NJ; Middlesex, NJ; Monmouth, NJ; Morris, NJ; Ocean, NJ; Passaic, NJ; Somerset, NJ; Sussex, NJ; Union, NJ; Warren, NJ; Bronx, NY; Dutchess, NY; Kings, NY; Nassau, NY; New York, NY; Orange, NY; Putnam, NY; Queens, NY; Richmond, NY; Rockland, NY; Suffolk, NY; Sullivan, NY; Ulster, NY; and, Westchester, NY

[2] Metro Philadelphia as defined by DVRPC includes the following counties: Burlington, NJ; Camden, NJ; Gloucester, NJ; Mercer, NJ; Bucks, PA; Chester, PA; Delaware, PA; Montgomery, PA; and, Philadelphia, PA

[3] Southeastern NJ as defined by SJTPO includes the following counties: Atlantic, NJ; Cape May, NJ; Cumberland, NJ; and, Salem, NJ

[4] New Jersey includes an aggregation of all 21 counties in the state

Sources: Years 1995 to 2015 reflect Bureau of Labor Statistics (BLS) data; MPO forecasts are from the respective MPOs; New Jersey is based on the aggregation of pertinent MPO sources; and, United States forecasts are from Woods & Poole 2018

Rebounding employment growth following the recession (excepting southeastern New Jersey) from 2010 to 2015 is not projected to continue at that pace. Future employment is forecast to grow, albeit at decelerated rates from the recent rebound period, such that for the overall 2015 to 2030 horizon, the average growth for New Jersey, NYC, and Philadelphia are at 0.4 percent annually. Southeast New Jersey, contrastingly, is projected to continue employment contraction through 2025 and then revert to slow growth through 2030. Nationally, employment is forecast to grow 1.5 percent annually from 2015 to 2030, and similar to population, at a relatively faster pace than New Jersey areas.

Figure 4-2 depicts seasonally-unadjusted monthly unemployment rates over the last decade, spanning January 2008 through June/July 2018, for the major metropolitan statistical areas (MSA) in and around New Jersey: Philadelphia-Camden-Wilmington, New York-Newark-Jersey City, and Atlantic City-Hammonton. In addition, unemployment rate data are also included pertaining to the entire state of New Jersey and for the United States. Given that the data is seasonally-unadjusted, the graph depicts both the cyclical seasonal variations, as well as the longer-term trends.

Unemployment rates for the entire state of New Jersey, the NYC MSA, and the Philadelphia MSA have generally tracked closely with national unemployment trends. In early 2008, the unemployment rates for such areas were all around 5 to 6 percent, but in the subsequent couple years, then spiked closer to 10 percent in late 2009/early 2010. Since that peak unemployment recessionary timeframe, unemployment rates have steadily decreased, closer to about 4 percent in mid-2018. Atlantic City-Hammonton MSA has historically exhibited higher unemployment than either the state of New Jersey or the nation and with greater seasonal volatility. Although unemployment has steadily decreased since the recessionary peak, the unemployment rates in the Atlantic City-Hammonton MSA remain higher than the other MSAs presented.

As of mid-2018, the unemployment rates, at around 4 percent, are considered at, or close-to, structural unemployment – or, the natural full-capacity rates that reflect "normal" employee turnover patterns. At structural unemployment, there is little opportunity for realistically lowering rates further.

Real Retail Sales Historical Trends and Forecasts

Real retail sales historical trends and forecast are presented below in **Table 4-3**, sourced from Woods & Poole. Both New Jersey and the metropolitan areas along the two facilities exhibit similar patterns of CAGR for real retail sales (both historically and forecasted). Since 1995, real retail sales growth for those geographies was between 1.5 and 2.1 percent per annum, depending on geography, with NYC exhibiting the highest relative growth. During that period, the change in real retail sales varied from strong growth of around 4.0 percent per year in the late '90s, to deceleration in the subsequent five years, followed by contraction between 2005 and 2010 due to the recession period. Since 2010, real retail sales rebounded from the recession, with New Jersey annual growth amounting to 2.6 percent. Over the entire twenty-year period from 1995, New Jersey exhibited 1.8 percent annualized growth, where the United States observed 2.0 percent.

Table 4-3
Real Retail Sales Trends and Forecasts (CAGR, %)

Area		1995 - '00	2000 - '05	2005 - '10	2010 - '15	2015 - '20	2020 - '25	2025 - '30	1995 - '15	2015 - '30
Metro NYC	1	4.2	2.4	(0.9)	2.9	1.3	0.9	0.7	2.1	1.0
Metro Philadelphia	2	3.8	2.0	(1.9)	2.2	1.3	1.0	0.8	1.5	1.0
Southeastern NJ	3	4.2	2.8	(1.9)	1.7	1.2	1.0	0.8	1.7	1.0
New Jersey	4	4.1	1.9	(1.5)	2.6	1.3	1.0	0.8	1.8	1.0
United States		4.1	2.1	(1.0)	3.0	1.8	1.4	1.2	2.0	1.5

Geographies:

[1] Metro NYC as defined by NYMTC includes the following counties: Fairfield, CT; Litchfield, CT; New Haven, CT; Bergen, NJ; Essex, NJ; Hudson, NJ; Hunterdon, NJ; Mercer, NJ; Middlesex, NJ; Monmouth, NJ; Morris, NJ; Ocean, NJ; Passaic, NJ; Somerset, NJ; Sussex, NJ; Union, NJ; Warren, NJ; Bronx, NY; Dutchess, NY; Kings, NY; Nassau, NY; New York, NY; Orange, NY; Putnam, NY; Queens, NY; Richmond, NY; Rockland, NY; Suffolk, NY; Sullivan, NY; Ulster, NY; and, Westchester, NY

[2] Metro Philadelphia as defined by DVRPC includes the following counties: Burlington, NJ; Camden, NJ; Gloucester, NJ; Mercer, NJ; Bucks, PA; Chester, PA; Delaware, PA; Montgomery, PA; and, Philadelphia, PA

[3] Southeastern NJ as defined by SJTPO includes the following counties: Atlantic, NJ; Cape May, NJ; Cumberland, NJ; and, Salem, NJ

[4] New Jersey includes an aggregation of all 21 counties in the state

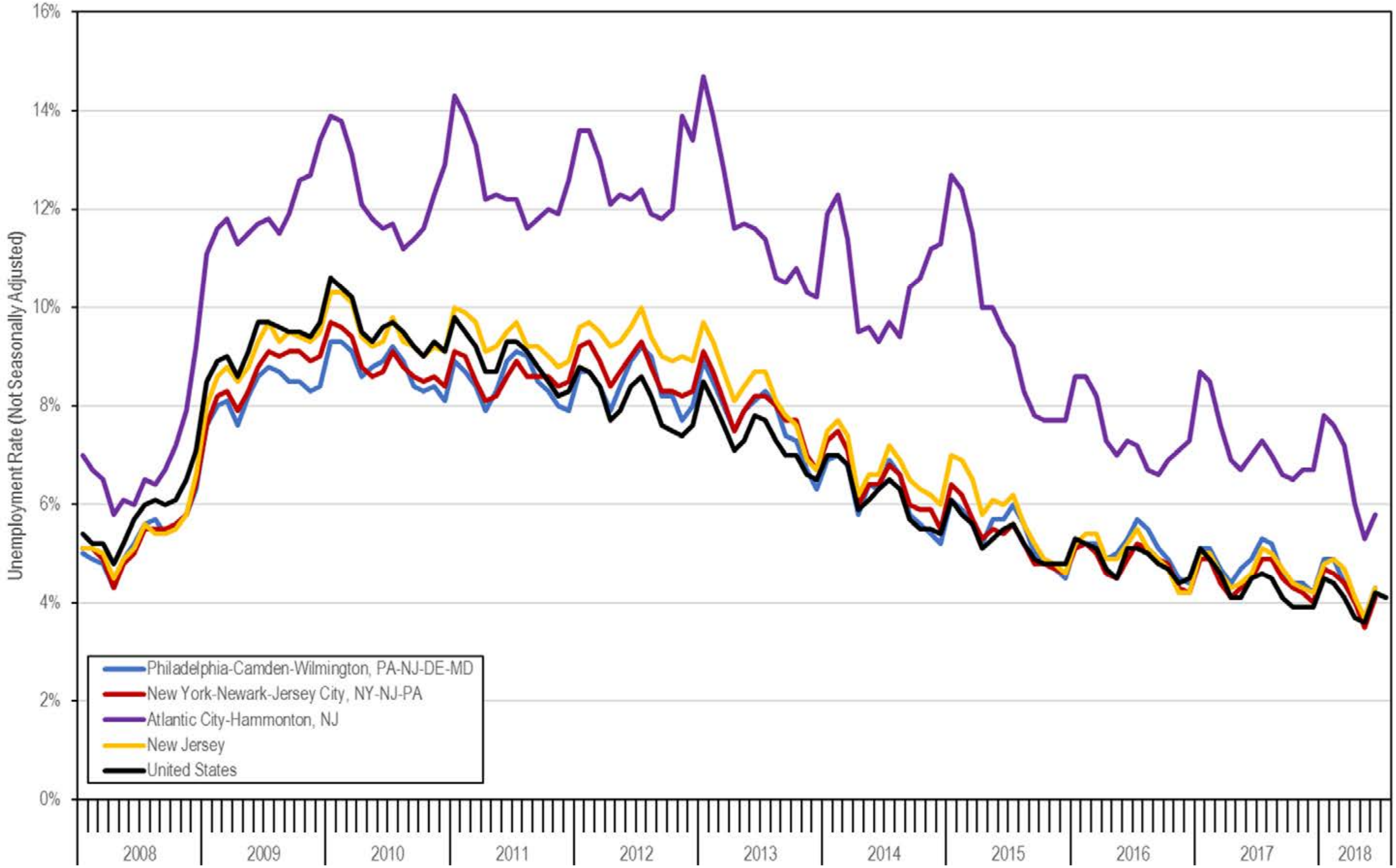
Source: Woods & Poole 2018

While real retail sales growth rebounded following the recession, that growth pattern is not projected to continue. Instead, Woods & Poole projects a decelerated annualized growth of 1.0 percent for New Jersey and the metropolitan areas, on average, through 2030. In comparison, real retail sales in the United States are projected to grow by 1.5 percent per annum during the same horizon.

Real Gross Regional Product (GRP) Historical Trends and Forecasts

Historical and forecast growth rates for real GRP are shown in **Table 4-4**, sourced from Woods & Poole. National real gross domestic product historically decelerated from an annual average rate of 4.5 percent in the late ‘90s to 2.8 percent over the first five years of the new millennium, to 0.7 percent between 2005 and 2010. Since the recession period, national real GDP grew 2.4 percent from 2010 to 2015. New Jersey’s real gross state product growth also decelerated similarly over the same period from 3.8 percent in the late ‘90s to 1.9 percent per annum in the subsequent five years and then to no growth during the recessionary timeframe, followed by a rebounding to 1.3 percent from 2010 to 2015. Metropolitan NYC and Philadelphia exhibited similar average growth rates since 1995, about 0.7 percent above the New Jersey’s annual average, while southeastern New Jersey experienced growth substantially slower than the other geographies in the study area at less than 1 percent per year.

Historically, the 14 metro NYC counties in New Jersey exhibited relatively slower real GRP growth than the 17 non-New Jersey counties, with average annual growth of 1.8 percent versus 2.7 percent, respectively, from 1995 to 2015. Woods and Poole forecasts very similar average annual growth through 2030 for both sub-metro regions, with the New Jersey counties projected to be slightly higher than the non-Jew Jersey counties, at 1.6 percent and 1.5 percent, respectively. Similar patterns are also



CDM Smith

SEASONALLY UNADJUSTED MONTHLY UNEMPLOYMENT RATES

FIGURE 4-2

evident for metro Philadelphia, with the four New Jersey counties exhibiting relatively slower average annual historical real GRP growth than the five non-New Jersey counties, at 2.1 percent versus 2.5 percent, respectively, from 1995 to 2015. Forecasts for the sub-Philadelphia regions are similar, with 1.7 percent annual growth from Woods and Poole for the New Jersey counties, and 1.8 percent for the non-New Jersey counties.

Table 4-4
Real Gross Regional Product Trends and Forecasts (CAGR, %)

Area		1995 - '00	2000 - '05	2005 - '10	2010 - '15	2015 - '20	2020 - '25	2025 - '30	1995 - '15	2015 - '30
Metro NYC	1	4.7	1.9	1.0	2.2	1.8	1.4	1.3	2.4	1.5
NYC - NJ		*4.1*	*1.5*	*0.1*	*1.4*	*1.8*	*1.5*	*1.5*	*1.8*	*1.6*
NYC - non-NJ		*5.0*	*2.0*	*1.3*	*2.5*	*1.8*	*1.4*	*1.3*	*2.7*	*1.5*
Metro Philadelphia	2	3.5	2.7	1.3	1.9	2.0	1.7	1.6	2.4	1.8
Philadelphia - NJ		*3.0*	*3.4*	*0.5*	*1.4*	*2.0*	*1.5*	*1.5*	*2.1*	*1.7*
Philadelphia - non-NJ		*3.7*	*2.5*	*1.6*	*2.1*	*2.0*	*1.7*	*1.6*	*2.5*	*1.8*
Southeastern NJ	3	0.9	4.7	(1.8)	(0.5)	1.4	1.2	1.2	0.8	1.3
New Jersey	4	3.8	1.9	0.0	1.3	1.7	1.5	1.5	1.7	1.6
United States		4.5	2.8	0.7	2.4	2.1	1.8	1.7	2.6	1.9

Geographies:

[1] Metro NYC as defined by NYMTC includes the following counties: Fairfield, CT; Litchfield, CT; New Haven, CT; Bergen, NJ; Essex, NJ; Hudson, NJ; Hunterdon, NJ; Mercer, NJ; Middlesex, NJ; Monmouth, NJ; Morris, NJ; Ocean, NJ; Passaic, NJ; Somerset, NJ; Sussex, NJ; Union, NJ; Warren, NJ; Bronx, NY; Dutchess, NY; Kings, NY; Nassau, NY; New York, NY; Orange, NY; Putnam, NY; Queens, NY; Richmond, NY; Rockland, NY; Suffolk, NY; Sullivan, NY; Ulster, NY; and, Westchester, NY

[2] Metro Philadelphia as defined by DVRPC includes the following counties: Burlington, NJ; Camden, NJ; Gloucester, NJ; Mercer, NJ; Bucks, PA; Chester, PA; Delaware, PA; Montgomery, PA; and, Philadelphia, PA

[3] Southeastern NJ as defined by SJTPO includes the following counties: Atlantic, NJ; Cape May, NJ; Cumberland, NJ; and, Salem, NJ

[4] New Jersey includes an aggregation of all 21 counties in the state

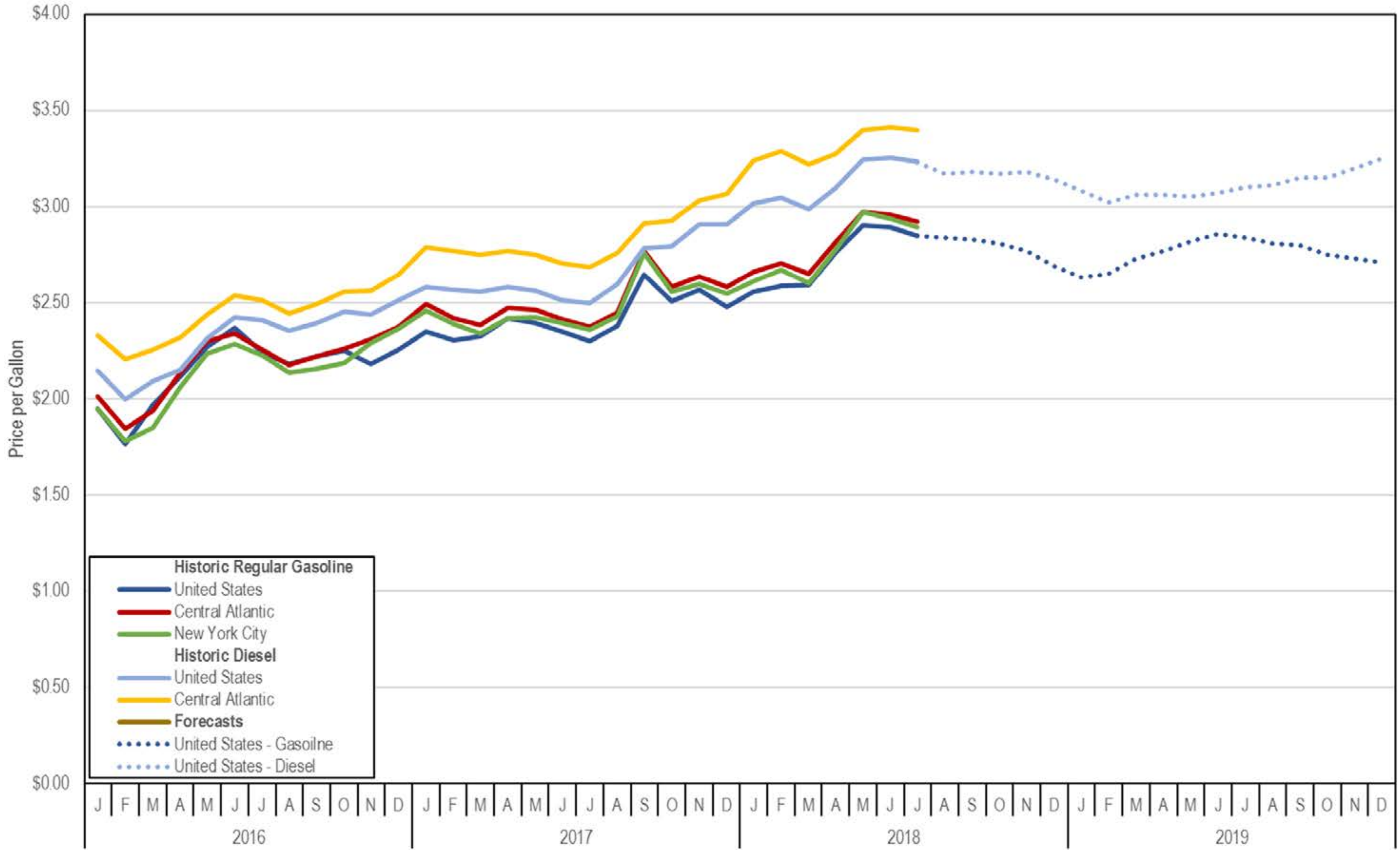
Source: Woods & Poole 2018

Future real GRP growth rates are estimated to average 1.9 percent for the United States, from 2015 through 2030, per annum, with New Jersey averaging about a 1.6 percent real increase per year. In the surrounding areas, similarly to the entire state, the real GRP growth is projected to be 1.3 to 1.8 percent per annum.

Gasoline Prices

Figure 4-3 depicts the monthly average nominal price per gallon of regular/conventional unleaded retail gasoline and diesel fuel over the last few years from the first month of 2016 through July 2018, sourced from the Energy Information Administration's (EIA's) Short-Term Energy Outlook. Data are shown for the United States, the Central Atlantic region (including New Jersey)[2], and New York City.

[2] Central Atlantic region includes: NY, PA, NJ, DE, MD, and DC.



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HISTORICAL AND ESTIMATED AVERAGE REGULAR GAS PRICES

FIGURE 4-3

Between these regions, price variation is relatively narrow, with less than about a $0.10 to $0.20 per gasoline gallon differential in any given month. EIA's short-term fuel price forecasts (through 2019) show almost no change from current prices.

MPO Outreach and Regional Economic Conditions

To supplement the socioeconomic data analysis, additional qualitative inputs were collected through discussions with representatives from the major metropolitan planning organization (MPO) areas within, or near, the New Jersey Turnpike and Garden State Parkway. Additionally, information from annual reports and news articles identified by the MPOs were reviewed and incorporated. While discussed topics varied by MPO, they generally include: socioeconomic data (i.e., population and employment), development, and tolling perspectives. The five entities include:

- *NJTPA* – North Jersey Transportation Planning Authority
- *DVRPC* – Delaware Valley Regional Planning Commission
- *SJTPO* – South Jersey Transportation Planning Organization
- *NYMTC*– New York Metropolitan Transportation Council
- *PANYNJ* – Port Authority of New York and New Jersey

NJTPA

The North Jersey Transportation Planning Authority MPO includes thirteen New Jersey counties. In addition to the dense urban counties around New York City, the MPO extends west to the rural counties bordering Pennsylvania and south to Ocean County. Closely tied with the New York City economy, the NJTPA coordinates planning and development with the NYMTC and PANYNJ.

<u>Socioeconomic</u> – Recent and future population and employment growth reflect two central trends. First, urban counties adjacent to NYC (Bergen, Essex, and Union) have rebounded and continue to grow steadily, while growth trends in western rural counties (Sussex, Warren, and Hunterdon) have slowed notably and/or are forecasted to decline in the coming years. Second, Middlesex County, located along I-95 between NYC and Philadelphia is growing the fastest and may overtake Bergen as the most populated New Jersey county by year 2045.

Such growth reflects several factors that include Millennial generation (born early 1980's through early 2000's) lifestyle choices (e.g., urban, walkable neighborhoods, with non-driving transport) that continue to propel urban resurgence and land-use changes. Similarly, sprawling suburban corporate campuses are changing their location and construct. The Merck campus in Hunterdon County, the Sanofi Research facility in Somerset County, and the Bell Labs campus in Monmouth County have moved campuses closer to the urban core and/or transformed to mixed-use facilities.[3]

The NJTPA Long Range Transportation Plan (LRTP) acknowledges that workplace changes associated with new technologies and business practices will change commuting and travel patterns. The NJTPA also promotes transportation alternatives such as transit-oriented development near bus/rail

[3] NJTPA; Long Range Transportation Plan, 2015; https://togethernorthjersey.com/wp-content/uploads/2016/05/TNJ-Plan-v5-5-16-for-website-small.pdf

terminals in urban areas as well as suburban and rural communities.[4] Such alternatives are coordinated with NYMTC and the Port Authority. In volume terms, the Port Authority Bus Terminal (PABT) currently handles 260,000 passenger trips and 7,900 bus movements daily, which is forecast to grow by 30 percent to 337,000 passenger trips by 2040.[5]

Development – As the most densely populated state, few open "greenfield" sites exist in northern New Jersey, hence commercial growth is primarily led by "brownfield", or infill, redevelopment. In addition to the corporate campus relocations, NYC financial-related service-sector growth continues to spill-over into northern New Jersey, especially in Jersey City.

Various Port Authority development projects continue to address current and future transport needs of both passengers and freight. Projects are planned for a variety of modes including bridges, tunnels, airports, and ports (see PANYNJ subsection below), which affect passenger and freight movements. As a major freight hub, various port projects affect the desirability of current and future warehouse and intermodal facility locations. Similarly, airport improvements affect passenger access by road and transit. A key planning objective of these projects is to reduce highway congestion by diverting truck-borne freight traffic to rail and improving transit connectivity to commercial airports.

Tolling – The non-tolled interstates primarily feed traffic into/out of NYC and have comparatively minor effects on the NJTP or GSP (which are more north-south oriented). Given the existing built-out nature of the area, no new major non-tollway capacity improvements are envisioned, rather only various roadway repairs and rehabilitation projects. For example, rehabilitation of the Lincoln Tunnel viaduct will have a notable, albeit relatively short-term impact on Tunnel volume. While general plaza issues exist, no notable issues exist with specific plazas.

Regarding toll-rates, nobody was happy with recent rate increases; nor were they happy with similar transit rate increases. The limited number of major highways through northern New Jersey and water crossings into/out of NYC results in relatively inelastic demand. Traveler choices are limited to making the trip by car, car-pooling, transit, or not making the trip.

DVRPC

The Delaware Valley Regional Planning Commission comprises four counties (Burlington, Camden, Gloucester, and Mercer) in southern New Jersey, as well as five counties in the Philadelphia area. Toll facilities operate on both the New Jersey and connecting Pennsylvania highway facilities.

Socioeconomic – The urban core (Philadelphia) and the Pennsylvania suburbs are growing. Recent residential increase in central Philadelphia and adjacent ZIP codes reflect Millennials' demand for urban rental and multi-family housing. Similarly, suburban counties, townships, and boroughs are also booming. However, across the river from Philadelphia, population and employment in Camden County, New Jersey remain relatively stagnant as the county continues to struggle despite State-led

[4] Ibid.

[5] Breaking New Ground; 2017 Annual Report; The Port Authority of NY & NJ; https://corpinfo.panynj.gov/documents/2017/

development efforts and corporate investment incentives.[6] Comparatively, the surrounding Gloucester, Burlington and Mercer Counties are better positioned to respond to growing population (especially Gloucester) and employment.

<u>Developments</u> – Port of Philadelphia development continues to generate freight traffic that goes to/from the various distribution facilities along the Turnpike.

Freight and Shipping – With a major international port and commercial service airport along the eastern seaboard, the region accommodates a large volume of directional freight (inbound, outbound, internal, and through) by all four modes (truck, rail, port, and air). At the Port of Philadelphia, larger cranes and harbor deepening (45') facilitate larger Panamax vessels, increased containerization, and recent automobile imports (Hyundai/Kia). At Philadelphia International Airport (PHL), air cargo operations continue to expand (Cargo City and UPS), despite new runway expansion delays (10+ years).

Distribution facilities – Freight center growth continues along the Turnpike between New York City and Philadelphia, especially in Mercer County, which recently added a 1.2-million square foot Amazon facility in Robbinsville. Facility growth is also expanding around Exit 6A in northern Burlington County south of Philadelphia. Distribution facilities in southern Gloucester County (near the Salem County border) also continue to expand.

Other development – High population and employment growth in Middlesex County is also spilling-over into northern Mercer County where retail and office along US1 is growing, especially in West Windsor Township. While residential growth is strong in Mercer, regional growth is led by Gloucester.

<u>Tolling</u> – The 2015 widening of I-295 parallel to the Turnpike between Philadelphia and Trenton helped accommodate Mercer County employment growth. In doing so, I-295 has absorbed more traffic growth than the Turnpike. Nonetheless, congestion persists north of Trenton.

SJTPO

The South Jersey Transportation Planning Organization MPO includes four New Jersey counties: Atlantic, Cape May, Cumberland, and Salem. Predominantly influenced by the Parkway, the northern tip of rural Salem County is also affected by the Turnpike.

<u>Socioeconomic</u> – Contrary to northern New Jersey, southern New Jersey population witnessed sharp drops in population and employment over the past several years. Such contrasts reflect southern New Jersey's rural, tourist-oriented economy. Recent casino-sector rebounds and other developments suggest the region may stabilize and possibly grow despite the conservatively low population and employment forecasts.

As a seasonal-based destination, Atlantic City population is generally perceived to increase by 300 percent during the three summer months of June, July, and August. Such population swings between the on- and off-seasons significantly affect Parkway traffic volumes.

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[6] Huffington Post; March 09, 2018; https://www.huffingtonpost.com/alex-law/the-untold-tragedy-of-cam_b_9401640.html

Developments – While casinos remain the historical economic lynchpin to the region, other developments demonstrate a concerted attempt to revitalize and diversify the economy.

- *Casinos* – Following several closures through 2014, casino employment fell to under 25,000 versus a year 2012 peak of 37,500. However, recent State take-over of Atlantic City finances (bankruptcy refinancing) helped stabilize the market, thereby supporting the recent opening of the *Hard Rock Hotel & Casino Atlantic City* (4,400 jobs) and *Ocean Resort Casino* (3,800 jobs). Led by the market's current top employer, *Borgata Hotel Casino & Spa* (5,900 jobs), casino-employment has rebounded to over 30,000. Overall sector job growth reflects rehires from previously closed properties. And, regional community and business leaders hope the casino will help induce former longtime residents to return to the area, many of whom worked at the casinos.[7]
- *National Aviation Research and Technology Park (NARTP)* – Formerly known as the Stockton Aviation Research and Technology Park, the current NARTP objective is to create a NextGen FAA research center around the joint-use commercial/military airport in Egg Harbor Township. The first building, built and owned by the Atlantic City Improvement Authority, is scheduled for completion by October. The facility will feature 66,000 square feet of research space, a Federal Aviation Administration laboratory, classrooms, a large conference room, and a rooftop lounge. The build-out plan includes a sprawling seven-building research technology park, air cargo operation, and an aviation maintenance and repair academy and company.[8]
- *Stockton University* – Located in Galloway Township, the school originally opened in 1971 as a state college with 1,000 students. In 2011, it opened a Jewish family immigrant Holocaust museum. In 2015, Stockton was granted university status. Today, it enrolls over 9,200 undergraduate and graduate students, and is expanding its campus and building dorms in Atlantic City. As one of only two public-sector universities in New Jersey, it provides an economic driver to the South Jersey region and provides a notable growth opportunity – especially if it can collaborate successfully with public-private ventures such as NARTP.
- *Commercial vehicles* – Distribution facility growth continues along the NJTP in northern Salem County, closer to Philadelphia metro area. Agriculture in southern New Jersey also continues to play a major role in the regional economy. Combined commercial vehicle transport of local produce and distribution facility goods along the NJTP will continue to indirectly affect the SJTPO.

Tolling Perceptions – Concerns were raised regarding the number of tolls, high segment rates, and proximity to one another (too close to one another). The resulting toll diversion of commercial traffic to local roads, using Route 1, raises traffic congestion and safety concerns. Additionally, local leaders expressed a need for summer-month congestion management alleviation strategies.

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[7] The Press of Atlantic City; August 10, 2018; https://www.pressofatlanticcity.com/news/atlantic-city-casinos-employing-for-first-time-in-years/article_077153d7-e06f-543e-b030-83f7d378f7a5.htm

[8] The Press of Atlantic City; August 19, 2018; https://www.pressofatlanticcity.com/news/atlantic-county-showing-tangible-results-with-new-aviation-industry/article_357a30fb-1fe5-504f-b245-5151dadbdacf.html

NYMTC

The New York Metropolitan Transportation Council provides a collaborative transport planning forum, develops regional plans, and coordinates local decisions regarding federal transportation fund allocations. NYMTC'S primary focus area includes New York City, Long Island, and the lower Hudson River Valley. NYMTC's planning effort incorporates metro Connecticut (three counties) and nine northern New Jersey counties (Bergen, Essex, Hudson, Middlesex, Monmouth, Morris, Passaic, Somerset, and Union).

NYMTC also coordinates planning and development with the NJTPA and the PANYNJ. Northern New Jersey sociodemographic data and trends provided by the NJTPA are incorporated into transportation modeling and planning decisions, as are Port Authority transport infrastructure development programs and policies. Anecdotal input regarding northern New Jersey socioeconomic data, future economic development, and/or tolling perceptions was not provided. Rather, we were directed to communicate directly with the NJTPA and the PANYNJ.

PANYNJ

The Port Authority plays a critical role in the region's multi-modal transport of people and freight; they operate six critical bridges and tunnels, three large-hub airports, and six major container terminals. We reached out to the Authority but were unable to talk with them. Nonetheless, we reviewed current developments and plans outlined in their year 2017 annual report[9], and discussed how major Port Authority projects and developments affect other MPOs, especially the NJTPA. Such efforts, summarized below, focus on factors that may affect toll facility forecasts.

Bridge and Tunnel Developments – Four bridge development milestones in 2017 will improve regional traffic flows. First, raising the Bayonne Bridge from 151 to 215 feet enables the port to accommodate larger cargo vessels (e.g., 18,000 twenty-foot equivalent unit (TEU) versus 14,000 TEU). Second, cashless tolling gantries at the Bayonne Bridge reduced traffic congestion associated with toll collection. Third, the eastbound span of the new Goethals Bridge opened to bi-directional traffic as construction continues on the westbound span. Fourth and finally, regional traffic flow will be improved with the authorization of $1.8 billion in George Washington Bridge restoration improvements. Combined, all four bridge developments will improve passenger and freight connectivity between I-95 and NYC, which are vital to accommodating passenger and commercial vehicle traffic forecasts.[10]

Regarding tunnels, much discussion continues regarding the need for a new tunnel(s) to accommodate current and future demand, especially given the age of the two existing tunnels (81-year old Lincoln, and 91-year old Holland). However, no definitive plan or champion has emerged to move plans forward towards realization. Also, as mentioned earlier, the Port Authority Bus Terminal (PABT) currently accommodates 260,000 daily passenger trips (7,900 bus movements), which is forecast to

[9] Breaking New Ground; 2017 Annual Report; The Port Authority of NY & NJ; https://corpinfo.panynj.gov/documents/2017/

[10] Ibid.

increase by 30 percent to 337,000 by year 2040. To accommodate such demand, the Port Authority plans to develop a new central bus terminal.[11]

Airport Development – All three regional Port Authority commercial airports are redeveloping to accommodate future aviation demand. At LaGuardia, the $8 billion redevelopment of terminals B, C, and D will create a new airport with a vastly improved roadway system. At Newark Liberty International (EWR), a multi-stage redevelopment of Terminal One has begun. And, at JFK, a vision plan has begun to interconnect the terminals, overhaul the roadway system access, enhance AirTrain connectivity, and develop modern cargo facilities. Regarding airport access, the Port Authority plans to extend commuter rail from Newark-Penn Station to EWR, which would facilitate rail into NYC.

Port Development – An array of regional development projects accommodates cargo ship transit, improves landside freight transfers, and facilitates cross harbor freight movement.

- *Ship transit* –Two key development initiatives over the past decade have enabled the Port of New York and New Jersey to increasingly accommodate larger vessels, handle increased cargo volume, and attract new business. In addition to raising the Bayonne Bridge, the Harbor Deepening Project (HDP) deepened 38-miles of navigation channels to 50 feet.
- *Landside transfers* – The Port Authority also developed landside assets that will expand on-dock rail capacity, which will accommodate 1.5 million annual container lifts (the most on the east coast) and eliminate 2.25-million annual truck trips from local highways. Additionally, Truck Management System (TMS) developments enable truckers to reduce at-port turn times by 45 percent (in and out under an hour), which facilitates overall port cargo throughput.
- *Cross harbor movement* – To reduce road congestion and wear/tear, non-highway cross-harbor freight transport alternatives have been narrowed to either a four-mile freight tunnel or expanding an existing railcar float operation. Further study is underway to recommend a preferred alternative.

In summary, many highway transport issues affect the metro NYC/northern New Jersey area. Beyond highway passenger and freight issues, the Port Authority is addressing traffic demand drivers including connectivity issues with other modes. Such connectivity issues include port freight, air travel (both passenger and freight), and transit.

Conclusion

The qualitative MPO outreach discussions of local economic conditions confirmed the quantitative analysis of socioeconomic trends that went into the subsequent econometric growth analysis. The due-diligence outreach found nothing that would alter the quantitative forecasting process. Rather, the outreach collaborated and substantiated the socioeconomic trends with local depictions of where residential and/or business growth was (or was not) occurring and why.

Econometric Growth Analysis

An econometric analysis was conducted to forecast mid-term (ten-year) baseline travel demand on the New Jersey Turnpike and the Garden State Parkway. Historical travel demand was

[11] Ibid.

econometrically estimated via regression equations for groups of toll plazas. Regional socioeconomics and other variables were tested as explanatory factors. With statistically-significant historical equations, independent variable forecasts were applied to the equation coefficients to estimate future travel demand. Eighteen equations were tested for groups of proximate plazas; seven groupings for the New Jersey Turnpike, each for passenger cars (PC) and commercial vehicles (CV); and four for the Garden State Parkway, total volumes. All eighteen equations yielded statistically-significant, logical results. Forecasts were conducted from 2018 through 2028.

Subsequent toll modeling analyses conditionally incorporate these econometrically-derived baseline travel demand forecasts, which additionally consider short-term adjustments and future toll policies and rate structures in estimating future revenue potential.

Econometric Modeling

CDM Smith developed an econometric model for the New Jersey Turnpike and the Garden State Parkway, using multivariate regression analysis to develop mid-term toll-transaction growth forecasts. In the econometric modeling, the objective is to identify an independent variable (or variables) with historical trends that can explain, by way of statistical significance, corresponding traffic trends on the facilities. A resulting correlative relationship between historical trends in traffic and one or more independent variables is, in turn, applied in forecasting future transaction growth, given available and credible forecasts for the independent variable(s).

Regression Testing

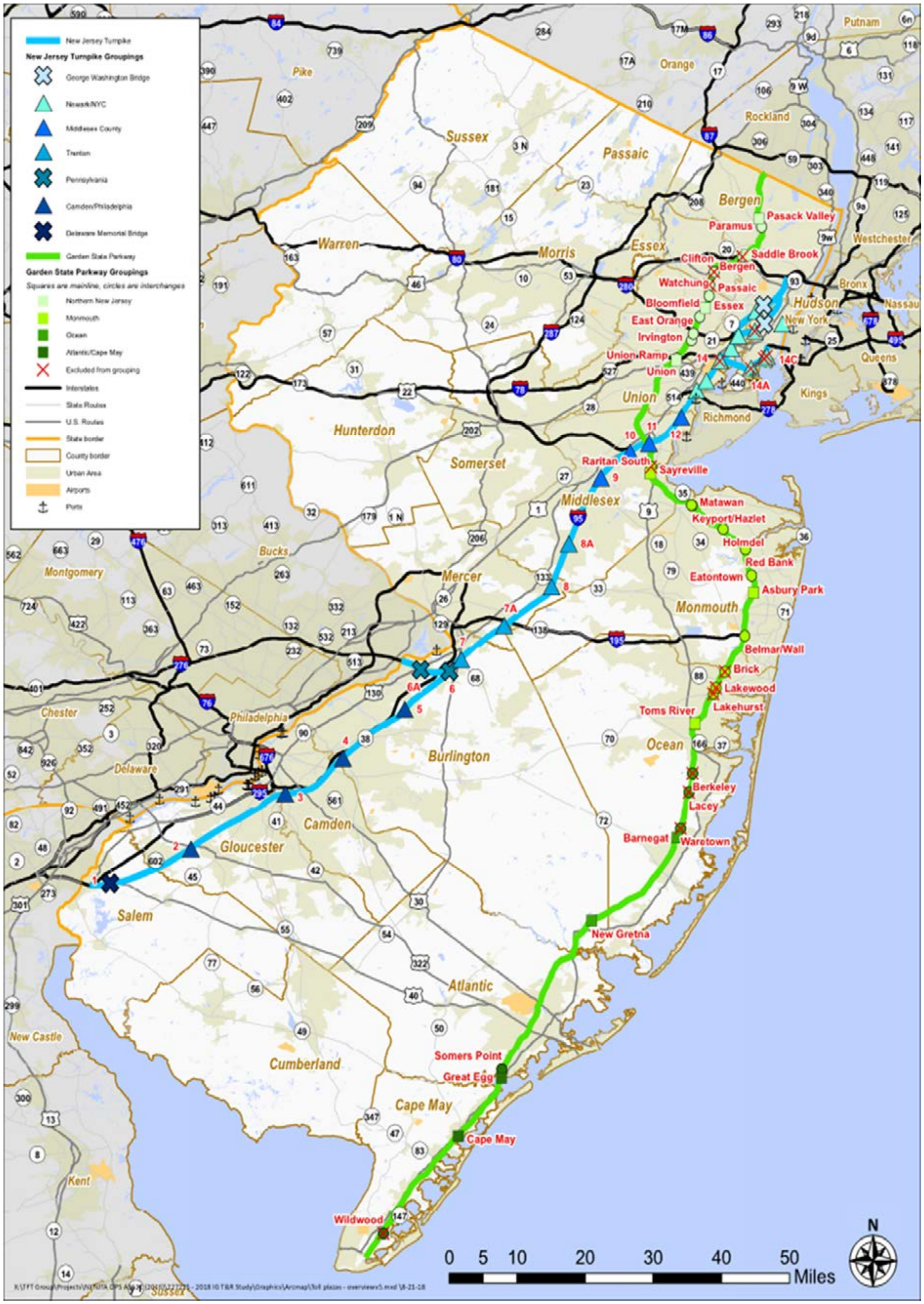
Individual highway travel occurs for various reasons, such as recreation, commuting, trade, etc., and is influenced by factors such as fuel prices, other travel costs, weather, trip urgency, and economics. Aggregate highway travel, however, typically trends closely with regional socioeconomic variables. As such, conceptually-relevant socioeconomic data were hypothesized, compiled, and regression-tested for explaining annual travel demand. These data include population, employment, real gross regional product, and real retail sales, compiled at various geographic levels. In addition to regional socioeconomic variables, average fuel prices, an average annual toll variable, and a dummy variable to reflect the NJTP widening were tested as explanatory factors for historical travel.

Multiple regression equations were tested and evaluated for each plaza grouping to account for the numerous possible combinations of relevant geographies (county clusters) for each possible socioeconomic variable, and combinations with fuel, toll rates, and dummy variable factors. A single "best fit" equation was identified for each plaza grouping and used for forecasting transactions.

Toll Plaza Groupings (Dependent Variables)

Plazas were clustered into the eleven groupings (from 65 individual plazas) to reduce regression testing to a reasonably manageable data universe and to aggregate transactions to minimize possible data outliers at any one individual plaza that may be uninfluenced by sociodemographic trends. Plazas were grouped based on geographic proximity, similarities in historical travel demand patterns, data availability, and other characteristics such as operating history.

For the Garden State Parkway, 35 plazas were divided into four groupings; 30 plazas for the New Jersey Turnpike were divided into seven groupings. These groupings are identified in **Table 4-5** and shown graphically in **Figure 4-4**. Some individual toll plazas were excluded from the groupings due to staggered plaza openings/closings, which, if included, would result in discontinuity and inconsistency



TOLL PLAZA GROUPINGS

FIGURE 4-4

within the time series. Also, some plazas were excluded due to outlier data patterns influenced by non-recurring factors unrelated to sociodemographic trends (e.g., exits 14, 14A, 14B, and 14C in the New Jersey Turnpike due to traffic diverted from the recent Pulaski Skyway closure). Of the 65 individual toll plazas, 47 were included in the groupings. Historical transaction data were used as continuous annual time series from 1992 through 2017 (26 years) for the New Jersey Turnpike, and from 1995 through 2017 (23 years) for the Garden State Parkway.

Table 4-5
Toll Plaza Groupings

	Grouping Name	Incl.	Excl.
GSP	Northern New Jersey	10	3
GSP	Monmouth	9	4
GSP	Ocean	2	3
GSP	Atlantic/Cape May	3	1
NJTP	Delaware Memorial Bridge	1	0
NJTP	Pennsylvania	2	0
NJTP	George Washington Bridge	2	0
NJTP	Camden/Philadelphia	4	0
NJTP	Trenton	4	0
NJTP	Middlesex County	4	0
NJTP	Newark/NYC	6	7

Source: CDM Smith

Socioeconomic Data (Independent Variables)

Data inputs include historical and forecast data for the possible explanatory independent variables, which include socioeconomics for geographies surrounding the facilities (i.e., New Jersey and surrounding states' counties). Data compiled for regression testing included:

- New Jersey Turnpike Authority – historical transactions and revenues (and thus, average annual toll rates)
- United States Census Bureau – historical population
- United States Bureau of Economic Analysis (BEA) – historical employment
- United States Energy Information Administration (EIA) – historical and forecast fuel prices
- Woods & Poole Economics, Inc. – historical and forecast population, employment, real gross regional product (GRP), and real retail sales

Socioeconomic data were tested as an explanatory variable at various combinations of counties surrounding the toll plazas groupings in conjunction with non-socioeconomic data, including the average annual toll rate, fuel prices, and a dummy variable to reflect the widening of the New Jersey Turnpike that was completed in 2015.

Regression Caveats

Econometrically-derived mid-term demand forecasts served as basis for further transaction and toll revenues estimates. Growth forecasts from the regressions do not explicitly consider route choice assumptions, the existing roadway network and planned improvements, existing and anticipated roadway capacities, origin-destination pairing, peak and directional factors, or traffic diversions. As such, the regression-based forecast growth rates are conditionally incorporated into further traffic and revenue modeling.

As this regression analysis attempted to estimate aggregate travel demand, the equations cannot account for all potentially influencing factors, especially any small-scale, qualitative/difficult-to-quantify, and/or irregularly occurring factors. Also, a regression analysis is incapable of forecasting unprecedented factors (positive or negative influence) such as catastrophic climate change, health epidemics, terrorism, natural disasters, or any other significantly destabilizing factors.

Forecasts are estimates, limited by the availability and robustness of input data, both historical and projected. Data unavailability, discrepancies, aberrations, and inaccuracies can hinder the robustness and results of econometric forecasting.

Regression Equations and Forecasting

A final regression equation was estimated for each plaza grouping, relating historical annual travel demand with a regional socioeconomic variable, and mostly with average annual tolls and/or a dummy variable. A regression summary for the groupings is provided in **Table 4-6**. After testing the compiled socioeconomics at various regional county clusters, it was determined that real GRP was the best-suited explanatory variable for all equations. In most equations, the average annual toll rates for the groupings were statistically significant and for the groupings on the New Jersey Turnpike for passenger cars, the dummy variable for widening was statistically significant. Fuel prices were irrelevant in all equations.

Geographically, regional combinations of contiguous counties in New Jersey, Pennsylvania, Delaware, and New York served as logical and statistically-acceptable catchment areas for regional real GRP relating to historical transactions. Although each equation has a unique county combination, anchored around the respective plaza groupings, the counties included in each equation are along and adjacent to the New Jersey Turnpike and Garden State Parkway. While the catchment areas regionalize socioeconomic variables for relationships with travel demand, the catchment areas should not imply that travel demand is only from those geographies, but rather that the catchment is a logical, statistically-valid representation for the aggregate demand.

All eighteen equations exhibited sensible relationships with acceptable statistics; the overall equations' robustness, measured by the adjusted R^2, are between 92.2 percent and 98.5 percent, with the individual coefficients' statistically valid with correct directional relationships (i.e., positive relationships with regional GRP, negative with average toll rates, positive with dummy variable NJTP widening). Such relatively high statistical fits indicate good relationships.

Table 4-6
Regression Summary

		Plaza Groupings	Results		Variables			Geographies (Counties)		
		Name/Area	Type	Adj. R2	Socio	Toll	Dummy	NJ	Other	Total
GSP	Total	Northern New Jersey	Ln-Linear	96.1%	GRP	Incl.	Excl.	9	1	10
		Monmouth	Ln-Linear	96.7%	GRP	Incl.	Excl.	5	0	5
		Ocean	Ln-Linear	92.7%	GRP	Incl.	Excl.	3	0	3
		Atlantic/Cape May	Ln-Linear	94.1%	GRP	Incl.	Excl.	2	2	4
NJTP	Passenger Cars	Delaware Memorial Bridge	Ln-Linear	96.4%	GRP	Excl.	Incl.	7	0	7
		Pennsylvania	Ln-Linear	97.9%	GRP	Incl.	Incl.	3	0	3
		George Washington Bridge	Ln-Linear	96.4%	GRP	Incl.	Excl.	5	3	8
		Camden/Philadelphia	Ln-Linear	98.0%	GRP	Excl.	Incl.	8	0	8
		Trenton	Ln-Linear	97.1%	GRP	Incl.	Incl.	7	0	7
		Middlesex County	Ln-Linear	98.5%	GRP	Incl.	Excl.	12	0	12
		Newark/NYC	Ln-Linear	96.2%	GRP	Incl.	Excl.	6	5	11
	Commercial Vehicles	Delaware Memorial Bridge	Ln-Linear	97.0%	GRP	Incl.	Excl.	10	4	14
		Pennsylvania	Ln-Linear	97.1%	GRP	Incl.	Excl.	10	1	11
		George Washington Bridge	Ln-Linear	92.2%	GRP	Incl.	Excl.	4	2	6
		Camden/Philadelphia	Ln-Linear	95.6%	GRP	Incl.	Excl.	3	1	4
		Trenton	Ln-Linear	97.0%	GRP	Incl.	Excl.	5	0	5
		Middlesex County	Ln-Linear	97.0%	GRP	Incl.	Excl.	6	0	6
		Newark/NYC	Ln-Linear	96.2%	GRP	Incl.	Excl.	5	0	5

Source: CDM Smith

With the final equations, regionalized real GRP forecasts were applied to the regression coefficients to estimate future mid-term travel demand. Forecasts for the average annual toll rates were assumed to remain at 2017 levels through the ten-year analysis horizon. Real GRP forecasts were obtained from Woods & Poole Economics, Inc. at a detailed county level. Woods & Poole statewide real GRP data for New Jersey was compared to that from Moody's Analytics, with both exhibiting very similar mid-term growth forecasts.

Demand Growth Results

Econometrically-derived travel demand forecasts for the New Jersey Turnpike and the Garden State Parkway are summarized in **Table 4-7** below, based on applied forecasts for the regional real GRP, constant average toll rates, and constant dummy variables, as applicable, to the respective regression coefficients. Compound average growth rates (CAGR) for the plaza grouping transactions are shown for incremental historical timeframes as comparative context, demarcated by 1992, 1995, 2000, 2007, and 2012, which are generally inflection points in the historical series' data. Additionally, the entire historical CAGR, from 1992 or 1995 depending on the facility, are also provided for context. The last column in Table 4-7 presents the average growth over the entire 2018 through 2028 forecast period.

Table 4-7
Transaction Growth Summary (CAGR)

		Plaza Groupings	History (Increments)					History (Full)		Forecast
		Name/Area	1992-1995	1995-2000	2000-2007	2007-2012	2012-2017	1992-2017	1995-2017	2018-2028
GSP	Total	Northern New Jersey	#N/A	1.6%	0.7%	-1.2%	1.5%	#N/A	0.6%	0.9%
		Monmouth	#N/A	2.9%	1.0%	-1.5%	1.4%	#N/A	0.9%	1.3%
		Ocean	#N/A	3.1%	1.8%	-3.1%	0.6%	#N/A	0.7%	1.4%
		Atlantic/Cape May	#N/A	2.4%	1.8%	-2.7%	1.4%	#N/A	0.8%	1.1%
NJTP	Passenger Cars	Delaware Memorial Bridge	1.3%	1.5%	2.3%	-0.9%	2.6%	1.4%	1.5%	1.2%
		Pennsylvania	2.5%	3.4%	2.3%	-2.2%	3.0%	1.7%	1.6%	1.7%
		George Washington Bridge	0.2%	2.0%	2.0%	-1.7%	4.2%	1.5%	1.6%	1.7%
		Camden/Philadelphia	1.7%	3.1%	4.3%	-1.7%	4.8%	2.6%	2.7%	1.9%
		Trenton	3.8%	3.0%	2.3%	-1.9%	4.7%	2.2%	2.0%	2.0%
		Middlesex County	1.9%	2.4%	2.5%	-2.3%	1.9%	1.3%	1.2%	1.7%
		Newark/NYC	0.3%	2.4%	1.9%	-1.5%	2.6%	1.3%	1.4%	1.5%
	Commercial Vehicles	Delaware Memorial Bridge	2.6%	5.1%	3.8%	-6.4%	3.1%	1.7%	1.5%	2.3%
		Pennsylvania	5.1%	4.0%	3.8%	-5.5%	3.4%	2.0%	1.5%	2.3%
		George Washington Bridge	0.9%	3.1%	3.1%	-2.9%	1.9%	1.4%	1.4%	1.7%
		Camden/Philadelphia	4.9%	7.7%	4.6%	-7.2%	5.0%	2.8%	2.6%	2.9%
		Trenton	5.6%	5.0%	1.7%	-5.0%	3.8%	1.8%	1.3%	2.3%
		Middlesex County	3.0%	3.4%	1.9%	-3.5%	1.8%	1.2%	1.0%	1.7%
		Newark/NYC	1.0%	3.3%	2.0%	-2.6%	1.7%	1.2%	1.2%	1.5%
Totals		GSP Total	#N/A	2.2%	0.9%	-1.5%	1.4%	#N/A	0.8%	1.1%
		NJTP Passenger Cars	1.3%	2.5%	2.3%	-1.8%	3.0%	1.5%	1.5%	1.7%
		NJTP Commercial Vehicles	2.4%	3.8%	2.4%	-3.7%	2.3%	1.4%	1.3%	1.8%
		NJTP Total	1.4%	2.7%	2.3%	-2.1%	2.9%	1.5%	1.5%	1.7%
		NJTP and GSP Total	#N/A	2.4%	1.4%	-1.7%	1.9%	#N/A	1.0%	1.3%

Source: CDM Smith

Average annual growth rates vary by facility, toll plaza grouping, and vehicle category (hence, subcategorizing the facilities as conducted). Generally, the Garden State Parkway is forecasted to exhibit relatively slower average growth than the New Jersey Turnpike, with the commercial vehicles forecast to grow relatively faster than passenger cars on that facility. Also, the plaza groupings in the northern half of the state (e.g., nearer to NYC) are forecast to have transactions growth relatively slower than plaza groupings in the southern half of the state, regardless of facility or vehicle type.

Regarding historical comparability, generally (barring a few plaza-grouping exceptions), the forecast growth is relatively faster than the entire historical timeframe. However, due to the major recession and concurrent major toll rate increases during that timeframe and recovery, there was a universal decline in transactions from 2007 through 2012, such that the entire time series (either 1992 or 1995 through 2017) is tempered and diverges from an uninterrupted growth trajectory. Since 2012, in the post-recessionary/recovery period, average growth exceeded the longer-term historical trends. Forecast growth is projected to generally be slower than the most recent 2012-2017 average growth.

In conclusion, the transaction forecasts based on multivariate equations with real GRP and average annual toll rates statistically explaining historical transaction data are projected to closely parallel overall longer-term historical growth patterns, albeit slightly faster. However, the mid-term ten-year forecasts are relatively slower than the most-recent post-recessionary growth since 2012.

A refined traffic and revenue analysis is the last component of the forecasting analysis. Growth rates developed from this econometric regression analysis are conditionally applied to further traffic and revenue modeling. Some post-processing adjustments to the econometric forecasts (e.g., converging 2018 forecasts with actual to-date observations, etc.) prior to further modeling are expected, which consider additional factors such as mid-term roadway capacities, etc.

Chapter 5

Transaction and Gross Toll Revenue Forecasts

Traffic and gross toll revenue estimates are provided in this chapter for the New Jersey Turnpike and the Garden State Parkway, separately, and for the total system. These forecasts extend from 2018, which include six months of actual transaction and revenue data, through 2028. The forecasts developed for this study take into account the underlying normal growth forecasts identified in Chapter 4, estimated impacts of committed roadway improvements, and continued growth in the E-ZPass market share.

Committed Roadway Improvements

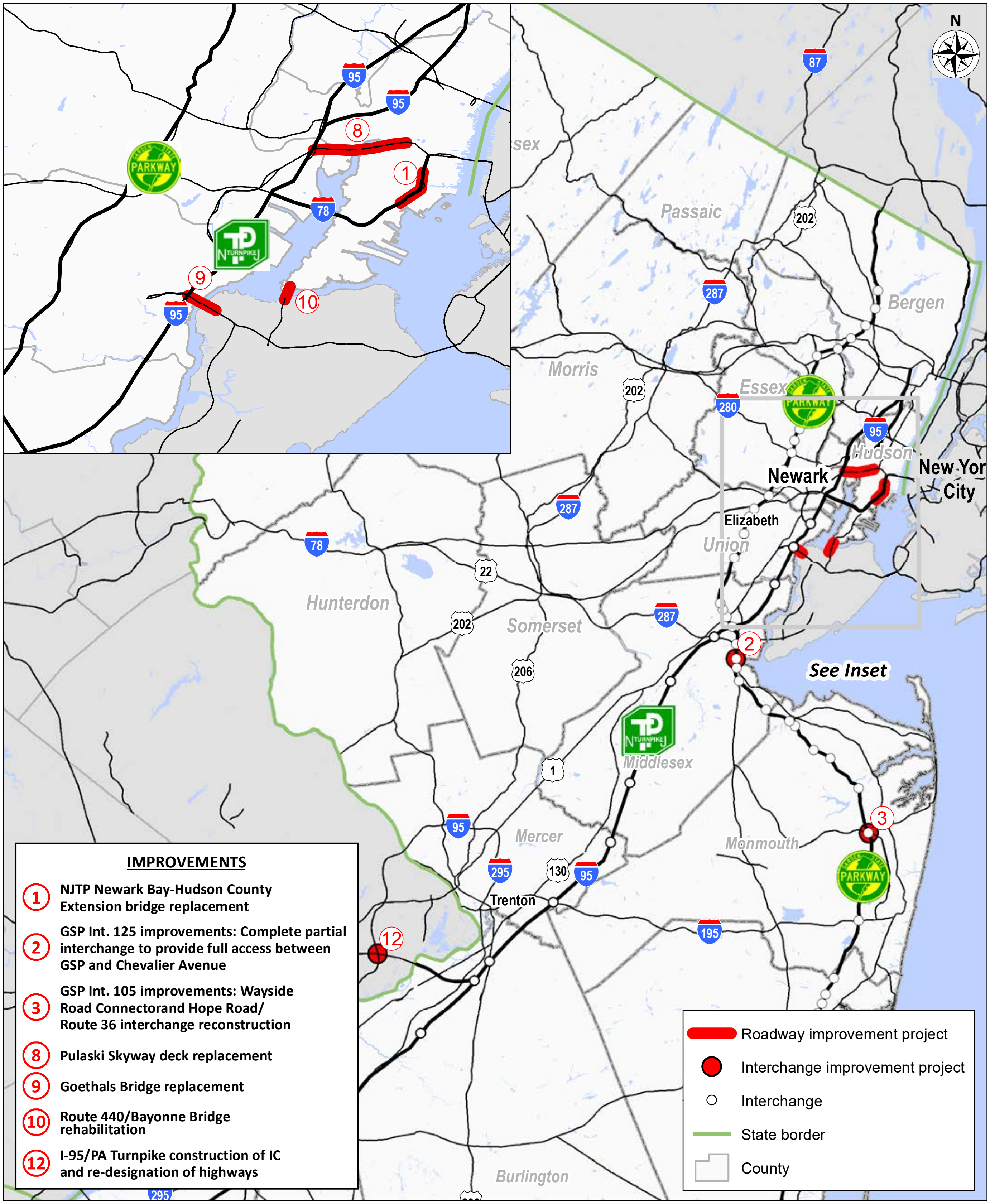
CDM Smith identified the major committed roadway projects that were taken into consideration for this study through discussions with the NJTA staff and by reviewing the following documents:

1. North Jersey Transportation Authority (NJTPA) FY 2018-2021 Transportation Improvement Program (TIP);
2. Delaware Valley Regional Planning Commission (DVRPC) FY 2018-2021 TIP For New Jersey;
3. DVRPC FY 2017-2020 TIP for Pennsylvania;
4. South Jersey Transportation Planning Organization (SJTPO) FY 2018-27 TIP;
5. Draft FY 2018 - 2027 New Jersey Statewide Transportation Improvement Program; and
6. 2018 New Jersey Turnpike Authority (NJTA) Capital Project and Investment Plan.

The roadway improvement projects listed in **Table 5-1** and pictured in **Figures 5-1** and **5-2** were reviewed to determine their potential for impacting transactions and toll revenue on the Turnpike or Parkway, either permanently or temporarily. The listed improvements fall into the following four broad categories. The improvement numbers refer to the number shown in Table 5-1 and Figures 5-1 and 5-2.

7. New capacity/roadway widening (improvement number 4);
8. Improved interchanges (improvement numbers 2, 3, 5, 6, and 11);
9. New interchanges (improvement number 12); and
10. Bridge improvements (improvement numbers 1, 7, 8, 9, and 10).

Included in these roadway improvement projects are five existing interchanges (36, 37, 38, 105, and 125) on the Parkway that will have new ramps constructed that will provide for improved or previously missing movements. There will also be a new major interchange constructed, creating a direct, high-speed connection north of Philadelphia between I-276 (PA Turnpike) and a re-designated



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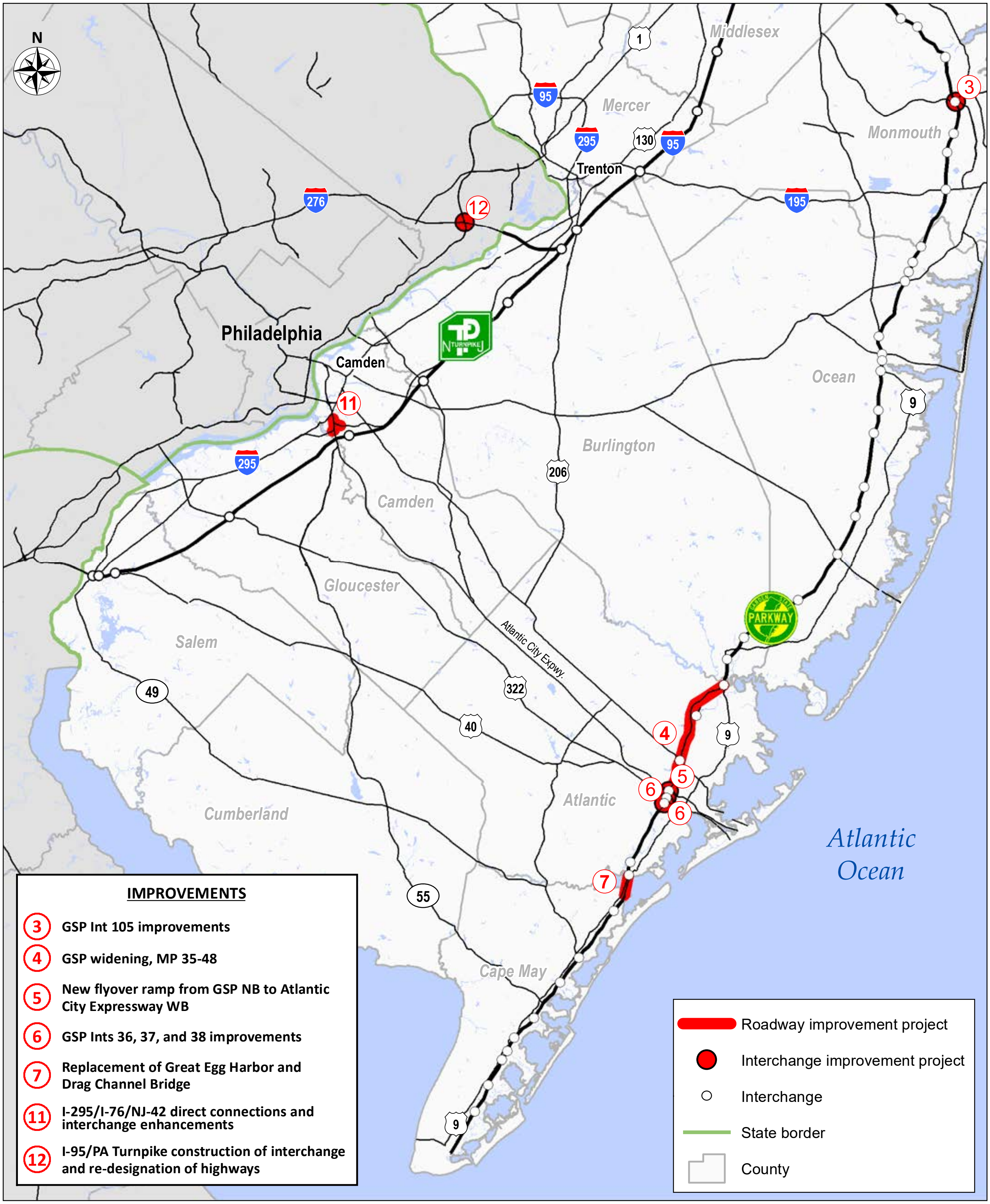
ROADWAY IMPROVEMENTS: NORTHERN NEW JERSEY

FIGURE 5-1



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ROADWAY IMPROVEMENTS: SOUTHERN NEW JERSEY

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FIGURE 5-2

Table 5-1
Summary of Major Committed Roadway Improvements Considered for the Transaction and Toll Revenue Analysis

Improvement Number	Location by Interchange (Int) or Milepost (MP)	Description	Actual or Assumed Start Date	Assumed Completion Date
New Jersey Turnpike				
1	Newark Bay-Hudson County Extension	Replacement of the bridge deck in both directions	2016	2020
Garden State Parkway				
2	Int 125	Complete partial interchange to provide full access between Parkway and Chevalier Avenue	2016	2018
3	Int 105	New southbound connection from parkway to Wayside Road, addition of second northbound deceleration lane from Parkway to IC 105 and reconstruction of Hope Road NJ-36 intersection	2013	2018
4	MP 35-48	Widening of Garden State Parkway, Phase 3; new lanes already open in both directions north of MP 40	2014	2018
5	Int 38	New flyover ramp from Parkway northbound to Atlantic City Expressway westbound	2020	2022
6	Ints 36, 37, and 38	Addition of deceleration lane on southbound Parkway and acceleration lane on Tilton Road at IC 36 and separation of traffic entering Parkway at IC 38 from traffic exiting Parkway at IC 37	2014	2018
7	Great Egg Harbor and Drag Channel Bridge (MP 27-28)	Replacement of southbound span and rehabilitation of northbound span	2013	2019
Other Roadways				
8	Pulaski Skyway	Replacement of the bridge deck in both directions	2014	2018
9	Goethals Bridge	Replacement of Goethals Bridge on I-278 to include separate eastbound and westbound roadway decks	2014	2018
10	Route 440/ Bayonne Bridge	Rehabilitate to include 12-foot lanes, median safety divider, emergency shoulders, acceleration and deceleration lanes, walkway/bikeway, transit potential, and improve navigational clearance	2014	2018
11	I-295/I-76/NJ-42	Construction of direct connections and interchange enhancements	2014	2024
12	I-95/Pennsylvania Turnpike	Construction of interchange and re-designation of highways	2009	2018

Sources: NJTPA FY 2018-2021 TIP
DVRPC FY 2016-2019 TIP for New Jersey
DVRPC FY 2017-2020 TIP for Pennsylvania
SJTPO FY 2018-2027 TIP
Draft FY 2018-2027 Statewide TIP
NJTA 2018 Capital Project and Investment Plan

I-95. During the forecast period of this study, only part of the new interchange will be completed. By the end of the 2018 construction season, the PA Turnpike westbound to I-95 re-designated I-95. During the forecast period of this study, only part of the new interchange will be completed. By the end of the 2018 construction season, the PA Turnpike westbound to I-95 southbound ramps and the I-95 northbound to PA Turnpike eastbound ramp will be completed. No additional movements are assumed during the forecast period. This project will have a small negative effect on VMT and transactions over time.

An additional notable project is the Garden State Parkway widening program, which has been ongoing since 2008 and is scheduled to be completed in 2018. When complete, the project will have added a total of 90 lane miles by constructing a third travel lane and full-width shoulders in each direction between mileposts 35 and 80. The first phase of the project, between mileposts 63 and 80, was completed and opened to traffic in May 2011. Phase 2 (mileposts 48 to 63) opened in two segments; the lanes between mileposts 52 and 63 opened in 2013, while the four miles at the southern end of phase 2 could not open to traffic until the rehabilitation of the Bass River Bridge was completed in 2015. Phase 3 work, which extends between mileposts 35 to 48 (number 6 in Figure 5-2), began in 2014. New lanes are open in both directions north of milepost 40, and remaining work on the last few miles is scheduled to be completed and open to traffic by the end of 2018. This construction will provide a small short term positive impact on Parkway traffic.

A final notable project is the Pulaski Skyway rehabilitation. In mid-April 2014 the Pulaski Skyway was closed to eastbound/northbound (toward Jersey City and the Holland Tunnel) traffic to allow for replacement of the bridge deck of the entire 3.5-mile roadway. After more than four years, the Skyway was fully reopened to bi-directional traffic in July 2018. Slight negative impacts are expected on Turnpike transactions as a result.

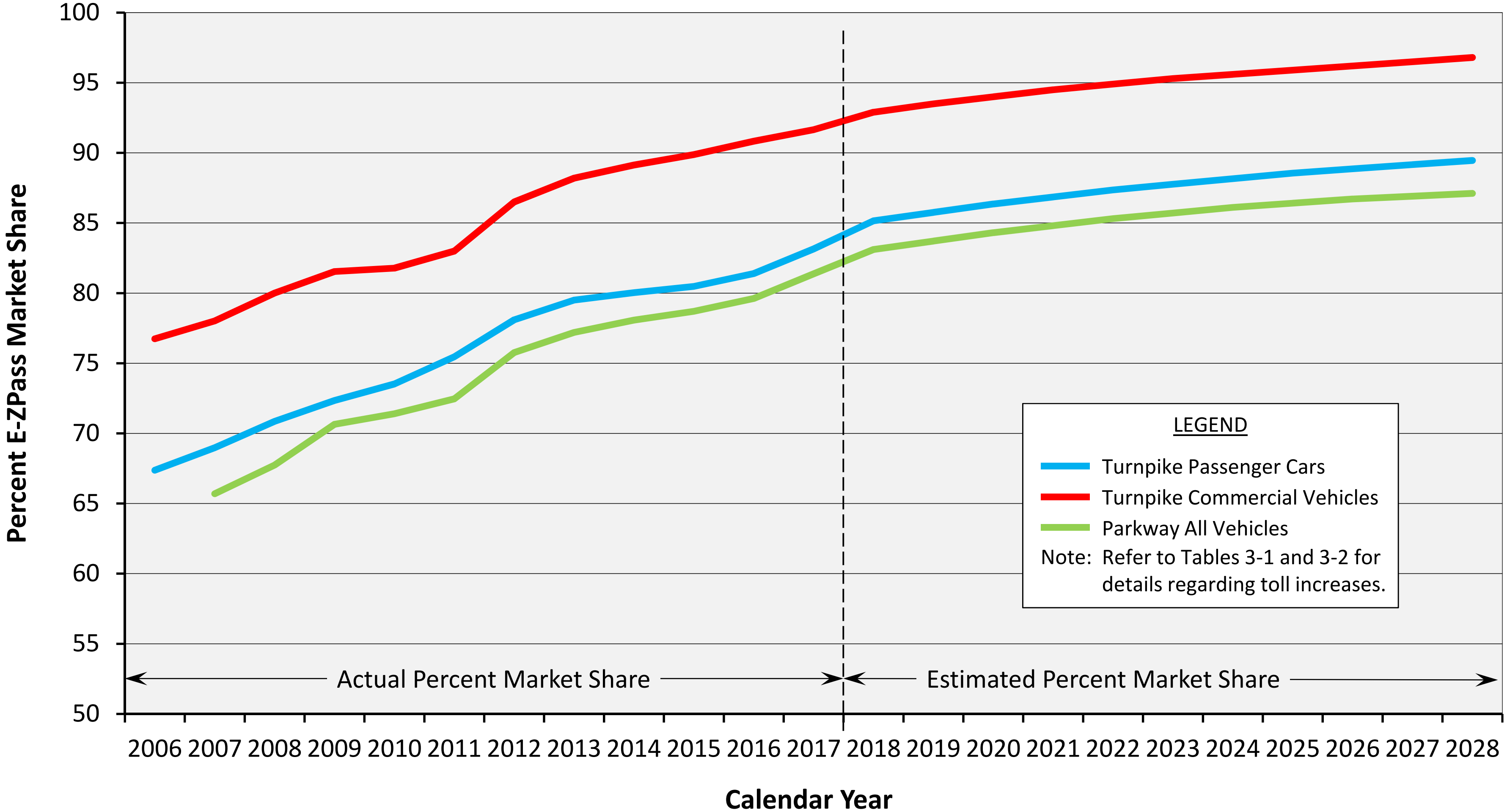
Estimated E-ZPass Market Share

Another key element in developing estimates of transactions and toll revenue is the future market share for E-ZPass. CDM Smith conducted a detailed review of historical growth trends in E-ZPass market share over the last several years. Table 3-11 summarizes those historical trends through the end of 2017. In 2017, the E-ZPass market share on the Turnpike totaled 83.2 percent for passenger cars, 91.6 percent for commercial vehicles, and 84.2 percent for all vehicles. 2017 E-ZPass market share on the Parkway totaled 81.4 percent for all vehicles.

Figure 5-3 shows the historical trends in E-ZPass market share, as well as estimated future market share through 2028. Separate estimates have been developed for Turnpike passenger cars and commercial transactions and for total Parkway transactions. By 2028, the E-ZPass market share on the Turnpike is estimated to reach about 89.5 percent for passenger cars and 96.8 percent for commercial vehicles. The E-ZPass market share for Parkway vehicles is estimated to reach 87.1 percent in 2028. In all cases, E-ZPass market share is expected to increase in every year of the forecast period, but at an increasingly slower pace than that experienced over the last several years.

Transaction and Gross Toll Revenue Forecasts

Annual estimates of toll transactions and gross toll revenue were developed by applying the estimated roadway improvement impacts (discussed previously in this chapter) to the underlying normal growth rates discussed in Chapter 4. Finally, the resulting travel demand was divided into its



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ACTUAL AND ESTIMATED PERCENT E-ZPASS MARKET SHARE

FIGURE 5-3

respective cash and E-ZPass market segments so that the differing average toll rates for each could be applied. As mentioned earlier, no future toll increases have been assumed during the forecast period.

Table 5-2 identifies the resulting toll transaction and toll revenue growth rates. The growth rates for 2017 are based on actual data and 2018 figures include seven months of actual data. The low growth rates estimated for Turnpike passenger cars in 2018 and 2019 results from the removal of the positive impact the Pulaski Skyway construction had on Turnpike passenger car traffic and revenue. Given that construction was completed in mid-2018, half of the negative impact would reduce 2018 traffic and revenue and half of the impact would reduce 2019 traffic and revenue. Since the Pulaski Skyway prohibits heavy commercial vehicles, this only affects passenger cars during this period. Beginning in 2020, traffic and revenue resumes a normal growth trend averaging about 1.6 percent annually for Turnpike passenger cars. The only divergence from this trend results from a slight bump (of approximately 0.2 percent) every four years due to the additional leap year day (in 2020, 2024, and 2028).

As discussed in Chapter 3, a revenue recognition change was implemented for the Turnpike in March 2018; it impacted nearly all of 2017 revenue data. This affected the mix of passenger car versus commercial vehicle revenue resulting in the 4.6 percent decrease in Turnpike 2017 commercial toll revenue. Through July 2018, commercial traffic and revenue has exhibited especially strong growth and this is reflected in the full-year estimates. About 1.0 to 1.5 percent of the increase in 2018 is the result of recovery from the loss of traffic and revenue during the Delaware River Toll Bridge closure in early 2017. But, overall growth has remained strong after that impact is accounted for. As shown in Table 5-2, full year 2018 commercial traffic and revenue is expected to increase by 5.0 and 5.6 percent, respectively. Beyond 2018, CDM Smith has assumed a more moderated rate of normal growth averaging 1.7 percent. Over the previous five years, actual commercial vehicle toll revenue growth has averaged about 3.0 percent, but some of that higher growth should be attributed to a continued recovery from the Great Recession. As with the forecasts for passenger cars, the additional leap year day is also factored into the forecasts in 2020, 2024, and 2028.

The impacts CDM Smith has observed (and recovery from those impacts) for Pulaski Skyway construction and the closure of the Delaware River Toll Bridge in early 2017 do not impact traffic and revenue on the Parkway. However, beginning July 23, 2018, conversion of Parkway Interchange 145 from two-way toll collection to one-way toll collection does have an impact which affects both 2018 and 2019. As shown, total toll transactions, as a result of the one-way conversion, are estimated to decrease by 0.8% in 2018 and by 1.4% in 2019. Because the toll rate at the new one-way Interchange 145 toll plaza is now double the previous rate, Parkway toll revenue continued to grow in both 2018 and 2019 (by 0.8% and 0.6%, respectively). Over the entire forecast period from 2018 to 2028, CDM Smith estimates that traffic growth will be 0.9 percent, while revenue growth will average 1.1 percent.

When the Turnpike and Parkway are combined, the Total System rate of growth between 2018 and 2028 amounts to 1.1 percent for toll transactions and 1.4 percent for toll revenue. Total System toll transaction growth is lower than toll revenue growth because Parkway transactions account for a much greater proportion of total transactions versus its contribution to total toll revenue. Thus, the lower growth estimated for the Parkway has a bigger impact on total transaction growth than it does on total toll revenue growth.

Table 5-2
Estimated Annual Toll
Transaction and Gross Toll Revenue Growth Rates
New Jersey Turnpike Authority

Percent Change Over Previous Year

Annual Toll Transactions

Year	Turnpike Passenger Cars	Turnpike Commercial Vehicles	Turnpike Total	Parkway Total	System Total
2016 (1,2)	---	---	---	---	---
2017 (1,3)	1.9%	2.6%	2.0%	0.8%	1.3%
2018 (1,4,5)	0.1	5.0	0.7	(0.8)	(0.2)
2019 (4,5)	(0.9)	1.7	(0.6)	(1.4)	(1.1)
2020 (2)	1.8	2.0	1.8	1.4	1.6
2021	1.4	1.4	1.4	0.9	1.1
2022	1.6	1.7	1.6	1.1	1.3
2023	1.6	1.7	1.6	1.1	1.3
2024 (2)	1.9	1.9	1.9	1.3	1.6
2025	1.3	1.4	1.4	0.8	1.0
2026	1.6	1.6	1.6	1.1	1.3
2027	1.6	1.6	1.6	1.1	1.3
2028 (2)	1.8	1.9	1.9	1.3	1.5

Annual Toll Revenue

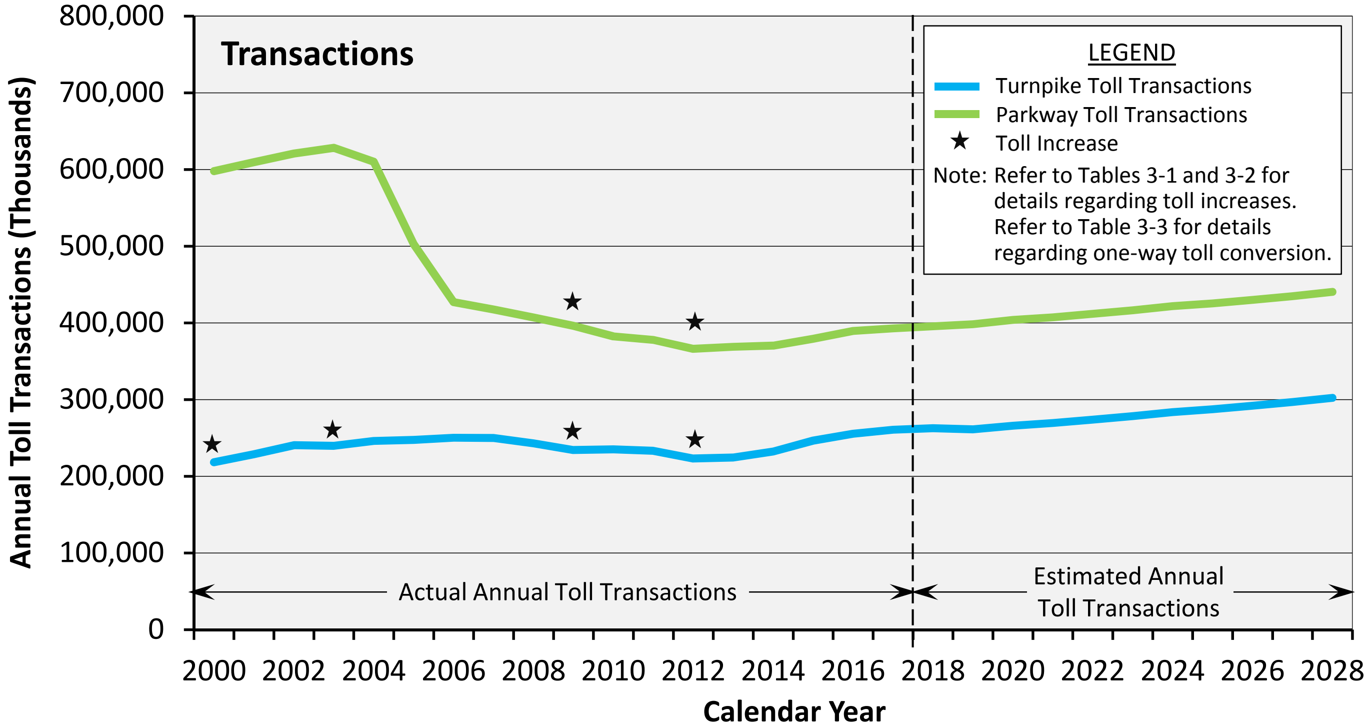
Year	Turnpike Passenger Cars	Turnpike Commercial Vehicles	Turnpike Total	Parkway Total	System Total
2016 (1,2)	---	---	---	---	---
2017 (1,3)	3.1%	(4.6%)	0.6%	0.5%	0.6%
2018 (1,4,5)	(0.2)	5.6	1.5	0.8	1.4
2019 (4,5)	(0.5)	1.6	0.2	0.6	0.3
2020 (2)	1.8	1.9	1.8	1.4	1.7
2021	1.3	1.4	1.4	0.9	1.2
2022	1.6	1.7	1.6	1.1	1.5
2023	1.6	1.7	1.6	1.1	1.5
2024 (2)	1.8	1.9	1.9	1.4	1.7
2025	1.3	1.4	1.3	0.9	1.2
2026	1.6	1.6	1.6	1.1	1.5
2027	1.6	1.6	1.6	1.1	1.5
2028 (2)	1.8	1.9	1.8	1.4	1.7

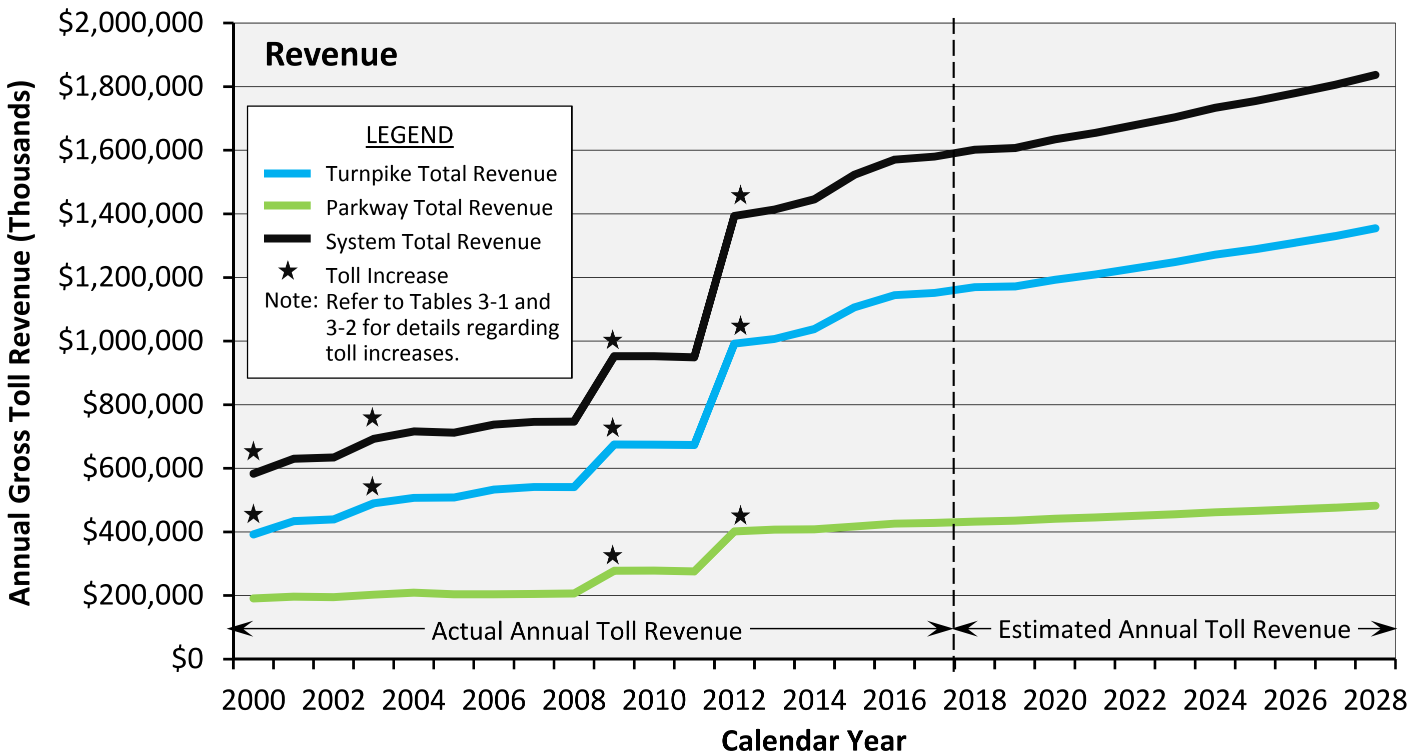
(1) Data through July 2018 is actual.
(2) Leap Year, includes 29 days in February.
(3) Reflects Delaware River Turnpike Bridge closed to traffic from January 20 through March 9, 2017.
(4) Reflects Pulaski Skyway opening to traffic in both directions beginning July 2, 2018, of which the negative impacts on growth will be reflected in both 2018 and 2019.
(5) Reflects one-way conversion impacts of Parkway Interchange 145 beginning July 23, 2018, of which the negative impacts on growth will be reflected in both 2018 and 2019.

Table 5-3 shows the resulting toll transaction and revenue estimates for Turnpike passenger cars, commercial vehicles, total Parkway, and the Total System through 2028. As noted, actual transactions and revenue are included through July 2018. As shown, total Turnpike toll transactions are expected to increase from 262.6 million in 2018 to 302.3 million by 2028. Total Parkway toll transactions are estimated to increase from 389.7 million to about 424.8 million over the same period. For the Total System, toll transactions amount to 652.2 million in 2018 and are expected to rise to 727.1 million in 2018, an average annual increase of 1.1 percent.

Total Turnpike toll revenue is estimated to increase from nearly $1,169.6 million in 2018 to just over $1,354.5 million by 2028. Parkway toll revenue is forecast to increase from almost $431.7 million to about $481.4 million between 2018 and 2028. For the Total System, toll revenue is estimated to amount to $1,601.3 million in 2018 and increase to just over $1,835.9 million by 2028, an average annual increase of 1.4 percent.

Figure 5-4 shows the historical and forecast toll transactions and revenue for the Turnpike and Parkway from 2000 through 2028. Prior year toll increases are noted. It should also be reiterated that the significant toll transaction decreases experienced on the Parkway between 2004 and 2010 are the result of the conversion of two-way toll collection to one-way toll collection (see Table 3-3 for the conversion schedule). No additional toll plaza conversions or toll increases are assumed during the forecast period.





ACTUAL AND ESTIMATED ANNUAL TOLL TRANSACTIONS AND GROSS TOLL REVENUE

FIGURE 5-4

Table 5-3
Estimated Annual Toll
Transactions and Gross Toll Revenue
New Jersey Turnpike Authority

All Values in Thousands

Annual Toll Transactions

	Turnpike				
Year	Passenger Cars	Commercial Vehicles	Turnpike Total	Parkway Total	System Total
2016 (1,2)	223,634	31,860	255,494	389,609	645,103
2017 (1,3)	227,979	32,686	260,665	392,895	653,560
2018 (1,4,5)	228,254	34,322	262,576	389,662	652,238
2019 (4,5)	226,213	34,895	261,108	384,049	645,157
2020 (2)	230,260	35,577	265,837	389,421	655,258
2021	233,437	36,088	269,525	392,783	662,308
2022	237,252	36,699	273,951	397,121	671,072
2023	241,116	37,315	278,431	401,494	679,925
2024 (2)	245,625	38,032	283,657	406,902	690,559
2025	248,940	38,564	287,504	410,300	697,804
2026	252,900	39,197	292,097	414,731	706,828
2027	256,922	39,840	296,762	419,209	715,971
2028 (2)	261,661	40,595	302,256	424,795	727,051

Annual Toll Revenue

	Turnpike				
Year	Passenger Cars	Commercial Vehicles	Turnpike Total	Parkway Total	System Total
2016 (1,2)	$776,337	$368,221	$1,144,558	$426,105	$1,570,663
2017 (1,3)	800,478	351,260	1,151,738	428,157	1,579,895
2018 (1,4,5)	798,675	370,907	1,169,582	431,669	1,601,251
2019 (4,5)	794,819	376,918	1,171,737	434,163	1,605,900
2020 (2)	808,837	384,052	1,192,889	440,409	1,633,298
2021	819,575	389,602	1,209,177	444,357	1,653,534
2022	832,543	396,218	1,228,761	449,412	1,678,173
2023	845,758	402,880	1,248,638	454,480	1,703,118
2024 (2)	861,218	410,617	1,271,835	460,722	1,732,557
2025	872,486	416,368	1,288,854	464,661	1,753,515
2026	886,091	423,199	1,309,290	469,771	1,779,061
2027	899,907	430,142	1,330,049	474,937	1,804,986
2028 (2)	916,224	438,292	1,354,516	481,360	1,835,876

(1) Data through July 2018 is actual.
(2) Leap Year, includes 29 days in February.
(3) Reflects Delaware River Turnpike Bridge closed to traffic from January 20 through March 9, 2017.
(4) Reflects Pulaski Skyway opening to traffic in both directions beginning July 2, 2018, of which the negative impacts on growth will be reflected in both 2018 and 2019.
(5) Reflects one-way conversion impacts of Parkway Interchange 145 beginning July 23, 2018, of which the negative impacts on growth will be reflected in both 2018 and 2019.

Disclaimer

CDM Smith used currently accepted professional practices and procedures in the development of these traffic and revenue forecasts. However, as with any forecast, it should be understood that differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of the forecasters. In formulating the forecasts, CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the New Jersey Turnpike Authority (NJTA). CDM Smith also relied upon the reasonable assurances of independent parties and is not aware of any material facts that would make such information misleading.

CDM Smith made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue forecasts that must be considered as a whole; therefore, selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit of partial information extracted from this report.

All forecasts and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple agencies, including NJTA. These forecasts and projections may not be indicative of actual or future values and are therefore subject to substantial uncertainty. Future developments, economic conditions, and changes in travel behavior resulting from advances in automotive technology cannot be predicted with certainty and may affect the forecasts or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate or projection contained within this report.

While CDM Smith believes that the projections or other forward-looking statements contained within the report are based on reasonable assumptions as of the date of this letter, such forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of that study, CDM Smith will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to socioeconomic and demographic forecasts, proposed residential or commercial land use development projects, and/or potential improvements to the regional transportation network.

CDM Smith is not, and has not been, a municipal advisor as defined in federal law (the Dodd Frank Bill) to NJTA and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to NJTA with respect to the information and material contained in this report. CDM Smith is not recommending and has not recommended any action to NJTA. NJTA should discuss the information and material contained in this report with any and all internal and external advisors that it deems appropriate before acting on this information.

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APPENDIX C

REPORT OF CONSULTING ENGINEER

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CONSULTING ENGINEER'S REPORT

New Jersey Turnpike Authority

Turnpike Revenue Bonds, Series 2021 A and 2021 B

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Date Prepared: January 10, 2021

CONSULTING ENGINEER'S REPORT

New Jersey Turnpike Authority

Turnpike Revenue Bonds – Series 2021 A and 2021 B

INTRODUCTION

As Consulting Engineer to the New Jersey Turnpike Authority (Authority), HNTB Corporation is pleased to submit this engineering report in support of the Authority's ongoing capital improvement programs (CIPs). In this report, we provide our professional opinions of the Authority's operations and maintenance performance, descriptions and status of the projects included in the current CIPs. The projects that are included in the CIPs generally serve to repair or replace existing capital assets and provide new assets to improve and expand both the New Jersey Turnpike (Turnpike) and the Garden State Parkway (Parkway). We also present our estimates of operating expenses to operate and maintain the Turnpike and the Parkway for the period 2021 through 2030. Finally, we present our recommendations for reserve fund deposits over the same time period.

The capital assets of the Authority include approximately 316 centerline miles of mainline roadway, 4,477 lane miles (mainline, shoulders, and ramps) of roadway, and 1,118 bridges, as well as numerous facilities to accommodate patron services (service areas), maintenance activities, toll collection, materials storage, salt storage, and State Police offices.

ORGANIZATION AND MANAGEMENT

The character of the two roadways, the Turnpike and the Parkway, is remarkably different in a number of important aspects. These differences are a direct result of the type and volume of traffic using each roadway and the purposes and needs of an interstate road (the Turnpike) and an intrastate road (the Parkway). The disparity in the level of resources required to operate, maintain, enhance, and expand the two facilities is reflective of these inherent differences. The Authority has adequately organized their agency and is executing their operations and maintenance plans to address the infrastructure and operational needs of both roadways in a highly effective and cost-efficient manner. One common thread for the entire roadway system is proper maintenance. The following is a brief description of the Authority's recent and ongoing efforts to preserve the condition of their assets.

STATE OF GOOD REPAIR

An enduring policy of the Authority has been to maintain its assets in a state of good repair. To this end, the Authority, since its inception, has implemented an aggressive annual inspection program of the bridges, pavement, buildings, toll plazas, and ancillary facilities and safety devices. HNTB performs the annual inspections and has firsthand knowledge of the condition of the assets and the level of maintenance expended to achieve the state of good repair.

The Authority has implemented Enterprise Geographic Information Systems (eGIS) hardware and software throughout the agency to electronically record and store their infrastructure asset types, locations, condition statuses, and photos, where applicable. The assets that are currently included in the system include but are not limited to bridges, pavement, buildings, toll plazas, light poles, guide rail, median barrier, and drainage features. The eGIS information is maintained and updated during the annual inspections performed for the Authority's assets. The inspection field teams utilize handheld devices to quickly and efficiently identify, locate, and update condition status for the Authority assets. Assets that require immediate attention are noted and recorded during the field inspections. This allows the Engineering and Operations & Maintenance Departments to access and respond to the critical items noted in the eGIS inventory during the annual inspections. Planned for the future, the eGIS inventories will be used to populate an online work order tracking system for roadway and facility maintenance crews.

Beginning in 2016, the Authority increased the level of detail for its annual inspection program to cover more items and provide a greater depth of inspection. For example, bridge and structure inspections, which include major and routine bridges, sign structures, antenna towers, retaining walls, noise barriers, high mast lighting poles, and other structural roadway features, represent average expenditures of nearly $10 million per year for 2020 - 2021. Pavements are surveyed annually with state-of-the-art technology to identify areas where resurfacings are warranted to maintain serviceability. To ensure that maintenance funds are spent wisely and cost-effectively, the annual maintenance and improvement programs are comprised of projects prioritized in order of urgency in a manner that maintains public safety and the serviceability of the roadways and bridges.

Preventive maintenance and maintenance repairs are carried out through a combination of annual maintenance-related contracts and capital projects for the more significant projects. Annual contracts are awarded for all categories of bridge repairs -- deck replacements, superstructure repairs, and substructure repairs. In 2018, the amount awarded for this purpose was about $60 million and is planned to be over $80 million for 2021. Because of this increased diligence in bridge repairs, the condition ratings of the Authority's 1,118 bridges range from "fair" to "excellent"; terms that are defined in the Federal Highway Administration (FHWA) Coding Guide for the Inventory and Appraisal of the Nation's Bridges. In addition, there currently are only four structurally deficient bridges (0.36%) which compares extremely favorable to the national average of about 9%. The continuation of the CIPs coupled with the aggressive annual maintenance program will reduce that number to zero in a few years. All bridges are capable of safely supporting the heaviest legal loads of New Jersey and the United States.

The Authority also takes very good care of its pavements. It starts with the design criteria that the Authority has adopted. The design of the pavement section for both the Turnpike and the Parkway ensures that the roadways can withstand the daily impact of the traffic thereby helping to minimize future capital expenditure needs. Both the Turnpike and the Parkway have been recognized in the past for their pavement designs as "Perpetual Pavements" by the National Asphalt Pavement Association. A major requirement for this designation includes a minimum of a 50-year pavement life requiring only periodic resurfacings.

The Authority has developed and implemented an integrated Pavement Management System (PMS). The PMS is an effective means of assembling large volumes of data regarding pavement condition and other factors that affect pavement life and performance. Through the application of these software systems, the Authority obtains an objective analysis and vital information with which to manage the maintenance and repair of Turnpike and Parkway pavements for long-term sustainability.

The PMS has been supplemented with Decision Support System (DSS) software to provide a unique user interface for pavement management. The DSS uses American Association of State Highway Transportation Officials (AASHTO) Pavement Design Software to analyze pavement conditions and determine lifecycle performance for various sections of both the Turnpike and the Parkway. This provides Authority staff with a set of tools to quantify the current level of service provided on each toll road and it provides guidance on optimizing pavement performance and the annual allocation of repair funds.

The PMS leverages the value of the Authority's eGIS system. Pavement asset ratings are displayed on maps or charts and compared over multiple years, so trends can be identified.

The eGIS system is currently incorporated with the PMS to allow use of the following tools:

- Pavement Condition Viewer (PCV)
- Annual Visual Inspection
- Staff Reporting Capability
- Virtual Drive Tool
- Mobile Inspection Capability
- Pavement Repair History Data Base
- Identify Interim Maintenance Needs
- Interactive Capability with Trigger Points

Based on the results of the annual pavement analyses and the output of the PMS, annual contracts are awarded each year for pavement resurfacing projects on both the Turnpike and Parkway. Pavement resurfacing contract values have been constantly increasing in recent years. In fact, annual resurfacing expenditures covering both roadways were $37 million in 2017 and that amount is expected to increase to $120 million in 2023 and 2024. Pavement resurfacing involves milling a minimum two inches of existing asphalt surfacing and replacing it with a minimum of two inches of new hot mix asphalt. The resurfacing cycle generally has been every 15 years, but the increased maintenance reserve funding policies recently adopted by the Authority have resulted in reducing that cycle down to 12 years which compares very favorably with other transportation agencies in the Northeast.

These annual maintenance and repair contracts are primarily funded through the Maintenance Reserve and Special Projects Reserve Funds (see later in this report for a discussion of these funds and annual deposit requirements). Some projects, however, are funded through a CIP or the Supplemental Capital Fund.

COVID-19 IMPACTS

The impacts associated with the COVID-19 pandemic did not affect construction activities, costs or durations. In fact, construction activities were made more efficient due to the reductions in traffic. More construction work completed, and more efficient costs resulted from the increase in allowable work hours created as a result of lower traffic volumes. The Authority reduced non-working hours typically associated with morning and afternoon rush hours and general daytime traffic volumes. These conditions allowed for more construction work to be completed per day at less cost.

STRATEGIC PLAN

In September 2019, the Authority adopted is first Strategic Plan that covers a 10-year period, 2020-2029. The Strategic Plan details the Authority's vision, mission, and core values, and provides clear direction and measurable goals for the next 10 years. The Authority is working to measure, monitor and report its performance as compared to the key goals on a quarterly basis.

The Strategic Plan identifies three key tenets of the Authority's philosophy:

- **Vision Statement**
  To be the premier toll road agency in the Unites States of America
- **Mission Statement**
  To prudently manage the finances and operations of the New Jersey Turnpike Authority to provide our customers with a safe, efficient, innovative, and resilient toll road system, which facilitates mobility in New Jersey and the Northeast United States of America.
- **Core Values**
  Safety, Diversity, Innovation, Transparency, State of Good Repair, Customer Satisfaction, Resiliency & Sustainability, and Long-Term Financial Stability

The Strategic Plan includes performance measures for the key goals of the Authority as listed below:

- ***Safety***
  Safety is one of the core values of the Authority and is a critical component of the mission statement. Ensuring safety for both customers and the Authority workforce is a focus of every project and initiative undertaken by the agency.
- ***Financial Strength***
  Maintaining a strong financial position to fund operations, maintenance, and capital improvements adequately and efficiently supports the Authority's mission and vision for providing transportation services to the region.
- ***Mobility***
  Customer satisfaction is a key best practice for any business, including the Authority. Maintaining and improving mobility for current and future customers on both the Turnpike and Parkway is critical to the organization's future success.

- ***State of Good Repair***
  Maintaining a state of good repair can increase the useful life of Authority's assets, resulting in cost savings over time and is vital in keeping traffic moving well. State of good repair cuts across all goals of the Authority's Strategic Plan.
- ***People***
  The future success of the Authority depends on its ability to continue to serve and satisfy customers, which requires the agency to hire and retain a high-quality workforce. Qualified, motivated individuals across all levels of the organization are key to continued success which includes recruiting, motivating and retaining employees.

The Strategic Plan will be reviewed annually and updated to accurately reflect the vision, mission, and core values of the Authority and to ensure that the Authority is aligned with the most successful trends in the industry. The Plan provides clear and consistent direction to allow management and staff to all work with the same philosophy and consistency, constantly improving the Authority.

20-YEAR LONG-RANGE PLAN

In late 2019 and early 2020, the Authority developed a 20-Year Long-Range Capital Plan (LRCP) that identifies long term needs, capital improvements, and safety enhancements for the Parkway and Turnpike. The LRCP identifies the projects and initiatives necessary to achieve the goals and strategies identified in the Strategic Plan. This is the first time that the Authority has employed such long-range planning practices and provided detailed documentation of the results. The LRCP will be reviewed and updated annually to ensure that the long term needs of the Authority's assets are addressed in the most efficient and thorough ways.

CAPITAL IMPROVEMENT PROGRAMS

The Authority is currently implementing three active CIPs:

- 2021-2025 CIP
- 2019 CIP
- 2008 $7 Billion CIP

The 2008 CIP is nearing completion and has only a few active projects. The Program was very successful, having implemented more projects than anticipated at the original program cost. The 2019 CIP was started in 2019 and will be active for the next five to six years. Finally, the most recent CIP, the 2021-2025 CIP, was just approved in October 2020 and will be a perpetual, rolling five-year CIP that will be updated on an annual basis. We describe each CIP separately, although they are being carried out and funded concurrently.

The Authority's 2021 Annual Budget includes its Capital Spending Program Budget presented on a rolling five-year basis for all capital project spending for the years 2021-2025,which includes all three CIPs and the projects included in the Maintenance Reserve Fund, Special Project Reserve Fund, and Supplemental Capital Program. The Capital Spending Program Budget includes revenue funded projects as well as bond funded projects. The revenue funded capital projects, referred to as the Capital Budget, include projects in the Maintenance Reserve Fund, Special Project Reserve Fund and Supplemental Capital Program. The bond funded capital projects, referred to as the Construction Fund, include – (i) 2021-2025 CIP, (ii) 2019 CIP, and (iii) 2008 $7 Billion CIP. These spending budgets for capital projects are presented on a rolling five-year (2021-2025) spending basis. Each year a new rolling five-year spending plan will be approved with the changes, if any, to the total project budgets, as a part of the annual budget approval process.

The 2021 rolling five-year Capital Spending Program Budget includes $5.2 billion to be spent during 2021-2025, or an average of over $1.0 billion/year. Of this, 38% is budgeted to be spent on Bridge Construction, Preservation and Security, while 10% each is budgeted to be spent on Capacity Enhancements on both roadways, Pavement Resurfacing and Drainage Structures, all combining for a total of 68% of budgeted spending. Approximately 30%, or $1.5 billion, will be funded by revenue, while 70%, or $3.7 billion will be funded by bond proceeds.

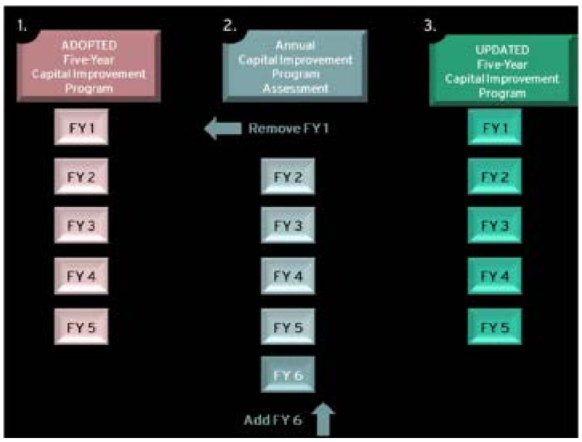
2021 - 2025 Rolling 5-Year Capital Spending Plan
Revenue Funded and Bond Funded
Funding Source

($ In Thousands)			Spending Plan			
Revenue Funded	**2021**	**2022**	**2023**	**2024**	**2025**	**Total**
Maintenance Reserve Fund	$ 185,292	158,198	246,342	226,750	226,750	1,043,332
Special Project Reserve Fund	73,912	51,347	49,629	49,823	50,639	275,348
Supplemental Capital Program Fund	73,380	38,100	30,800	30,035	29,000	201,315
Total Revenue Funded	$ 332,584	247,645	326,771	306,608	306,389	1,519,995
Bond Funded						
2021-2025 Capital Improvement Program	227,356	620,975	679,365	629,849	634,425	2,791,970
2019 Capital Improvement Program	268,135	168,910	98,198	55,313	15,770	606,325
2008 $7 Billion Capital Improvement Program	146,034	55,873	34,088	39,367	14,957	290,319
Total Bond Funded	$ 641,525	845,758	811,651	724,529	665,151	3,688,614
Total Capital Spending	$ 974,109	1,093,403	1,138,422	1,031,136	971,540	5,208,610
Percentage Revenue Funded	34%	23%	29%	30%	32%	29%
Percentage Bond Funded	66%	77%	71%	70%	68%	71%

2021-2025 CAPITAL IMPROVEMENT PROGRAM

The 2021-2025 CIP, which is derived from the 2020 Long-Range Capital Plan that was approved in May 2020, is starting with total project budgets (program budget) of $4.5B, and a rolling five-year spending plan of $2.8B, or an average spending of approximately $600 million each year. It should be noted that the estimated project costs are higher than the five-year spending plan because many of the projects in the 2021-2025 CIP last more that five years or begin later in the five-year Program.

Now that the Authority has a Strategic Plan and LRCP, they have adopted a new method of implementing the capital projects that are identified through the long-range planning process. The implementation method utilized to implement the capital projects is a five-year rolling CIP, updated each year



This method results in essentially a perpetual CIP with both short-term and long-term projects, which allows for constant fine-tuning of the CIP resulting in more accurate costs and schedules and reduced risk because the CIP is reviewed on an annual basis.

Included in this initial program are several projects focusing on bridge rehabilitation and replacement on both roadways, capacity enhancements such as the Newark Bay Hudson County Extension on the Turnpike, between Interchanges 1 to 4 on the Turnpike, and between mileposts 80 and 83 on the Parkway, culvert rehabilitations on both roadways, and Turnpike Interchange 17 ramp bridge replacement.

The 2021-2025 CIP will be funded primarily through bond proceeds. It is expected that a number of bond issues will occur each year, beginning in 2021, to fund the ongoing spending needs of the program.

As Consulting Engineers to the Authority, HNTB has participated in the planning, preparation of construction documents and cost estimates, and the monitoring of construction costs and progress for the Authority's 2021-2025 CIP. As part of the Authority's overall financial processes and as part of our consulting services, we have reviewed the estimated total construction costs and the schedules for the projects included in the 2021-2025 CIP and consider the estimated costs and schedules for the projects reasonable based on currently available engineering studies, construction bid trends, and construction statuses.

The projects that comprise the Authority's 2021-2025 CIP can generally be separated into six categories as shown below. As seen in the breakdown of the 2021-2025 CIP, it is a mix of projects which increase traffic capacity and operational efficiencies, increase safety, and maintain the system in a state of good repair. The breakdown of the 2021-2025 CIP is as follows:

Project Category	**Estimated Total Project Costs (millions)**	**% of Program**
Bridge Construction, Preservation & Security	$1,606	35.6%
Capacity Enhancements - Turnpike	1,495	33.1%
Capacity Enhancements - Parkway	85	1.9%
Interchanges	132	2.9%
Resiliency	140	3.1%
Concrete Barrier	34	0.8%
Drainage Structures	423	9.4%
Roadway Lighting	162	3.6%
Other Roadway Improvements	217	4.8%
Technology Improvements	219	4.9%
TOTAL	**$4,514**	

A detailed breakdown of the projects within these categories and brief description and status of each are provided below.

<u>Bridge Construction, Preservation & Security</u>

1. **GSP & TPK Bridge Rehabilitation/Replacement Program**
   i. **Location:** Various Counties
   ii. **Description:** This proposed 10-year program involves replacement of various bridge decks or superstructures each year, repainting various superstructures each year, and the rehabilitation of various bridge substructures every year. This program is intended to supplement the Authority's ongoing annual maintenance program for bridges.
   iii. **Status:** The individual projects that are part of this program are under design

2. **TPK Bridges (W110.42, W111.49, W112.B080)**
   i. **Location:** Hudson County
   ii. **Description:** This project will replace three bridges on the Turnpike Westerly Alignment. These bridges are deteriorated and in need of replacement.
   iii. **Status:** Project concept development and preliminary design are underway

3. **TPK I/C 17 Ramp Bridge Replacement**
   i. **Location:** Hudson County
   ii. **Description:** This project will replace ramp bridge E112.95A at Interchange 17 on the Turnpike. This bridge is deteriorated and in need of replacement.
   iii. **Status:** Project is under design

<u>Capacity Enhancements - Turnpike</u>

4. **TPK Mainline Capacity Enhancements between I/C Nos. 1 - 4**
   i. **Location:** Salem, Gloucester, Camden, and Burlington Counties
   ii. **Description:** The project includes design and construction of one additional lane and full shoulders in each direction between Interchanges 1 and 4, approximately 37 miles in length. Numerous other improvements in addition to the roadway and bridge capacity enhancements will be provided including improvements to drainage, guide rail, lighting, signing, striping, median barrier, and other items.
   iii. **Status:** This project will begin preliminary design and environmental documentation in 2021

5. **TPK Newark Bay Hudson County Extension Capacity Enhancements**
   i. **Location:** Essex and Hudson Counties
   ii. **Description:** The early phases of this project will determine the specific capacity enhancement strategies for the Newark Bay – Hudson County Extension. Prior to the studies being completed and in order to provide a general project description for purposes of this document, it is assumed that this project may widen the Turnpike mainline from two lanes in each direction to four lanes in each direction between Interchanges 14 and 14A. The project may widen the Turnpike mainline from two lanes in each direction to three lanes in each direction between Interchanges 14A and 14C. This project will provide full shoulders on the mainline throughout the project length. The eight-mile project would replace or widen multiple bridges and construct a new Newark Bay Bridge providing four lanes of traffic in each direction. Upgrades for drainage, lighting, signing, striping, retaining walls, and other roadway improvements would also be included.
   iii. **Status:** The project will be under study and preliminary design beginning in 2021

6. **TPK Westerly Alignment Mainline Capacity Enhancements**
   i. **Location:** Essex, Hudson, and Bergen Counties
   ii. **Description:** The early phases of this project will determine specific capacity enhancement strategies for the Turnpike Westerly Alignment. Prior to the studies being completed and in order to provide a general project description for purposes of this document, it is assumed that this project may widen the Turnpike Westerly Alignment between the Southern Mixing Bowl (where the Westerly and Easterly Alignments diverge) and the Northern Mixing Bowl (where the Westerly and Easterly Alignments merge), adding one lane in each direction and providing full-width shoulders. The 13-mile project would also replace or widen multiple bridges and upgrade drainage, lighting, signing, striping, retaining walls, and other roadway appurtenances.
   iii. **Status:** This project will be under study and preliminary design beginning in 2023

Capacity Enhancements - Parkway

7. **GSP Mainline Capacity Enhancements between I/C 129 - 142**
   i. **Location:** Middlesex and Union Counties
   ii. **Description:** The early phases of this project will determine specific capacity enhancement strategies for this portion of the Parkway. Prior to the studies being completed and in order to provide a general project description for purposes of this document, it is assumed that the project would widen the Parkway mainline from five lanes in each direction to six lanes in each direction with full shoulders along the entire length of the project. The project will replace or widen approximately 36 bridges to accommodate the capacity enhancements. The total project length is approximately 13 miles.
   iii. **Status:** This project will be under study and preliminary design beginning in 2024

8. **GSP Mainline Capacity Enhancements between I/C 154 - 163**
    i. **Location:** Passaic and Bergen Counties
    ii. **Description:** The early phases of this project will determine specific capacity enhancement strategies for this portion of the Parkway. Prior to the studies being completed and in order to provide a general project description, it is assumed that this project may widen the Parkway in various locations throughout the limits of this project. The nine-mile project would also focus on providing full shoulders, upgraded weaving and merge distances, and general upgrades to the various other aspects of the facility such as drainage, lighting, and other roadway appurtenances.
    iii. **Status:** Project will be under study and preliminary engineering beginning in 2025

Interchanges

9. **GSP I/C 80 Completion & Capacity Enhancements between I/C 80 - 83**
    i. **Location:** Ocean County
    ii. **Description:** Interchange 80 consists of a southbound exit ramp and northbound entrance ramp at US Route 9 and County Route 530. The missing directional movements would be added to this interchange. In addition, capacity enhancements are needed from Interchanges 80 – 83 to accommodate existing and future traffic demands. The early phases of this project will determine capacity enhancement strategies for this section of the Parkway. Prior to the studies and preliminary design being completed and in order to provide a general project description for purposes of this document, it is assumed that this project may widen the Parkway mainline in each direction to four lanes between Interchanges 80 and 83. The project will provide full shoulders on the mainline throughout the project length. The approximately three-mile project would replace or widen multiple bridges including across Toms River and under Lakehurst Road (County Route 527). Upgrades for drainage, lighting, signing, striping, retaining walls, and other roadway improvements would also be included.
    iii. **Status:** Studies and design for this project are currently underway

Resiliency

10. **GSP & TPK Resiliency**
    i. **Location:** Various Counties
    ii. **Description:** This program will incorporate resilient and sustainable components into the various capital projects that are part of the current capital improvement programs. In addition, several individual resiliency and sustainability projects may be developed as a result of this program.
    iii. **Status:** Project studies and preliminary design will be underway beginning in 2022

Concrete Barrier

11. GSP & TPK Median Barrier Improvements

i. **Location:** Various Counties

ii. **Description:** This project will replace deteriorated sections of median barrier on both roadways. The new median barriers will be designed to the latest design standards and will be prioritized by areas of greatest need. This program is intended to supplement the Authority's annual maintenance program for median barrier.

iii. **Status:** Project design is currently underway

Drainage Structures

12. GSP Corrugated Metal Pipe Replacement & Culvert Rehabilitation

i. **Location:** Various Counties

ii. **Description:** This program will replace existing corrugated metal pipes used in drainage systems and culverts on the Parkway. The metal pipes have significantly deteriorated due to corrosion and age. In addition, culverts would be rehabilitated to repair pipes or concrete boxes and repair erosion.

iii. **Status:** Several projects are under design

Roadway Lighting

13. GSP & TPK Lighting Upgrades

i. **Location:** Various Counties

ii. **Description:** This program will upgrade existing filament bulb fixtures to LED fixtures and upgrade the wiring at multiple locations along both the Parkway and the Turnpike.

iii. **Status:** Several projects are under design

Other Roadway Improvements

14. GSP & TPK MSE Wall Replacement

i. **Location:** Various Counties

ii. **Description:** This program will replace deteriorated first generation MSE retaining walls with new retaining walls. This program is intended to supplement the Authority's annual maintenance program for MSE walls.

iii. **Status:** Project studies and design services will be underway beginning in 2022

15. GSP & TPK UST Upgrades

i. **Location:** Various Counties

ii. **Description:** This project involves removing underground storage tanks and replacing them with above-ground tanks.

iii. **Status:** Project studies and design will be underway beginning in 2022

16. GSP & TPK Pavement Preservation Program

i. **Location:** Various Counties

ii. **Description:** This program involves supplemental pavement milling and replacement covering multiple sections of the Parkway and Turnpike. This program is intended to supplement the Authority's annual resurfacing program carried out as part of the annual maintenance programs on both facilities.

iii. **Status:** The individual projects that are part of this program are under design

17. GSP Service Area Ramps

i. **Location:** Various Counties

ii. **Description:** This project will widen certain access ramps that serve service areas to a sufficient width to accommodate vehicle movement past a disabled vehicle. The work will typically include widened pavement and associated items such as drainage, lighting, signing, and addressing any other impacts of the capacity enhancements.

iii. **Status:** The project is currently under design

Technology Improvements

18. GSP & TPK ITS Infrastructure & Software Upgrades

i. **Location:** Various Counties

ii. **Description:** This program involves upgrade and replacement of software, hardware and related infrastructure associated with Intelligent Transportation Systems that are used for traffic operations for both roadways. It will also address internal Authority software and hardware associated with the Authority's day-to-day business operations and functions. This program is intended to supplement the Authority's normal technology refresh and replacement process with a focus on new technologies that can improve safety, efficiency, and cost effectiveness.

iii. **Status:** Studies and project development for technology needs are underway

19. TPK Hybrid Changeable Message Signs

i. **Location:** Various Counties

ii. **Description:** This project includes the deployment of 89 Hybrid Changeable Message Signs (HCMSs) at 50 sites along the Turnpike to replace the existing changeable message drum signs. The project provides for design and construction of the HCMS structural supports, provision and installation of HCMSs, and connectivity utilizing fiber optic communication networks back to the Statewide Traffic Management Center (STMC). All signs are monitored and controlled from the STMC.

iii. **Status:** This project is under construction

2019 CAPITAL IMPROVEMENT PROGRAM

The Authority adopted a 2019 CIP in April 2019 which consists of the design, supervision and construction of 21 capital improvement projects on both roadways. The projects include several bridge deck improvements on both roadways, the shoulder widening and reconstruction of the Parkway between mileposts 30 and 35, the first phase of the replacement of the hybrid changeable message signs on the Turnpike, and rehabilitation of three bridges that cross the Passaic River on both roadways. In 2021, the 2019 Capital Improvement Program budget will increase to $673 million from $500 million primarily due to the transfer of the remaining Passaic River Bridge Projects and the Service Area Improvement Project (outside the curb line) as well as increased funding for existing project needs primarily on the Parkway shoulder widening project. The project costs associated with these additional projects is $173 million.

As Consulting Engineers to the Authority, we have participated in the planning, preparation of construction documents and cost estimates, and the monitoring of construction costs and progress for the Authority's 2019 CIP. As part of the Authority's overall financial processes and as part of our consulting services, we have reviewed the estimated total construction costs and the schedules for the projects included in the 2019 CIP and consider the estimated costs and schedules for the projects reasonable based on currently available engineering studies, construction bid trends, and construction statuses.

The projects that comprise the Authority's 2019 CIP can generally be separated into six categories as shown below. As seen in the breakdown of the 2019 CIP, it is a mix of projects which increase operational efficiencies and safety while also maintaining the system in a state of good repair. The breakdown of the 2019 CIP is as follows:

Project Category	Estimated Total Project Costs (thousands)	% of Program
Bridge Construction, Preservation & Security	$315,258	46.9%
Interchanges	30,829	4.6%
Concrete Barrier	36,558	5.4%
Other Roadway Improvements	144,563	21.5%
Service Areas & Arts Center	76,743	11.4%
Technology Improvements	68,907	10.2%
TOTAL	**$672,857**	

A detailed breakdown of the projects within these categories and brief description and status of each are provided below.

<u>Bridge Construction, Preservation & Security</u>

1. **GSP Bridge Deck Reconstruction 141-142**
   i. **Location:** Union County
   ii. **Description:** This project provides for the reconstruction and/or superstructure replacement of severely deteriorated, high priority bridge decks located between milepost 140 and 143. The reconstruction work will also include median barrier, bridge painting, and approach roadway improvements.
   iii. **Status:** Project is currently under construction
2. **GSP STR 160.6 to 161.9 NB SB**
   i. **Location:** Bergen County
   ii. **Description:** This project includes the reconstruction of six severely deteriorated, high priority bridge decks which carry the Parkway mainline over local roads located between Mileposts 160.6 and 161.9. Approximately two miles of deteriorated median barrier will also be replaced.
   iii. **Status:** Project is currently under design
3. **TPK Bridge Fender Reconstruction**

i. **Location:** Various Counties

ii. **Description:** This project will design and reconstruct deteriorated structural members and channel marking lighting systems of waterway channel fender protection systems of select Turnpike and Parkway bridges

iii. **Status:** Project is currently under construction

4. TPK Bridge Lengthening 30.75 & 33.94

i. **Location:** Camden and Burlington Counties

ii. **Description:** This project provides for the design and deck reconstruction and lengthening of one severely deteriorated bridge deck which carries a local road over the southern portion of the Turnpike located at Milepost 30.75. The bridge lengthening will provide for adequate space for future widening of the Turnpike between Interchanges 1 and 4. Preliminary engineering studies resulted in the conclusion that a second bridge at Milepost 33.94 which was originally part of this project will not be part of the 2019 Capital Improvement Program.

iii. **Status:** Project is currently under construction

5. **TPK Bridge Rehabilitation**
    i. **Location:** Essex, Hudson and Middlesex Counties
    ii. **Description:** This project provides for the design and continued rehabilitation of the Turnpike Passaic River and Raritan River Bridge Structure Nos. W107.87, E107.88 and 84.24N & S.
    iii. **Status:** Project is currently under design

6. **TPK Improve Str N2.01 Piers**
    i. **Location:** Essex and Hudson Counties
    ii. **Description:** This project provides for the design and reconstruction of three high priority undermined bridge pier foundations between Piers E6 and E9 for the Newark Bay Bridge, Turnpike Structure No. N2.01, on the Hudson County Extension.
    iii. **Status:** Project is currently under construction

7. **TPK Redecking STR 87.27 NSI**
    i. **Location:** Middlesex County
    ii. **Description:** This project provides for the design and construction for the reconstruction of a severely deteriorated, high priority bridge deck located at Milepost 87.27S on the Turnpike which carries the mainline over Main Street (CR 531).
    iii. **Status:** Project is currently under construction
    iv. **Impact on Operating Budget:** This project will extend the life of Bridge No. 87.27S and will reduce the need for intermittent repairs resulting in very minor reductions in routine maintenance costs. This will be reflected in the future operating budget estimates.

8. **TPK Redecking STR E106.68 E106.92**
    i. **Location:** Essex County
    ii. **Description:** This project provides for the design and construction for the deck reconstruction of two severely deteriorated, high priority bridge decks located at Mileposts E106.68 and E106.92B along the easterly extension of the Turnpike.
    iii. **Status:** Project is currently under construction

9. **GSP Passaic River Bridge Rehabilitation**
    i. **Location:** Passaic County
    ii. **Description:** This project provides for the design, construction, construction supervision, and permitting services for the superstructure replacement and widening of Parkway Bridge Structure No. 158.2 over the Passaic River, US Route 46, and River Road.
    iii. **Status:** Project is currently under design

10. **TPK Laderman Bridge Repair Project**
    i. **Location:** Essex County
    ii. **Description:** This project provides for the design, construction, and construction supervision services for superstructure repairs to Turnpike Structure No. W107.87, Laderman Memorial

Passaic River Bridge on the Turnpike Westerly Alignment. The project also provides for strengthening of low rating superstructure members.

iii. **Status:** Project is currently under construction

11. TPK Washington Bridge Repair Project

i. **Location:** Essex County

ii. **Description:** This project provides for the design, construction, and construction supervision services for superstructure repairs to Turnpike Structure No. E107.88, Chaplain Washington Memorial Passaic River Bridge on the Turnpike Easterly Alignment. The project also provides for strengthening of low rating superstructure members and the replacement of the major pin and hanger assemblies of the superstructure.

iii. **Status:** Project is currently under construction

Interchanges

12. TPK I/C 18E High Speed E-ZPass 16E

i. **Location:** Bergen County

ii. **Description:** This project will design and construct an Express E-ZPass bypass for Interchange 18E and allow 18E cash customers to use the remaining toll plaza lanes at 16E. This will improve the overall traffic flow at the Interchange and reduce the exiting bus queuing that utilizes the contraflow Exclusive Bus Lane (XBL).

iii. **Status:** Project is currently under construction

13. TPK I/C 6 Express E-ZPass Improvements

i. **Location:** Burlington County

ii. **Description:** This project will construct improvements to implement dual Express E-ZPass lanes in the eastbound and westbound directions at the Interchange 6 toll plaza.

iii. **Status:** This project is under construction

14. TPK I/C 6-9 Berm Surface Revision

i. **Location:** Middlesex, Mercer and Burlington Counties

ii. **Description:** This project will design and construct berm surfacing improvements at select locations adjacent to and underneath exiting guide rail systems and at various median locations on the Turnpike between Interchanges 6 and 9.

iii. **Status:** Project is currently under construction

Concrete Barrier

15. GSP Rehabilitation of Concrete Median Barrier

i. **Location:** Middlesex and Union Counties

ii. **Description:** This project includes the inspection and condition assessment of concrete median barrier and the implementation of a repair, replacement, and upgrade program along the Parkway in the former "State section" between MP 129 and MP 142.

iii. **Status:** Project is currently under construction

Other Roadway Improvements

16. GSP Shoulder Widening and Reconstruction MP 30-35

i. **Location:** Cape May and Atlantic Counties

ii. **Description:** Safety and maintenance improvements to this section of the Parkway are necessary to be consistent with the other safety improvements recently completed under the $7 Billion Capital Improvement Program in adjacent sections. This project provides for the construction of standard width shoulders for the five-mile section, reconstruction of eight bridges, drainage improvements, and roadside area improvements.

iii. **Status:** Project is currently under construction

17. GSP Weathering Guide Rail Replacement

i. **Location:** Various counties

ii. **Description:** The Parkway guide rail systems are comprised of weathering steel. This project will provide for upgrades to the highest priority guide rail systems along the Parkway to comply with recently adopted Federal crash test standards.

iii. **Status:** Project is currently under design

18. GSP & TPK Horizontal Curve Warning Sign Installations

i. **Location:** Various Counties

ii. **Description:** This project will design and construct new curve warning signs on select Parkway and Turnpike ramps to provide advanced warning to the motoring public in order to improve safety.

iii. **Status:** The project is currently on hold

Technology Improvements

19. TPK Install New Hybrid CMS

i. **Location:** Various Counties

ii. **Description:** This project includes the deployment of 89 Hybrid Changeable Message Signs (HCMSs) at 50 sites along the New Jersey Turnpike to replace the existing changeable message drum signs. The project provides for design and construction of the HCMS structural supports, provision and installation of HCMSs, and connectivity utilizing fiber optic communication networks back to the Statewide Traffic Management Center (STMC). All signs are monitored and controlled from the STMC.

iii. **Status:** Project is currently under construction

Service Areas & Arts Center

20. GSP Arts Center Signal Lot Expansion

i. **Location:** Ocean County

ii. **Description:** This project includes the construction of new traffic signals for access roadways at the PNC Arts Center.

iii. **Status:** Project is currently under design

21. SA – HMSHost & Sunoco

i. **Location:** Various Counties

ii. **Description:** The Authority entered into 25-year contracts with HMSHost Toll Roads Inc. to provide food services and Sunoco Retail LLC to provide fuel services at Authority service areas, which includes all service areas on both the Parkway and Turnpike except Colonia (Northbound) and Colonia (Southbound) which are privately owned and operated. As a result of the contracts, HMSHost and Sunoco will be investing in the service areas from 2018 through approximately 2029 providing new and rehabilitated restaurant buildings and fueling station facilities. The Authority will be investing in rehabilitated infrastructure outside the building envelopes at each of the service areas which will include resurfaced parking lots and commuter lots, updated lighting, enhanced security, landscaping, signing, and striping.

iii. **Status:** The following service areas have been completed and are open to the public:

- Monmouth (Parkway)
- Alexander Hamilton (Turnpike)
- Brookdale North (Parkway)
- Forked River (Parkway)
- Richard Stockton (Turnpike)

The following service areas are under construction:

- Thomas Edison (Turnpike)
- Vince Lombardi (Turnpike)

The following service areas are under design:

- Grover Cleveland (Turnpike)
- Woodrow Wilson (Turnpike)
- Molly Pitcher (Turnpike)
- James Fenimore Cooper (Turnpike)
- Joyce Kilmer (Turnpike)
- Walt Whitman (Turnpike)
- Clara Barton (Turnpike)
- John Fenwick (Turnpike)
- Atlantic (Parkway)
- Cheesequake (Parkway)
- Montvale (Parkway)
- Vauxhall (Parkway)
- Brookdale South (Parkway)
- Oceanview (Parkway)

2008 $7 BILLION CAPITAL IMPROVEMENT PROGRAM

In October 2008, the Authority adopted the 2008 $7B CIP, which includes numerous projects focused on major capacity enhancements and other roadway improvements to both the Turnpike and the Parkway, bridge construction and improvements, interchange improvements, and other facilities improvements. In

September 2018, the Authority amended the 2008 CIP to extend its end date to December 31, 2020. Several projects from this CIP are still in progress as described in more detail later in this section. The 2008 $7B CIP included the extremely successful widening of the Turnpike between Interchanges 6 and 9 and the widening of the Parkway between mileposts 35 and 80.

Although the 2008 Program is nearly complete, there are several ongoing projects. The work remaining to be completed includes the Newark Bay Hudson County Extension bridge rehabilitation, facilities improvements, interchange improvements, and bridge deck reconstruction. As of the date of this report, the overall 2008 $7B CIP is approximately 96% completed.

As Consulting Engineers to the Authority, we have participated in the planning, preparation of construction documents and cost estimates, and the monitoring of construction costs and progress for the Authority's 2008 $7B CIP. As part of the Authority's overall financial processes and as part of our consulting services, we have reviewed the estimated total construction costs and the schedules for the projects included in the CIP and consider the estimated costs and schedules for the remaining projects reasonable based on currently available engineering studies and construction statuses.

The projects that comprise the Authority's 2008 $7B CIP can generally be separated into eight categories as shown below. As seen in the breakdown of the 2008 $7B CIP, it is a balanced mix of projects which increase traffic capacity and operational efficiencies while also maintaining the system in a state of good repair. The breakdown of the 2008 $7B CIP is as follows:

Project Category	Estimated Total Project Costs (millions)	% of Program
Bridge Construction, Preservation & Security	$1,692	24.2%
Capacity Enhancements - Turnpike	2,131	30.4%
Capacity Enhancements - Parkway	582	8.3%
Interchanges	1,052	15.0%
Concrete Barrier	52	0.7%
Drainage Structures	62	0.9%
Other Roadway Improvements	706	10.1%
Facilities	723	10.3%
TOTAL	**$7,000**	

A detailed breakdown of the projects within these categories and brief description and status of each are provided below.

Bridge Construction, Preservation & Security

1. **Bridge Painting Phase I**
    i. **Location:** Various Counties
    ii. **Location:** This project provided for the design and construction for the cleaning and repainting of structural steel of the highest priority Turnpike and Parkway major bridges.
    iii. **Status:** Design and construction completed – September 2014

2. **Bridge Painting Phase II**
   i. **Location:** Various Counties
   ii. **Description:** This project provides for the design and construction for the cleaning and repainting of structural steel of the highest priority Turnpike and Parkway major and non-major bridges.
   iii. **Status:** Design and construction is on-going

3. **Bridge Preservation & Security**
   i. **Location:** Various Counties
   ii. **Description:** This project provides for the design and construction phases of countermeasures and security improvements for the Authority's 16 major bridges on the Turnpike and Parkway. It also includes the design and construction of seismic retrofitting of the Turnpike's highest priority bridges as recommended from the Phase I Seismic Screening and Prioritization Report. This project further provides for the design and construction for the miscellaneous bridge work on the Turnpike not covered under the annual miscellaneous structural repair contracts. The primary work includes bridge bearing replacement and significant substructure repairs.
   iii. **Status:** Design and construction is on-going

4. **Deck Reconstruction Phase I**
   i. **Location:** Various Counties
   ii. **Description:** This project provided for the design and construction of the re-decking of the highest priority non-major Turnpike and Parkway mainline and overpass bridges.
   iii. **Status:** Design and construction completed and opened to traffic – March 2016

5. **Deck Reconstruction Phase II**
   i. **Location:** Various Counties
   ii. **Description:** This project provides for the design and construction of the re-decking of the highest priority non-major Turnpike and Parkway mainline and overpass bridges.
   iii. **Status:** Design and construction is substantially complete – Spring 2020

6. **GSP Bass River Bridge**
   i. **Location:** Atlantic County
   ii. **Description:** This project provided for the design and construction of improvements to the Parkway crossing of the Bass River. The primary work included the construction of a new parallel bridge and re-decking, structural repairs, re-painting and seismic retrofit on the existing bridge, Structure No. 51.9.
   iii. **Status:** Design and construction completed and opened to traffic – May 2015

7. **GSP Great Egg Harbor/Drag Channel**
   i. **Location:** Atlantic and Cape May Counties
   ii. **Description:** This project provides for the design and construction of new parallel bridges carrying the southbound Parkway over Great Egg Harbor and Drag Channel. The new

bridges will be constructed west of the existing southbound structures. Construction will also include demolition of the existing southbound bridges; rehabilitation of the northbound Parkway bridges; and demolition of the nearby existing Beesley's Point Bridge. Special construction features include a ten-foot-wide multi-use pathway on the west side of the new bridges and approach roadways, and a plastic lumber fender system to protect the bridge piers.

iii. **Status:** Design and construction is substantially complete – August 2019

8. GSP Mullica River Bridge

i. **Location:** Atlantic County

ii. **Description:** This project provided for the design and construction of improvements to the Parkway crossing of the Mullica River. The primary work included the construction of a new parallel bridge and re-decking, structural repairs, re-painting and seismic retrofit on the existing bridge, Structure No. 49.0.

iii. **Status:** Design and construction of new bridge completed and opened to traffic – December 2012. Design and reconstruction of existing bridge completed and opened to traffic – April 2014.

9. GSP Substructure Bridge Repairs

i. **Location:** Various Counties

ii. **Description:** This project provided for the design and construction of repairs and rehabilitation of the substructure elements of the Northbound Driscoll Bridge, Structure No. 127.2N, along with pier caps, columns, and substructure elements on other major and non-major bridge water crossings.

iii. **Status:** Design and construction completed and opened to traffic – December 2015

10. Newark Bay Hudson County Extension Bridge Redecking

i. **Location:** Hudson and Essex Counties

ii. **Description:** This project provides for the design and construction of the re-decking of various structures on the Newark Bay-Hudson County Extension, including the Newark Bay Bridge, Structure No. N2.01. This project also provides for the repairs to structural steel and substructure units, security improvements, and re-painting.

iii. **Status:** Design and construction on-going

11. TPK Hackensack East Bridge Rehabilitation

i. **Location:** Hudson County

ii. **Description:** This project provided for the design and construction of the rehabilitation on the Turnpike's existing Eastern Hackensack River Bridge, Structure No. E109.83. The primary work included bridge re-decking, structural repairs, re-painting and seismic retrofit.

iii. **Status:** Design and construction completed and opened to traffic – April 2015

12. TPK I/C 16E-18E Bridge Improvements

i. **Location:** Hudson County

ii. **Description:** This project provided for the widening and re-decking of Structure No. E112.58A and the widening of Secaucus Road, Structure No. E112.10.

iii. **Status:** Design and construction completed and opened to traffic – 2011

13. TPK Specialized Bridge STR Repairs

i. **Location:** Various Counties

ii. **Description:** This project provided for the design and construction of specialized bridge repairs on the Turnpike that were not covered under the annual miscellaneous structural repair contracts. The primary work included improvements to structural steel modifications, bearing replacements, and steel repairs for various non-major bridges.

iii. **Status:** Design and construction is complete

Capacity Enhancements - Turnpike

14. TPK I/C 6-9 Widening

i. Location: Burlington, Mercer, and Middlesex Counties

ii. **Description:** The project involved the construction of 3 additional lanes, both northbound and southbound, between Interchanges 6 and 8A, approximately 25 miles. The project also included the addition of one lane in each direction between Interchanges 8A and 9. The widening project resulted in 12 total mainline lanes being provided between Interchanges 6 and 9. In addition, the project included interchange improvements within the project limits as determined to be necessary to meet traffic demands for the design year of 2032.

iii. **Status:** Design and construction completed and opened to traffic – November 2014.

Capacity Enhancements - Parkway

15. GSP Widening I/C 35-63

i. **Location:** Various Counties

ii. **Description:** This project provides for the construction of a third travel lane with full shoulders in each direction on the Parkway. Six (6) individual design and construction contracts will provide for the widening of the 28-mile section in both directions the Parkway, new sign structures, and multiple bridge replacements.

iii. **Status:** Design and construction from Interchange 63 to 41 completed - 2016. Design and construction from Interchange 41 to 35 was opened to traffic in the spring of 2018.

16. GSP Widening of I/C 63-80

i. **Location:** Various Counties

ii. **Description:** This project provided for a third travel lane with full shoulders in each direction on the Parkway and Express E-ZPass/One-Way Southbound Tolls at the Barnegat Toll Plaza. Three (3) individual design and construction contracts were provided for mainline widening of the 17-mile section in both directions, new sign structures, ten bridge replacements, realignment of the Parkway at the Barnegat Toll Plaza to provide for the elimination of tolls in the northbound direction, creating Express E-ZPass operation in the southbound direction, and a new toll utility building.

iii. **Status:** Design and construction completed and opened to traffic – May 2011

Interchanges

17. GSP I/C 125 Phase I

i. **Location:** Middlesex County

ii. **Description:** Interchange 125 is a partial interchange presently configured with a southbound entrance and northern exit ramp. This project will provide a new northbound entrance and new southbound exit ramp. The southbound exit ramp was opened July 2017 and is tolled to be consistent with one-way tolls at the Raritan Toll Plaza.

iii. **Status:** Design and construction is substantially complete – June 2020

18. GSP I/C 142 Improvements

i. **Location:** Union County

ii. **Description:** This project was a joint cooperative project between the Authority and the New Jersey Department of Transportation (NJDOT) that provided for the design and construction of missing ramp connections between the Parkway and I-78. The project also provided improvements to the interchange's existing ramp network, toll plaza, and to the I-78 mainline. The project was funded by the Federal Highway Administration, NJDOT, and the Authority. The project cost presented herein represents the Authority's share of the overall project cost.

iii. **Status:** Design and construction completed and opened to traffic – April 2011

19. GSP I/C 41 Improvements

i. **Location:** Atlantic County

ii. **Description:** At Interchange 41, local traffic previously accessed the Parkway through a service road to the Atlantic Service Area from Jimmie Leeds Road. This project provided a full interchange to allow Parkway access at Jimmie Leeds Road to and from the south.

iii. **Status:** Design and construction completed and opened to traffic – August 2015

20. GSP I/C 44 Improvements

i. **Location:** Atlantic County

ii. **Description:** Interchange 44 previously provided access to the Parkway to and from the north only. This project completed the interchange to provide two additional ramps to allow access to and from the south.

iii. **Status:** Design and construction completed and opened to traffic – August 2015

21. GSP I/C 88 Improvements

i. **Location:** Ocean County

ii. **Description:** This project provided missing ramp movements at this partial interchange along with modifications to the existing ramp movements to and from the north. The project also included reconstruction of two mainline bridges, construction of two new bridges over NJ Route 70, construction of a new collector/distributor roadway between Interchange 88 and Interchange 89, and relocation and consolidation of ramp toll collection facilities.

iii. **Status:** Design and construction completed and opened to traffic – July 2015

22. GSP I/C 9, 10, & 11 Improvements

i. **Location:** Cape May County

ii. **Description:** There were three traffic signals on the Parkway in Cape May County at Interchanges 9, 10 and 11. This project eliminated the traffic signals by providing three bridges to carry the Parkway over the local streets at each interchange. This project also provided for full access to the Parkway northbound and southbound at each interchange.

iii. **Status:** Design and construction substantially completed and opened to traffic – April 2016

23. GSP I/C 91 Improvements

i. **Location:** Ocean County

ii. **Description:** This project was a joint cooperative project between the Authority and Ocean County that provided missing ramp movements at this partial interchange. The project also includes the construction of two extended service roads and County road improvements that eliminated the complex traffic pattern at the interchange, relieved congestion on local roads, and enhanced safety. The project was funded by Ocean County and the Authority. The project cost represents the Authority's share of the overall cost of the project.

iii. **Status:** Design and construction completed – September 2017.

24. GSP & TPK I/C Improvements

i. **Location:** Various Counties

ii. **Description:** This project includes improvements to interchanges on the Turnpike and Parkway. Interchange locations include Turnpike Interchanges 9, 10, 15W, 16W, and Parkway Interchanges 0, 105, 109, 145, 163.

iii. **Status:** Design and construction is on-going

25. TPK I/C 14A Reconstruction

i. **Location:** Hudson County

ii. **Description:** There were operational limitations due to constrained geometry for this existing Turnpike interchange that it is located within the cities of Bayonne and Jersey City. The proposed redevelopment of the Military Ocean Terminal in Bayonne along with Global Terminal will result in a significant increase in traffic using the Interchange 14A toll plaza. The interchange capacity was improved, and two additional toll lanes were added to the existing toll plaza to address the operational and capacity deficiencies of the existing interchange.

iii. **Status:** Design and construction is complete – June 2020

26. TPK I/C 8A to Route 130 Connector Improvements

i. **Location:** Middlesex County

ii. **Description:** This project will address significant traffic congestion near Interchange 8A. The project limits include a section of Route 32 between Interchange 8A and the interconnection of Route 32 with Route 130. Middlesex County has requested that the Authority undertake appropriate improvements on the basis that much of the traffic within the corridor is destined to or from the Turnpike.

iii. **Status:** Design and construction is complete

Concrete Barrier

27. GSP & TPK Median Barrier Improvements

i. **Location:** Various Counties

ii. **Description:** This project included the inspection and condition assessment of concrete median barrier, and the implementation of a repair, replacement, and upgrade program along the Parkway and Turnpike mainline and interchange ramps. The project included sections of severely deteriorated concrete median barrier that required replacement between Parkway MP 141 and MP 160 as well as other locations.

iii. **Status:** Design and construction substantially complete – July 2014

Drainage Structures

28. GSP & TPK Drainage Improvements

i. **Location:** Various Counties

ii. **Description:** This project included design services and construction to rehabilitate or replace non-functioning and substandard drainage systems. The project also included the analysis of the condition of existing median inlets along the Authority's mainline and interchange ramp roadways and will construct recommended improvements in compliance with current environmental regulations.

iii. **Status:** Design and construction completed 2019.

Other Roadway Improvements

29. GSP Mainline Shoulder Improvements

i. **Location:** Ocean and Monmouth Counties

ii. **Description:** In the late 1980's, the right and left mainline shoulders from MP 80 to MP 100 on the Parkway were eliminated and the width of the travel lanes was reduced to create a third travel lane in both the northbound and southbound directions between Interchanges 80 and 91 and a fourth lane between Interchanges 91 and 98. The geometric changes were made to provide additional capacity to meet the traffic demands along this section of the Parkway. This project reconstructed the mainline roadway to provide full-width right and left shoulders and to widen the travel lanes to widths that meet current standards.

iii. **Status:** Design and construction completed and opened to traffic - December 2015

30. **GSP & TPK Improvements to Roadway Appurtenances**
    i. **Location:** Various Counties
    ii. **Description:** This project provides for upgrading various guide rail, guide rail end treatments, and crash cushions along the Parkway and Turnpike.
    iii. **Status:** Design and construction substantially complete – 2019.

31. **GSP & TPK Sign Replacements Phase I**
    i. **Location:** Various Counties
    ii. **Description:** This project includes inspection, assessment and implementation of the remedial measures necessary to bring dated mainline and interchange guide signing into compliance with current standards. This project will upgrade existing Parkway and Turnpike guide signs and structures, along the mainline, ramps or at facilities to the current design standards. The project includes the study and assessment of current signing legends and locations along with recommendations and plans to procure the construction services necessary to bring signing into compliance with current standards.
    iii. **Status:** Design and construction completed - September 2018

32. **GSP & TPK Sign Replacements Phase II**
    i. **Location:** Various Counties
    ii. **Description:** This project includes the deployment of 250 Variable Message Signs (VMSs) at various locations along the length of the Turnpike and the Parkway. The project provided for design and construction of VMS sign supports, provision and installation of VMS signs, and connectivity utilizing fiber optic communications networks back to the Statewide Traffic Management Center (STMS). All signs are monitored and controlled from the STMC.
    iii. **Status:** Design and construction is on-going.

33. **GSP & TPK Southern Improvements**
    i. **Location:** Various Counties
    ii. **Description:** This project provided miscellaneous improvements to the mainline and interchanges located in the southern portion of the Turnpike between Interchange 1 and Interchange 4 and on the Parkway between MP 0 and MP 48.
    iii. **Status:** Design and construction completed – June 2013

Facilities

34. **GSP & TPK Facilities Improvements Phase I**
    i. **Location:** Various Counties
    ii. **Description:** This project replaces and rehabilitates facilities at 22 Turnpike and Parkway maintenance districts to bring 50+ year old maintenance buildings into compliance with current building codes and operational standards. The project also includes repairing/rehabilitating several Turnpike toll plazas to incorporate safety and operational improvements. Finally, four new State Police facilities will be constructed under this project.
    iii. **Status:** Design and construction is on-going

35. Salt Storage Facilities

i. **Location:** Various Counties

ii. **Description:** This project provided new, increased salt storage capacity for the Turnpike and Parkway.

iii. **Status:** Design and construction is completed – May 2016

OPERATING EXPENSES

The Authority is currently implementing an overall Financial Plan that is designed to maintain cost efficiencies, reduce costs where possible, and otherwise constrain the financial needs of Authority operations. Policy decisions that have been adopted during the last several years provide a continued constraint on non-operating staffing levels, a renegotiation of work rules under union contracts, and other procedures that have resulted in control over overall operating expenses. However, non-discretionary budget items such as projected wage, pension, and health benefit increases; increased utility costs; increased insurance premiums; and increased state police costs coupled with increased staffing due to additional roadway infrastructure being constructed under the CIP becoming complete and operational, will cause the operating expenses for the Authority to increase. Staff increases are primarily focused in the maintenance department to address additional maintenance needs created by the additional lane miles and toll collection department. The toll collection department is increasing their permanent staff moderately to offset the hiring of 100 seasonal toll collectors. Several departments are reducing staff and the effect of the toll collection department staffing adjustments is a net savings for this department. Furthermore, the Authority is being conservative when budgeting for maintenance activities associated with severe weather and other unexpected events. The severe winter of 2014 and the lingering effects of Superstorm Sandy have provided great experience and sound basis for budget planning for such events. The Authority has adopted a philosophy to budget based on the worst actual expenditures so there will be sufficient funds available to address severe weather and other unexpected events. Overall, the operating budget is being managed in an appropriate manner, keeping increases to a minimum while accounting for the needs of the Authority's assets and safety of the traveling public.

A review of the history of the Authority's operating expenses was performed for periods prior to and after consolidation with the New Jersey Highway Authority, which occurred in 2003. From 1994 to 2002, the Authority's growth in operating expenses was flat. During that eight (8) year period, the operating budget decreased by $626,300. After consolidation, for the period from 2004 to 2008, the operating expenses grew at a rate of 3.18% per year. From 2009 to 2016, however, the Authority's operating budgets remained relatively flat, increasing only slightly. In fact, from the 2011 budget to the 2017 budget, the operating expenses (not including costs associated with snow removal and severe weather) increased only 5% over the six-year period. This is only 0.8% per year. In 2018, numerous issues and agreements were addressed with worker unions and other human resource items were addressed, resulting in a larger than normal increase in operating expenses. However, the Authority is continuing its current operational policies with emphasis on strict cost controls moving forward. As one example, it is anticipated that future improvements in operational efficiency will continue as the percentage of ***E-ZPass*** users increase.

At the September 29, 2015 Commission Meeting, the Authority awarded a contract for the upgrade and operation of the ***E-ZPass*** Customer Service Center to the current vendor, Conduent (formerly known as Xerox). The Authority has revised the contract requirements for the center's operations such that Conduent will be required to manage it under the philosophy of "active management for continuous improvement", a state-of-the-art management philosophy. With these new procedures, it is anticipated that efficiencies in the operations of the customer service center will be realized over the life of the new contract. The new ***E-ZPass*** Customer Service Center came online during October 2017 and is providing cost efficiencies with its operation.

Based on the above analyses, the Authority's Financial Plan and fiscal policies, and our professional judgment, we have applied a yearly increase factor of 2.5% for Operating Expenses for the years 2021 through 2030.

Based upon the factors presented above, our periodic review of the Authority's expenses and budgets, as well as our specific knowledge of the operations for the Turnpike and Parkway, projections for Operating Expenses for the years 2021 through 2030 are as follows:

Estimate of Operating Expenses (In thousands)	
Year	**Amount**
2021	$622,324
2022	$637,882
2023	$653,829
2024	$670,175
2025	$686,929
2026	$704,102
2027	$721,705
2028	$739,748
2029	$758,241
2030	$777,197

RESERVE FUND REQUIREMENTS

Historically, the Authority has made annual deposits to the Maintenance Reserve Fund to provide funding for significant maintenance of the bridges and roadways. The Special Projects Reserve Fund was created to provide funding for various other types of projects including safety improvements, repairs and replacements of buildings and other facilities, maintaining equipment and vehicle fleets, and improvements in administrative, toll collection, and communication systems. In short, the two funds provide for the maintenance and improvement of all elements that in some manner contribute to the proper and efficient operation of the Authority's toll road assets.

Currently, the Authority has approximately 4,477 lane miles of pavement, 1,118 bridges that require deck maintenance, superstructure and substructure maintenance, and painting. The Maintenance Reserve Fund budget will generally provide for the following:

- Resurface 400 lane-miles per year (move from a 15-year cycle to a 12-year cycle to resurface the entire roadway)
- Re-deck approximately eight to ten bridge decks per year
- Maintain all bridge decks (1,118) in a state of good repair
- Paint bridges (15-year cycle for painting all bridges)

The reserve fund amounts presented below are estimates of the annual requirements to meet the needs of the Authority for the purposes cited above. The projected amounts reflect a continuation of the Authority's historic policies and practices regarding the application of the funds and allows for annual increases commensurate with historical trends and current day economic conditions in addition to the needs of the infrastructure. These amounts are necessary and sufficient to meet the needs of the Authority's system and are consistent with those presented in Consulting Engineer's reports prepared by HNTB Corporation that accompanied previous official statements. The following table presents the projected costs to maintain the Turnpike and Parkway during the period 2021 through 2030. In arriving at the amounts, it has been assumed that inflation will increase modestly during the estimate period.

Reserve Fund Deposits (In thousands)		
Year	**Maintenance Reserve Fund Deposits**	**Special Project Reserve Fund Deposits**
2021	$160,000	$50,000
2022	$200,000	$50,000
2023	$210,000	$51,500
2024	$220,000	$53,045
2025	$230,000	$54,636
2026	$236,900	$56,275
2027	$244,007	$57,964
2028	$251,327	$59,703
2029	$258,867	$61,494
2030	$266,633	$63,339

CONCLUSIONS

This report has presented information to be applied in developing the financial program for the Authority and to assist in planning capital projects for the Turnpike and Parkway. On both roads, there are roadway sections and bridges that are nearly 70 years old. Many projects that make up the CIP provide major reconstruction that is necessary to maintain the facilities in proper condition for safe and convenient use by the traveling public. Timely implementation of this type of extraordinary maintenance is necessary to reduce the risk of revenue loss. Other projects included in the CIP are improvements, enhancements, and asset additions that are deemed necessary. Completion of these projects will improve safety and operations and likely increase revenues.

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APPENDIX D

SUMMARY OF GENERAL BOND RESOLUTION
AND CERTAIN DEFINITIONS

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SUMMARY OF GENERAL BOND RESOLUTION AND CERTAIN DEFINITIONS

A brief description of the General Bond Resolution and certain definitions used therein is included in this Appendix D. Such descriptions do not purport to be comprehensive or definitive and all references herein to the General Bond Resolution are qualified in their entirety by reference to the full text of the General Bond Resolution.

CERTAIN DEFINITIONS

The following is a summary of the definitions of certain terms used in the General Bond Resolution :

"Accreted Value" means, with respect to Capital Appreciation Bonds, the amount to which, as of any specified time, the principal of any such Bond has been increased by accretion, all as may be provided in an applicable Series Resolution.

"Accrued Debt Service" means, as of any date of calculation and with respect to any Series, 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, (ii) all amounts due and payable by the Authority and all amounts to accrue to the end of the then calendar month pursuant to a Qualified Swap, and (iii) Principal Installments due and unpaid for such Series and that portion of the Principal Installment for such Series next due which would have accrued to the end of such calendar month if deemed to accrue monthly from a date one year prior to its due date or from the date of issuance of each such Series, whichever is later.

"Aggregate Debt Service" means, for any calendar year and as of any date of calculation, the sum of the amounts of Debt Service for such year with respect to all Series of Bonds then Outstanding and all Qualified Swaps then in effect.

"Annual Budget" means the annual budget, as amended or supplemented, adopted or in effect for a particular calendar year pursuant to the General Bond Resolution.

"Arts Center" means the Garden State Arts Center (currently known as the PNC Bank Arts Center), which is owned by the Authority.

"Authority" means the New Jersey Turnpike Authority, a body corporate and politic organized and existing under the New Jersey Turnpike Authority Act of 1948, constituting Chapter 454 of the Laws of New Jersey of 1948, as amended and supplemented from time to time.

"Authorized Denomination" means the minimum denomination, or any integral multiple thereof, in which a particular Series of Bonds may be issued pursuant to the applicable Series Resolution. In the case of Capital Appreciation Bonds, the Authorized Denominations may be stated in terms of Accreted Value at maturity or such earlier time as the Bonds are required to commence paying interest.

"Authorized Officer" means any member of the Authority or any officer or employee of the Authority authorized to perform specific acts or duties by resolution duly adopted by the Authority.

"Bond" or **"Bonds"** means any Bond or Bonds authenticated and delivered under and pursuant to the General Bond Resolution and an applicable Series Resolution and any obligations issued on or after August 20, 1991 under, or pursuant to the authority of, the 1984 Resolution which the Authority determines are entitled to the benefits of the General Bond Resolution. The term "Bond" shall include

Parity Variable Rate Bonds, any short term note or other debt obligation of the Authority, but shall not include any Variable Rate Debt, Commercial Paper or any Subordinated Indebtedness.

"Capital Appreciation Bonds" means any Bond issued pursuant to the General Bond Resolution and a Series Resolution which do not pay interest either until maturity or until a specified date prior to maturity, but whose amount increases periodically by accretion to a final principal amount.

"Charges Fund" means the Charges Fund established in the applicable Series Resolution related to a Qualified Swap to provide for the payment of fees and charges of the Standby Purchaser, the Remarketing Agent and the Tender Agent.

"Code" means the Internal Revenue Code of 1986, as amended, or any successor thereto, as the same may be in effect from time to time.

"Commercial Paper" means any note or other obligation of the Authority, subject to renewal at the end of any rate period, other than Variable Rate Debt, the term of which (prior to any renewal thereof) does not exceed 270 days.

"Consulting Engineers" means such engineer or engineering firm or corporation as at the time shall be retained by the Authority pursuant to the General Bond Resolution to perform the acts and carry out the duties provided for such Consulting Engineers in the General Bond Resolution.

"Cost of Construction" means with respect to any Project, the cost of construction and/or acquisition, and equipping, including without limitation, bridges or crossings over or under rivers, streams or other waters or over highways and railroads, the cost of acquisition of all land, rights-of-way, property, rights, casements and interests acquired or to be acquired by the Authority, 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 response costs, direct and indirect (including but not limited to the costs of testing, investigation, feasibility studies, remediation, treatment, clean-up, removal, litigation, fines and penalties related thereto) incurred with respect to any environmental hazard or perceived environmental hazard under federal, State or local laws or regulations and any third party claims with respect to such hazard or perceived hazard, 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, the cost of any indemnity and surety bonds and premiums on insurance during construction, administrative expenses, legal fees, cost of audits, the cost of all machinery and equipment, initial inventories, financing expenses, fees and expenses of the Fiduciaries and costs of keeping accounts and making reports required by the General Bond Resolution, cost of traffic estimates and of engineering, financial and legal services, plans, specifications, surveys, estimates of costs and revenues, and other expenses necessary or incident to determining the feasibility or practicability of constructing or acquiring such Project, amounts, if any, required by the General Bond Resolution to be paid into the Debt Service Fund, the Debt Reserve Fund, the Maintenance Reserve Fund or the Special Project Reserve Fund, payments when due (including without limitation, on any early termination date) under a Qualified Swap 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 Variable Rate Debt, Commercial Paper and Subordinated Indebtedness, incurred for such Project, all to the extent applicable to the construction and/or acquisition of such Project and payable by the Authority, and such other expenses payable by the Authority not specified herein as may be necessary or incident to the construction and/or acquisition of such Project and the placing of such Project in operation.

"Credit Facility" means any letter of credit, standby bond purchase agreement, line of credit, surety bond, insurance policy or other insurance commitment or similar agreement (other than a Qualified Swap or an Exchange Agreement), satisfactory to the Authority, that is provided by a commercial bank, insurance company or other entity, with a current long term rating (or whose obligations thereunder are guaranteed by an entity with a long term rating) from Moody's and S&P not lower than the credit rating of any Series of Bonds, to provide support for a Series of Bonds or for any issue of Variable Rate Debt, Commercial Paper or Subordinated Indebtedness, and shall include any Substitute Credit Facility.

"Credit Issuer" means the issuer of the Credit Facility or any Substitute Credit Facility.

"Debt Reserve Fund" means the Debt Reserve Fund established in the General Bond Resolution to secure the Bonds.

"Debt Reserve Requirement" means with respect to all Bonds an amount equal to the lesser of (i) the greatest amount of interest accruing on the Outstanding Bonds in any one calendar year taking into account the increased Accreted Value of Capital Appreciation Bonds in such calendar year (except that the incremental amount attributable to any Parity Variable Rate Bonds may be based upon the fixed rate of interest as set forth in the Series Resolution for such Bonds), determined as of any particular date or (ii) the maximum amount permitted by Section 148(d)(1) of the Code.

"Debt Service" means, for any period, as of any date of calculation and with respect to any Series, 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 Bond proceeds deposited in the Debt Service Fund, (ii) all net amounts, if any, due and payable by the Authority under a Qualified Swap during such period, and (iii) that portion of each Principal Installment for such Series which would accrue during such period if such Principal Installment were deemed to accrue monthly from a date one year prior to its due date or from the date of issuance of such Series, whichever is later, such amounts in clauses (i) and (iii) 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; provided however, that in calculating Aggregate Debt Service for purposes of meeting the requirements for issuing Refunding Bonds under the General Bond Resolution and in calculating the Net Revenue Requirement for purposes of meeting the requirements for issuing Non-Refunding Bonds and Refunding Bonds and complying with the Authority's covenants concerning tolls and charges under the General Bond Resolution, Debt Service on Bonds for which the Authority has entered into a Qualified Swap shall be calculated assuming that the interest rate on such Bonds shall equal the stated fixed rate on the Qualified Swap or, if applicable and if greater than such stated fixed rate, the composite rate for the Authority's Parity Variable Rate Bonds for the twelve (12) month period preceding such calculation or such lesser period, if any, of at least three (3) months during which such Parity Variable Rate Bonds were Outstanding, in either case resulting in no assumed payment for purposes of clause (ii) above.

"Depository" means any bank, national banking association, savings or savings and loan institution or trust company selected by the Authority as a depository of moneys and securities held under the provisions of the General Bond Resolution, and may include the Trustee and may include the New Jersey Cash Management Fund.

"Exchange Agreement" means, to the extent from time to time permitted by applicable law, any interest exchange agreement, interest rate swap agreement, currency swap agreement or other contract or agreement, other than a Qualified Swap, authorized, recognized and approved by the Authority as an Exchange Agreement and providing for (i) certain payments by the Authority from the General Reserve Fund and (ii) payments by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, or whose obligations under an Exchange Agreement are guaranteed by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability are rated not less than A3 by Moody's and A- by S&P, or the equivalent thereof by any successor thereto; which payments by the Authority and counterparty are calculated by reference to fixed or variable rates and constituting a financial accommodation between the Authority and such counterparty.

"Federal Securities" means (i) any direct and general obligations of, or any obligations guaranteed by, the United States of America, including but not limited to interest obligations of the Resolution Funding Corporation or any successor thereto, (ii) any obligations of any state or political subdivision of a state (collectively "Municipal Bonds") which Municipal Bonds are fully secured as to principal and interest by an irrevocable pledge of moneys or direct and general obligations of, or obligations guaranteed by, the United States of America, which moneys or obligations are segregated in trust and pledged for the benefit of the holders of the Municipal Bonds, and (iii) certificates of ownership of the principal or interest of direct and general obligations of, or obligations guaranteed by, the United States of America, which obligations are held in trust by a commercial bank which is a member of the Federal Reserve System.

"Feeder Road" means any road which in the opinion of the Authority creates or facilitates access to the Turnpike System and the acquisition, construction or repair of which by the Authority will increase or maintain Net Revenues after giving effect to the costs to the Authority of acquiring, constructing, repairing, maintaining and operating such road.

"Fiduciary" or **"Fiduciaries"** means the Trustee, the Registrar, the Tender Agent and the Paying Agents, or any or all of them, as may be appropriate.

"Fitch" means Fitch Ratings and any successor thereto.

"General Project" means a project, other than a Turnpike Project, which the Authority is authorized by law to undertake and all or a portion of the costs of which will be paid from the General Reserve Fund or from the proceeds of Subordinate Indebtedness.

"Investment Securities" means any of the following securities legal for the investment of the Authority funds at the time of purchase thereof:

(i) Federal Securities;

(ii) Bonds, debentures, notes or other evidences of indebtedness issued by any agency or instrumentality of the United States to the extent such obligations are guaranteed by the United States or by another such agency the obligations (including guarantees) of which are guaranteed by the United States;

(iii) Bonds, debentures, notes or other evidences of indebtedness issued by any of the following agencies: Government National Mortgage Association, Federal Land Banks, Federal Home Loan Mortgage Corporation, Federal National Mortgage Association, Federal home Loan Banks, Federal Intermediate Credit Banks, Banks for Cooperatives, Tennessee Valley Authority, United States Postal Service, Farmers Home Administration, Export-Import Bank, Federal Financing Bank and Student Loan Marketing Association;

(iv) Negotiable or non-negotiable certificates of deposit issued by any bank, trust company or national banking association, which certificates of deposit shall be continuously secured or collateralized by obligations described in subparagraphs (i) or (ii) of this definition, which shall have a market value (exclusive of accrued interest) at all times at least equal to the principal amount of such certificates of deposit and shall be lodged with the Trustee, as custodian, by the bank, trust company or national banking association issuing such certificates of deposit;

(v) Uncollateralized negotiable or non-negotiable certificates of deposit issued by any bank, trust company or national banking association, the unsecured obligations of which are rated in one of the two highest rating categories, without regard to rating sub-categories, by Moody's and S&P;

(vi) Repurchase agreements collateralized by obligations described in subparagraphs (i), (ii) or (iii) of this definition with any registered broker/dealer subject to the Securities Investors' Protection Corporation jurisdiction, which has an uninsured, unsecured and unguaranteed obligation rated "Prime-1" or "A3" or better by Moody's and "A-1" or "A" or better by S&P, or any commercial bank with the above ratings, provided:

(a) a master repurchase agreement or specific written repurchase agreement governs the transaction, which characterizes the transaction as a purchase and sale of securities,

(b) the securities are held free and clear of any lien by the Trustee or an independent third party acting solely as agent for the Trustee, and such third party is (i) a Federal Reserve Bank, (ii) a bank which is a member of the Federal Deposit Insurance Corporation and which has combined capital, surplus, and undivided profits of not less than $75,000,000, or (iii) a bank approved in writing for such purpose by each Credit Issuer, if any, and the Trustee shall have received written confirmation from such third party that it holds such securities, free and clear of any lien, as agent for the Trustee,

(c) a perfected first security interest under the Uniform Commercial Code, or book entry procedures prescribed at 31 CFR 306.1 *et seq*. or 31 CFR 350.0 *et seq*. or a successor provision in such securities is created for the benefit of the Trustee,

(d) the repurchase agreement has a term of six months or less, or the Authority will value the collateral securities no less frequently than monthly and will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within two business days of such valuation,

(e) the repurchase agreement matures on or before a debt service payment date (or other appropriate liquidation period), and

(f) the fair market value of the securities in relation to the amount of the repurchase obligation is equal to at least 100%.

(vii) Banker's acceptances, eurodollar deposits and certificates of deposit (in addition to the certificates of deposit provided for by subparagraphs (iv) and (v) above) of the domestic branches of foreign banks having a capital and surplus of $1,000,000,000 or more, or any bank or trust company organized under the laws of the United States of America or Canada, or any state or province thereof, having capital and surplus, in the amount of $1,000,000,000; provided that the aggregate maturity value of all such banker's acceptances and certificates of deposit held at any time as investments of funds under the General Bond Resolution with respect to any particular bank, trust company, or national association shall not exceed 5% of its capital and surplus; and provided further that any such bank, trust company, or national association shall be rated in one of the two highest rating categories, without regard to rating sub-categories, by both S&P and Moody's;

(viii) Other obligations of the United States of America or any agency thereof which may then be purchased with funds belonging to the State or which are legal investments for savings banks in the State;

(ix) Deposits in the New Jersey Cash Management Fund;

(x) Obligations of any state, commonwealth or possession of the United States or a political subdivision thereof or any agency or instrumentality of such a state, commonwealth, possession or political subdivision, provided that at the time of their purchase such obligations are rated in either of the two highest rating categories by both S&P and Moody's; and

(xi) Commercial paper with a maturity date not in excess of 270 days rated A-1+ by S&P and P-1 by Moody's at the time of such investment, issued by an entity incorporated under the laws of the United States or any state thereof.

"Liquidity Facility" means any letter of credit, line of credit or standby loan commitment made available to fund purchases of Variable Rate Debt, Commercial Paper or Subordinated Indebtedness upon maturity or mandatory optional tender of such obligations; such Liquidity Facility may be part of, or separate from, any Credit Facility or Substitute Credit Facility supporting such obligations.

"Maintenance Reserve Payment" means any amount provided in the Annual Budget for any calendar year to be deposited in the Maintenance Reserve Fund during such year.

"Moody's" means Moody's Investors Service, Inc. and any successor thereto.

"Net Revenue Requirement" means, with respect to any period of time, an amount equal to the greater of (i) the sum of Aggregate Debt Service, Maintenance Reserve Payments, Special Project Reserve Payments and payments, if any, to the Charges Fund for such period or (ii) 1.20 times the Aggregate Debt Service for such period (excluding, for purposes of clause (ii) only, any payment due and payable by the Authority under a Qualified Swap upon an early termination thereof).

"Net Revenues" means, for any calendar year or other period of time, the Pledged Revenues during such year or period less the amounts of the Operating Expenses for such year or period.

"Non-Refunding Bonds" means all Bonds issued pursuant to Section 203 of the General Bond Resolution.

"Operating Expenses" means the Authority's expenses for operation, maintenance, repairs, ordinary replacement and ordinary reconstruction of the Turnpike System and ordinary acquisition of equipment for the Turnpike System; including, without limiting the generality of the foregoing, all policing, administrative and engineering expenses, legal and financial advisory expenses, fees and expenses of the Fiduciaries, required payments to pension, retirement, health and hospitalization funds, insurance premiums, Credit Facility fees (except Credit Facility fees, charges and premiums to the extent such fees, charges and premiums are treated as interest under the Code) and any provision or reserves for self-insurance, all arbitrage rebate payments required by Section 148 of the Code to be made from time to time to the United States Government, and any other current expenses or obligations required to be paid by the Authority under the provisions of the General Bond Resolution or by law, all to the extent properly and directly attributable to the operation of the Turnpike System, but excluding any costs or expenses for new construction or any allowance for depreciation and any costs and expenses paid or required to be paid by any party other than the Authority.

"Parity Variable Rate Bonds" means Bonds issued pursuant to the General Bond Resolution and a Series Resolution bearing interest at a variable rate and specifying a maximum rate of interest permitted by law provided that at least one of the following conditions is met: (i) at the time of issuance, the Authority has entered into a Qualified Swap with respect to such Bonds or (ii) the Bonds bear interest at a variable rate, but are issued concurrently in equal par amounts with other Bonds bearing interest at a variable rate and which are required to remain Outstanding in equal amounts at all times, if the net effect of such equal par amounts and variable rates at times is a fixed rate of interest to the Authority.

"Pledged Revenues" means (i) all Turnpike Revenues, (ii) other revenues of the Authority, including but not limited to payments to the Authority under any Qualified Swap, but in all cases only to the extent specifically pledged pursuant to one or more Series Resolutions to secure Bonds issued under the General Bond Resolution, and (iii) investment income from any moneys or securities held under the General Bond Resolution and paid into the Revenue Fund.

"Principal Installment" means, as of any particular date of calculation and with respect to any particular future date and with respect to Bonds of a particular Series, (i) the principal amount of Outstanding Bonds of said Series which mature on such future date, taking into account the Accreted Value of any Capital Appreciation Bond but reduced by the aggregate principal amount of such Outstanding Bonds which would at or before said future date cease to be Outstanding by reason, but only by reason, of the payment when due and application in accordance with the General Bond Resolution of Sinking Fund Installments payable on or before said future date toward the retirement of such Outstanding Bonds, and (ii) the amount of any Sinking Fund Installment payable on said future date toward the retirement of any Outstanding Bonds of said Series.

"Purchase and Remarketing Fund" means, with respect to each Series of Bonds subject to tender purchase pursuant to the applicable Series Resolution, the Fund so designated in such Series Resolution.

"Qualified Swap" or **"Swap Agreement"** means, with respect to a Series of Bonds, any financial arrangement (i) that is entered into by the Authority with an entity that is a Qualified Swap Provider at the time the arrangement is entered into; (ii) which provides that the Authority shall pay to such entity an amount based on the interest accruing at a fixed rate on an amount equal to the principal amount of the Outstanding Bonds of such Series, and that such entity shall pay to the Authority an amount based on the interest accruing on a principal amount initially equal to the same principal amount as such Bonds, at a variable rate of interest computed according to a formula set forth in such arrangement (which need not be the same as the actual rate of interest borne by the Bonds) or that one shall pay to the other any net amount due under such arrangement; and (iii) which has been designated in writing to the Trustee by an Authorized Officer of the Authority as a Qualified Swap with respect to the Bonds; provided, however, that if the Bonds corresponding to such Qualified Swap are retired in whole, unless the Qualified Swap is also terminated, the Qualified Swap Provider shall then be entitled to receive a Counsel's Opinion from the law firm or firms rendering an opinion as to the Authority's obligations under the Swap Agreement on its date of issue, as to whether or not the Swap Agreement is a valid and binding obligation of the Authority after such retirement of the Bonds under then existing law.

"Qualified Swap Provider" means, with respect to a Series of Bonds, an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability or whose payment obligations under a Qualified Swap are guaranteed by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying are rated (at the time the subject Qualified Swap is entered into) at least as high as A3 by Moody's and A– by S&P, or the equivalent thereof by any successor thereto.

"Rating Agencies" means (i) each of Fitch, Moody's and S&P so long as each such agency shall have assigned a rating to any Series of Bonds and (ii) any other nationally recognized securities rating agency which shall have assigned a rating to any Series of Bonds.

"Series Resolution" means any resolution of the Authority adopted pursuant to the General Bond Resolution to authorize the issuance of a particular Series of Bonds.

"Special Project" means any (i) major resurfacing of the Turnpike System, replacement or reconstruction of the Turnpike System or any part thereof, or any other major or extraordinary repairs, renewals or replacements of the Turnpike System, (ii) studies, surveys, estimates and investigations in connection with any of the foregoing purposes, and (iii) advance or contribution authorized by the Act for the State of New Jersey's share or any portion thereof under the Federal aid highway laws of the cost of construction of any highway improvement determined by the Authority to be a major improvement necessary to restore or prevent physical damage to the Turnpike System, for the safe or efficient operation of such System, or to prevent loss of Pledged Revenues.

"Special Project Reserve Payment" means any amount provided or required to be provided in the Annual Budget for any calendar year to be deposited in the Special Project Reserve Fund during such year.

"Special Project Reserve Requirement" means, as of any date of calculation, (i) at any time during the period commencing January 1, 1992 and ending December 31, 1995, an amount equal to $25,000,000, (ii) for calendar year 1996, an amount equal to $30,000,000, (iii) for calendar year 1997, an amount equal to $35,000,000, (iv) for calendar year 1998, an amount equal to $40,000,000, (v) for calendar year 1999, an amount equal to $45,000,000, and (vi) for calendar year 2000 and each year thereafter, an amount equal to $50,000,000.

"Special Treasury Obligations" means United States Treasury Certificates of Indebtedness, Notes and Bonds-State and Local Government Series.

"S&P" means Standard & Poor's, a division of The McGraw-Hill Companies, Inc., and any successor thereto.

"Standby Agreement" means, with respect to a Series of Bonds, an irrevocable letter of credit and related reimbursement agreement, line of credit, standby bond purchase agreement or similar agreement providing for the purchase of all or a portion of the Bonds of such Series, as amended, supplemented or extended from time to time.

"Standby Purchaser" means, with respect to a Series of Bonds, the provider of the Standby Agreement for such Series of Bonds.

"State" means the State of New Jersey.

"Subordinated Indebtedness" means any evidence of indebtedness permitted to be issued in accordance with the provisions described herein under the caption "Variable Rate Debt; Commercial Paper; Subordinated Indebtedness".

"Substitute Credit Facility" means any letter of credit, standby bond purchase agreement, line of credit, surety bond, insurance policy or other insurance commitment or similar agreement (other than a

Qualified Swap or an Exchange Agreement), satisfactory to the Authority, that replaces a Credit Facility and is provided by a commercial bank, insurance company or other financial institution with a current long term credit rating (or whose obligations thereunder are guaranteed by a financial institution with a long term credit rating) from Moody's and S&P not lower than the credit rating of any Series of Bonds.

"Supplemental Resolution" means any resolution of the Authority adopted pursuant to Article XI of the General Bond Resolution.

"Tax Exempt Obligations" means Bonds of the Authority the interest on which is intended to be excluded from gross income of the Owners thereof for purposes of federal income tax, except for any alternative minimum or similar tax.

"Tender Agent" means, with respect to a Series of Bonds, any commercial bank or trust company organized under the laws of any state of the United States or any national banking association designated as a tender agent for such Series of Bonds, and its successor or successors hereafter appointed in the manner provided in the applicable Series Resolution.

"Traffic Engineers" means such engineer or engineering firm or corporation at the time retained by the Authority pursuant to the General Bond Resolution to perform the acts and carry out the duties provided for such Traffic Engineers in the Resolution.

"Turnpike Project" or **"Project"** means (a) any express highway, superhighway or motorway authorized under the Act to be acquired or constructed by or on behalf of the Authority and that, except for (i) the I-95 extension referred to in Section 19 of the Act and (ii) a proposed by-pass highway at Hightstown, is subject to tolls and charges by the Authority under Section 27:23-9 of the Act, and (b) the Arts Center, all bridges, tunnels, overpasses, underpasses, interchanges, entrance plazas, approaches, toll facilities, service areas, service stations, service facilities, communications facilities, park and ride projects, Feeder Roads and administration, storage and other buildings, machinery and equipment, and all other structures, facilities and appurtenances necessary for the construction, operation or maintenance of the Turnpike System and all replacements, improvements and modifications thereto, together in each case with all land and rights in land required therefor.

"Turnpike Revenues" means (i) all tolls, revenues, fees, charges, rents and other income and receipts derived from the operation of the Turnpike System, (ii) the proceeds of any business interruption insurance relating to the Turnpike System and of any other insurance which insures against loss of Turnpike Revenues, and (iii) amounts on deposit in the Construction Fund, the Special Project Reserve Fund and the General Reserve Fund, and available for deposit in the Revenue Fund and actually deposited therein.

"Turnpike System" means the existing New Jersey Turnpike and all Turnpike Projects in addition thereto.

"Variable Rate Debt" means obligations of the Authority, other than Parity Variable Rate Bonds, Commercial Paper or Subordinated Indebtedness, bearing interest at a variable rate and specifying a maximum rate of interest permitted by law.

SUMMARY OF CERTAIN PROVISIONS OF THE GENERAL BOND RESOLUTION

The following is a brief summary of certain provisions of the General Bond Resolution .

Issuance of Non-Refunding Bonds (General Bond Resolution, Section 203)

One or more Series of Non-Refunding Bonds may be issued for the purpose of (i) paying the Costs of Construction of a Project and (ii) to raise funds to complete any Project for which Non-Refunding Bonds were issued pursuant to clause (i) above, subject to the following conditions and tests, among others:

(1) The Net Revenues for any period of 12 consecutive calendar months (reflecting any adjustment in toll rates made at any time during such period as if such toll rates were effective since the beginning of such period out of the preceding 24 calendar months equal or exceed the Net Revenue Requirement for such 12 months without regard to the Bonds to be issued; and

(2) The estimated Net Revenues for the then current and each future calendar year to and including the fifth full calendar year after the estimated date when the Project will be placed in service equal or exceed the Net Revenue Requirement for each such year and Net Revenues in the fifth such calendar year equal or exceed future maximum Aggregate Debt Service in any year.

(3) There will be deposited (i) in the Debt Reserve Fund the amount, if any, necessary so that the balance in such fund equals the Debt Reserve Requirement, calculated immediately after delivery of such Non-Refunding Bonds, (ii) in any other Fund the amount required by the Series Resolution, and (iii) in the Construction Fund for the Project specified by the Series Resolution the remaining balance.

For the purposes of the above tests, the estimated Net Revenues are to be based on estimates by the Authority's Traffic Engineers, as defined in the General Bond Resolution, of Turnpike Revenues and estimates by the Authority's Consulting Engineers, as defined in the General Bond Resolution, of Operating Expenses and are to give effect to the construction of the Project for which such Bonds are being issued and any other uncompleted Project. The estimates of the Traffic Engineers are to reflect the effect of the construction, improvement or acquisition of any highway or other facility which any Federal, State or other agency is then projecting or planning and which, in their opinion, may be materially competitive with any part of the Turnpike System.

Issuance of Refunding Bonds (General Bond Resolution, Section 204)

One or more Series of Refunding Bonds may be issued to refund (i) any or all Outstanding Bonds of one or more Series or maturities within a Series or Bonds within a maturity or (ii) any Variable Rate Debt, Commercial Paper or Subordinated Indebtedness.

Bonds may be issued to refund outstanding Bonds only if, among other conditions, (i) either the Authority meets the tests described above under "ISSUANCE OF NON-REFUNDING BONDS" or Aggregate Debt Service is not increased for any calendar year as a result of such refunding and (ii) if there shall be in effect a Qualified Swap with respect to the Bonds to be refunded and such Qualified Swap shall be terminated upon the date such Refunding Bonds are issued, moneys in an amount sufficient to make the payment, if any, due by the Authority under such Qualified Swap upon such termination are deposited with the Trustee.

The issuance of Bonds to refund Variable Rate Debt, Commercial Paper or Subordinated Indebtedness is subject to substantially the same conditions and tests referred to above under "ISSUANCE OF NON-REFUNDING BONDS".

Pledge Effected by General Bond Resolution (General Bond Resolution, Sections 501 and 504)

The General Bond Resolution pledges for the payment of the principal and Redemption Price of, and interest on, the Bonds, and all obligations of the Authority under any Qualified Swap and certain Credit Facilities securing all or a portion of any Series of Bonds, in accordance with their terms and the provisions of the General Bond Resolution and such Qualified Swap and Credit Facilities, subject only to the provisions of the General Bond Resolution permitting the application thereof for the purposes and on the terms set forth in the General Bond Resolution: (i) the proceeds of the sale of the Bonds, (ii) all Pledged Revenues, and (iii) amounts on deposit in all Funds established by the General Bond Resolution, except for certain funds deposited in the Construction Fund and, under certain circumstances, the General Reserve Fund. The pledge and lien created by the General Bond Resolution may be modified by a Series Resolution or a supplemental resolution to provide for a pledge of amounts on deposit in particular funds or accounts to a particular Series of Bonds, the proceeds of which Series of Bonds funded such funds or accounts, superior to the pledge of such funds and accounts to other Bonds. The General Bond Resolution requires that the Authority shall pay out of moneys in the Revenue Fund, free and clear of any pledge created by the General Bond Resolution, all amounts required for reasonable and necessary Operating Expenses.

Funds

Construction Fund: The General Bond Resolution provides that the Authority shall establish within the Construction Fund a separate account for each Project the costs of which are to be paid in whole or in part out of the Construction Fund.

The Authority will pay into each separate account established for each Project the proceeds of Non-Refunding Bonds issued therefor, to the extent not required to make other required deposits. Amounts in each separate account established for each Project financed by Non-Refunding Bonds shall be applied to the purposes specified in the Series Resolution authorizing such Bonds. Certain insurance proceeds are also to be paid into the Construction Fund.

Moneys in the Construction Fund shall be invested by 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 the Costs of Construction or other costs payable from such moneys.

To the extent that other moneys are not available therefor, amounts in the Construction Fund, except for moneys accepted from the United States Government or the State on the condition that such moneys not be encumbered by the Authority's debt service obligations, shall be applied to the payment of Debt Service.

Upon completion, substantial completion or abandonment of any Project and upon certification of an Authorized Officer of the Authority, any amount remaining in the separate account established therefor not required to complete payment of the Costs of Construction shall be deposited in the Debt Reserve Fund to the extent necessary to meet the Debt Reserve Requirement, and the balance shall be deposited into the Revenue Fund or the Maintenance Reserve Fund as directed by the Authority.

(General Bond Resolution, Section 503)

Debt Service Fund: The Trustee shall pay or request the Depository holding such Fund to pay from the Debt Service Fund the following amounts (a) to the respective Paying Agents, (i) the payment of interest and maturing principal amounts of the Bonds when due, (ii) payment of the redemption price and accrued interest on the redemption of Bonds, and (iii) payment of the purchase price of Bonds purchased through application of moneys accumulated in this fund by reason of the payment of any Sinking Fund Installment, and (b) to the Qualified Swap Provider, any amounts due and payable by the Authority during such month pursuant to a Qualified Swap under which the Authority is the fixed rate payor. All amounts held at any time in the Debt Service Fund shall be held on a parity basis for the ratable security and payment of Accrued Debt Service for the benefit of the Owners of all Bonds and of any Qualified Swap Provider in proportion to the amounts accrued and due to each of them.

(General Bond Resolution, Section 505)

Debt Reserve Fund: Amounts in the Debt Reserve Fund are to be applied to make up any deficiency in the Debt Service Fund. The General Bond Resolution provides that as a condition to the issuance of each Series of Bonds there shall be deposited in the Debt Reserve Fund the amount, if any, necessary so that the amount in such Fund equals the Debt Reserve Requirement calculated immediately after the issuance of such Series of Bonds.

Whenever the moneys and securities on deposit in the Debt Reserve Fund, together with the amount in the Debt Service Fund, are sufficient to pay in full all outstanding Bonds in accordance with their terms, together with any obligations owed by the Authority under any Credit Facility or any Qualified Swap secured on a parity with the Bonds, the funds on deposit in the Debt Reserve Fund are to be transferred to the Debt Service Fund.

In lieu of the required deposits into the Debt Reserve Fund, the Authority may deposit into the Debt Reserve Fund a surety bond or an insurance policy or a letter of credit in an amount equal to the difference between the Debt Reserve Requirement and the sums then on deposit in the Debt Reserve Fund, if any. The surety bond, insurance policy or letter of credit shall be payable on any interest payment date on which moneys will be required to be withdrawn from the Debt Reserve Fund and applied to the payment of Debt Service and such withdrawal cannot be withdrawn from the Debt Reserve Fund and applied to the payment of Debt Service and such withdrawal cannot be met by amounts on deposit in the Debt Reserve Fund or provided from any other Fund under the Resolution. The insurer providing such surety bond or insurance policy shall be an insurer whose municipal bond insurance policies insuring the payment, when due, of the principal of and interest on municipal bond issues results in such issues being rated in the highest rating category by both S&P and Moody's or any insurer who holds the highest policyholder rating accorded insurers by A.M. Best & Co. or any comparable service or successor service, provided that if the insurer is rated by A.M. Best & Co. but not by both Moody's and S&P, the Authority shall not agree to purchase the surety bond or insurance policy from such insurer unless the Authority gives at least fifteen (15) days' advance notice of its intention to do so to each of the Rating Agencies, which notice shall specify the identity of such insurer. The letter of credit issuer shall be a bank or trust company which is rated not lower than the second highest rating category (without regard to rating sub-categories) by both Moody's and S&P, and the letter of credit itself shall be rated in the highest category of both such ratings agencies. If a disbursement is made pursuant to a surety bond, an insurance policy or a letter of credit, the Authority shall be obligated either (i) to reinstate the maximum limits of such surety bond, insurance policy or letter of credit or (ii) to deposit into the Debt Reserve Fund, funds in the amount of the disbursement made under such surety bond, insurance policy or letter of credit, or a combination of such alternatives, as shall provide that the amount in the Debt Reserve Fund equals the Debt Reserve Requirement within a time period not longer than would be required to restore the Debt Reserve Fund by application of moneys in the Revenue Fund. The General Bond Resolution requires that if there is a reduction or suspension of any of the credit ratings of any insurer or letter of credit bank providing support for the Debt Reserve Fund, the Authority shall, within the time period provided in the General

Bond Resolution, provide a substitute surety bond, insurance policy or letter of credit meeting the requirements of the General Bond Resolution or shall deposit cash in the Debt Reserve Fund so that the amount in such Fund shall equal the Debt Reserve Requirement.

The Authority's payment obligation under any Qualified Swap shall be made from the Debt Service Fund if the Authority's obligation under the Qualified Swap remains a fixed rate obligation; otherwise, such payment shall be made from the General Reserve Fund. The Authority will not enter into any Qualified Swap unless it gives it at least fifteen (15) days' advance notice of its intention to do so to each of the Rating Agencies, which notice shall specify the identity of the Qualified Swap Provider.

(General Bond Resolution, Section 506)

Maintenance Reserve Fund: Amounts in the Maintenance Reserve Fund may be applied to the cost of major resurfacing, replacement or reconstruction of the Turnpike System and major or extraordinary repairs, renewals, or replacement of the Turnpike System, to the extent stated in a certificate of the Consulting Engineers filed with the Trustee and the Authority to be necessary (i) to restore or prevent physical damage to the Turnpike System or any part thereof, (ii) for the safe and efficient operation of the Turnpike System or (iii) to prevent loss of Pledged Revenues. Under certain conditions this fund is also to be used to meet certain deficiencies which may require transfers to be made to the Debt Service Fund.

(General Bond Resolution, Section 507)

Special Project Reserve Fund: Amounts in the Special Project Reserve Fund may be applied to the cost of one or more Projects or Special Projects. This fund may also be used in an amount up to 20% of the amount on deposit therein on the first day of any year to meet budgeted payments into the Maintenance Reserve Fund. Under certain circumstances, it is also to be used to meet deficiencies in the following Funds: the Debt Service Fund, the Debt Reserve Fund, the Charges Fund and the General Reserve Fund and excess amounts may be deposited in the Revenue Fund.

(General Bond Resolution, Section 509)

General Reserve Fund: Amounts in the General Reserve Fund are to be used to make up deficiencies in the Revenue Fund, the Debt Service Fund, the Debt Reserve Fund, the Charges Fund, the Maintenance Reserve Fund and the Special Project Reserve Fund. Amounts in this fund which are not required to remedy any such deficiency may be applied, subject to the terms of any pledge securing Subordinated Indebtedness. Variable Rate Debt, Commercial Paper or any Credit Facility supporting such obligations and any Exchange Agreement to: (i) the purchase or redemption of any Bonds and expenses in connection therewith; (ii) payment of the principal or redemption price of and interest on any Variable Rate Debt or Commercial Paper; (iii) payment of the principal or redemption price of and interest on any Subordinated Indebtedness; (iv) payments into the Construction Fund; (v) or the provision of reserves for these purposes; (vi) payments into the Revenue Fund; or (vii) any other corporate purpose of the Authority, including but not limited to any payments to be made to the State with respect to the development of State transportation projects.

(General Bond Resolution, Section 510)

Satisfaction of Sinking Fund Installments (General Bond Resolution, Section 505)

The Trustee, from amounts on deposit in the Debt Service Fund for Sinking Fund Installments, and the Authority (in lieu of depositing moneys in the Debt Service Fund) from any available funds, may purchase Bonds subject to redemption by operation of Sinking Fund Installments. Bonds so retired may be credited against the Sinking Fund Installment at the then applicable sinking fund Redemption Price. If the principal amount of such Bonds so retired through application or in lieu of any Sinking Fund Installment shall exceed the amount of such Sinking Fund Installment, such excess shall be credited toward future Sinking Fund Installments in such order as the Authority shall determine, provided, however, that the Authority shall give notice to the Trustee of its election to credit any such excess to a Sinking Fund Installment at least 45 days prior to the due date thereof.

Variable Rate Debt; Commercial Paper; Subordinated Indebtedness (General Bond Resolution, Sections 511 and 512)

The Authority may, at any time or from time to time, issue Variable Rate Debt and Commercial Paper payable out of, and which may be secured by a pledge of, such amounts in the General Reserve Fund as may from time to time be available for the purpose of payment thereof; provided, however, that (a) such indebtedness shall be incurred only for any one or more of the purposes set forth above under the description of the General Reserve Fund and the proceeds of such Variable Rate Debt or Commercial Paper shall only be applied for such purpose or purposes, (b) the Authority shall covenant to provide sufficient moneys in the General Reserve Fund to pay the Variable Rate Debt and Commercial Paper when and as due, and (c) such indebtedness shall be, and shall be expressed to be, subordinate in all respects to the Bonds issued or to be issued under the General Bond Resolution and subordinate to all obligations payable from Funds other than the General Reserve Fund but senior in all respects to any pledge to secure Subordinated Indebtedness. No Variable Rate Debt or Commercial Paper may be issues unless the Authority has first determined by certified resolution that the issuance of such Variable Rate Debt or Commercial Paper, as applicable, will not impair the financial viability of the Authority or its operations.

The Authority may incur Subordinated Indebtedness for one or more of the purposes mentioned above under description of the General Reserve Fund. Such indebtedness may be payable out of and secured by a pledge of such amounts in the General Reserve Fund as may from time to time be available therefor. Such pledge must be subordinate to the pledge created by the General Bond Resolution.

Variable Rate Debt, Commercial Paper and Subordinated Indebtedness may be issued without regard to the level of Net Revenues of the Authority but all Debt Service must be paid before any further payment of principal or interest on Variable Rate Debt, Commercial Paper or Subordinated Indebted if any of the following events occur: (i) an event of default under the General Bond Resolution resulting from the non-payment of Debt Service (until cured); (ii) an event of default occurs under the General Bond Resolution with respect to Bonds resulting in acceleration of Principal Installments and interest on Bonds; (iii) the principal and interest on Variable Rate Debt, Commercial Paper or Subordinated Indebtedness is accelerated; (iv) the Authority becomes insolvent; or (v) early termination of a Qualified Swap. Any event of default with respect to Variable Rate Debt, Commercial Paper or Subordinated Indebtedness shall not in itself create the right to declare an event of default with respect to Bonds. No Subordinated Indebtedness may be issued unless the Authority has first determined by certified resolution that the issuance of such Subordinated Indebtedness will not impair the financial viability of the Authority and its operations.

In connection with the issuance of Variable Rate Debt, Commercial Paper or Subordinated Indebtedness, the Authority may enter into Exchange Agreements with respect to such obligations if the Authority determines that such Exchange Agreement will assist the Authority in more effectively managing its interest costs. The Authority's payment obligation under any such Exchange Agreement shall be made from the General Reserve Fund.

Investment of Certain Funds (General Bond Resolution, Section 603)

The General Bond Resolution provides that certain funds held thereunder may, and in the case of the Debt Service Fund, the Debt Reserve Fund and the Charges Fund shall, be invested and reinvested to the fullest extent practicable in Investment Securities, as defined in the General Bond Resolution. The General Bond Resolution provides that such investments shall mature no later than such times as shall be necessary to provide moneys when needed for payments from such funds and, in the case of the following funds, not later than the period set forth below:

- the Revenue Fund, one year,
- the Debt Reserve Fund, five years,
- the Maintenance Reserve Fund, two years,
- the Special Project Reserve Fund, two years, and
- the General Reserve Fund, three years.

Net Investment income from investment of the Debt Service Fund shall be deposited in such Fund or Funds as the Authority directs from time to time provided that all deposits from the Revenue Fund required by the General Bond Resolution are made. Net investment income from investment of the Debt Reserve Fund shall be deposited in the same manner as other excess moneys in such fund as provided in the General Bond Resolution. Net investment income from all other Funds, except the Construction Fund, shall be paid into the Revenue Fund. Net investment income from the Construction Fund shall be held in the Construction Fund.

Valuation and Sale of Investments (General Bond Resolution, Section 604)

Investment securities in any Fund created under the provisions of the General Bond Resolution shall be deemed at all times to be part of such Fund, and any profit realized from the liquidation of such investments shall be credited to such Fund and any loss resulting from liquidation of such investment shall be charged to such Fund.

A valuation of the Debt Reserve Fund shall be made as of December 1 in each year. The value of securities held under the General Bond Resolution shall mean the amortized value thereof, provided, however, that all Special Treasury Obligations shall be valued at par and those obligations which are redeemable at the option of the holder shall be valued at the price at which such obligations are then redeemable. The computations shall include accrued interest on securities paid as a part of the purchase price thereof and not collected. Amortized value, when used with respect to a security purchased at par, means the purchase price of such security and when used with respect to a security purchased at a premium above or discount below par, means as of any subsequent date of valuation, the value obtained by dividing the total premium or discount by the number of days remaining to maturity on any such security at the time of such security at the time of such purchase and by multiplying the amount as calculated by the number of days having passed since the date of purchase and (i) in the case of a security purchased at a premium, by deducting the product thus obtained form the purchase price, and (ii) in the case of a security purchase at a discount, by adding the product thus obtained to the purchase price.

Annual Budget (General Bond Resolution, Section 710)

The Authority covenants that, not less than 40 days before the beginning of any calendar year, the Authority shall prepare and file with the Trustee a preliminary budget of Operating Expenses and reserves therefor for the ensuing year. Each such budget and each Annual Budget shall include, in addition to appropriations for all anticipated Operating Expenses and reserves therefor, provision for Maintenance Reserve Payments and for Special Project Reserve Payments. Such preliminary budget and any Annual Budget may set forth such additional material as the Authority may determine and shall contain a certificate of the Consulting Engineers approving such preliminary budget or such Annual Budget, as the case may be.

On or before the 15th day of each calendar year, the Authority shall finally adopt the Annual Budget for such year. The Authority may at any time adopt an amended Annual Budget for the remainder of the then current calendar year. Copies of the Annual Budget and of any amended Annual Budget shall be promptly filed with the Trustee, for inspection by Bondholders.

The Special Project Reserve Payments included in the Annual Budget shall be in an amount equal to the difference between (i) the balance on deposit in the Special Project Reserve Fund on the date of adoption of the Annual Budget and (ii) the Special Reserve Requirement.

If, in the Annual Budget for any calendar year or in any amended Annual Budget for any calendar year, the total Operating Expenses stated exceed 110% of the total Operating Expenses stated in the preliminary budget for such year as filed with the Trustee, such Annual Budget or amended Annual Budget shall not be effective or supersede any prior budget until the Authority shall have prepared a report in reasonable detail as to the reasonableness and necessity thereof, file copies of such report with the Trustee, and thereafter held a public hearing thereon at which any Bondholder may appear in person or by agent or attorney and present any objections he may have.

If the Owners of 25% in aggregate principal amount of the Bonds then Outstanding shall so request in writing at the time of the public hearing mentioned in the immediately preceding paragraph, the Authority shall obtain a report by the Consulting Engineers as to the reasonableness and necessity of such budget, and the Annual Budget for such year shall not be adopted until ten days after a copy of such report shall have been filed with the Trustee.

Toll Covenants (General Bond Resolution, Sections 713 and 714)

The Authority covenants in the General Bond Resolution that:

(i) It will at all times fix, charge and collect such tolls for the use of the Turnpike System as are required in order that in each calendar year Net Revenues shall at least equal the Net Revenue Requirement for such year.

(ii) On or before December 1 in each year, the Authority will review its financial condition in order to estimate whether the Net Revenues for such year and for the next succeeding year will be sufficient to comply with the toll covenant described in paragraph (i) above. Such review shall take into consideration the completion of any uncompleted Projects and the issuance of future series of Bonds, if necessary, to finance the completion of such Projects. If the Authority determines that the Pledged Revenues may not be so sufficient, it will cause its Traffic Consultants to make a study and to recommend a schedule of tolls which will provide sufficient Pledged Revenues in the following year to comply with the toll covenant described in paragraph (i) above and will cause additional Pledged Revenues to be collected in the following and later years sufficient to eliminate any deficiency at the earliest practicable time. The Authority will place the recommended schedule of tolls in effect no later than the next April 1.

Failure to comply with the toll covenant described in paragraph (i) above in any calendar year will not constitute an event of default under the General Bond Resolution if either (a) the Authority complies with the covenant described in paragraph (ii) above or (b) the Authority's Traffic Consultants are of the opinion that a toll schedule which will comply with the toll covenant described in paragraph (i) above is impracticable at that time, and the Authority therefor cannot comply with the covenant described in paragraph (ii) above, and the Authority establishes a schedule of tolls which is recommended by its traffic consultants to comply as nearly as practicable with the tolls covenant described in paragraph (i) above.

The Authority will not reduce any toll (except by way of certain adjustments or reclassifications of toll rates as referred to below) unless the following conditions and tests shall be met:

(1) There shall have been delivered to the Trustee a certificate of an Authorized Officer of the Authority to the effect that the cumulative reductions in the immediately preceding 12 months, including the proposed and all other reductions as if they had been in effect for such period, would not reduce Net Revenues for such period by more than one percent (1%), with schedules of traffic and toll collections demonstrating such conclusion and that, taking into account such reductions, the Authority would have met the Net Revenue Requirements for such period; or

(2) (i) the Net Revenues for the preceding calendar year shall have equaled at least the Net Revenue Requirement for such preceding calendar year;

(ii) the estimated Net Revenues for the then current and each future calendar year to and including the latest maturity of the Bonds (giving effect to the proposed toll reduction but not to any additional traffic which might result therefrom) shall equal at least the Net Revenue Requirement (giving effect to future Series of Bonds estimated to be required to complete uncompleted Additional Projects) for each such year;

(iii) the Authority is not in default in the performance of any of the provisions of the Bonds or the General Bond Resolution or of any Qualified Swap; and

(iv) the amount in the Debt Reserve Fund is at least equal to the Debt Reserve Requirement.

For purposes of the test referred to in paragraph (2)(ii) above, the estimated Net Revenues are to be based on estimates by the Authority's Traffic Consultants of Turnpike Revenues and estimates by the Authority's Consulting Engineers of Operating Expenses, Maintenance Reserve Payments and Special Project Reserve Payments in each case giving effect to the completion of any uncompleted Turnpike Project. The estimates of the Traffic Consultants are to reflect the effect of the construction, improvement or acquisition of any highway or other facility which any Federal, State or other agency is then projecting or planning and which, in their opinion, may be materially competitive with any part of the Turnpike System.

The Authority may increase toll rates and make any other adjustment or reclassification of toll rates or establish special toll rates provided that such action (i) is concurred in by the Traffic Engineers and affects tolls accounting for less than 10% of the Turnpike Revenues, as evidenced by a certificate filed with the Trustee, or (ii) is subject to a certification of the Traffic Engineer, filed with the Trustee, that the changed tolls will not result in a reduction in Net Revenues by reason of collectibility, reduction in traffic or costs of operation or any other reason.

The Authority shall not grant free passage for the use of any portion of the Turnpike System subject to tolls, except (i) to members, officers and employees of the Authority actually in the performance of their duties or in the course of traveling to or from the place of the performance of such duties, to members of the New Jersey State Police Force, to members of any fire department or any local police department in the performance of their duties and to any public or private ambulance or rescue squad service for the emergency passage of its ambulance or rescue vehicles, (ii) by means of passes or otherwise, to such vehicles owned by individuals, corporations or partnerships with which the Authority has entered into leases, concession contracts or service and maintenance contracts, as in its discretion may be deemed necessary for the operation of concessions and facilities upon the Turnpike System, for the maintenance of such concessions or facilities and for the prompt and economical furnishing of emergency services to patrons of the Turnpike System or any concession or facility thereof, (iii) commuter buses (as defined from time to time by the Authority's regulations), but only if and to the extent that the Authority first determine by certified resolution that the exemption of such commuter buses from tolls will not impair the financial viability of the Authority and its operations, and (iv) to others by passes, provided that there shall not be more than fifty such passes outstanding at any one time.

Insurance (General Bond Resolution, Section 715)

The Authority covenants that it will at all times maintain, to the extent reasonable obtainable, the, following kinds and the following amounts of insurance, or otherwise make provision for the payment of claims against the Authority, with such variations as shall reasonable be required to conform to applicable standard or customary insurance practice and subject to such exceptions and permissible deductions as are ordinarily required, all to be determined by the Authority after consultation with its insurance consultants:

(1) Property insurance on all real and personal property, including bridges and viaducts owned by the Authority in sufficient amounts to cover direct physical loss or damage from causes normally insured against;

(2) Liability insurance to cover injury to persons or damage to property for claims arising out of the construction, maintenance, reconstruction or operation of the roadway and other facilities owned or operated by the Authority;

(3) Business interruption insurance covering loss of Pledged Revenues due to any interruption in the use of the roadway or other facilities of the Authority which would cause a loss of revenue to the Authority;

(4) Any coverage required to be maintained by any State or federal law, including, but not limited to, workers' compensation coverage, and motor vehicle liability coverage;

(5) Any coverage which is customarily deemed appropriate to protect the interests of the Authority during any construction or reconstruction of any portion of the Turnpike System; and

(6) Any additional insurance which may be necessary or advisable to protect the interests of the Authority.

Reports (General Bond Resolution, Sections 717 and 718)

The Authority covenants to file with the Trustee, and to mail to those Bondholders who file with it their names and addresses for such purpose, periodic reports on the operations of the Turnpike System, including statements of traffic, Pledged Revenues and Net Revenues. Quarterly reports are to cover the preceding quarter and 12-month period, with comparative data for corresponding periods a year earlier. In addition, semi-annual reports are to cover a Six-month period and contain, among other things, a statement of transactions in and investments of funds established by the General Bond Resolution, and annual reports are to contain statements of traffic, Pledged Revenues, Net Revenues, fund transactions and investments audited by an independent public accountant or accounting firm of recognized national standing approved by the Trustee. The Authority will cause an annual audit to be made of its books and accounts relating to the Turnpike System for the preceding calendar year.

With respect to each Project under construction, the Authority covenants to file and to mail (as provided above) quarterly construction progress reports prepared by its consulting engineers, with comparisons between actual elapsed times and costs and previously estimated times and costs.

Arbitrage (General Bond Resolution, Section 720)

The Authority covenants that it will not at any time take any action or fail to take any action which would cause any Tax Exempt Obligation to be an arbitrage bond within the meaning of the Code or permit any of the proceeds of Tax Exempt Obligations or any other funds of the Authority to be used directly or indirectly to acquire any securities or obligations the acquisition of which would cause any Tax Exempt Obligation to be an arbitrage bond within the meaning of the Code.

Events of Default and Remedies (General Bond Resolution, Sections 801 and 804)

The General Bond Resolution defines events of default which include, among others, (i) defaults (a) in the due and punctual payment of the principal or redemption price of any Bond when and as the same shall become due and payable or the payment of the purchase price of a tendered Bond on any date on which Bonds are required to be purchased pursuant to a Series Resolution, (b) in the due and punctual payment of any installment of interest on any Bond, (c) in the compliance with the toll covenant of the General Bond Resolution, except as stated under "Toll Covenants" above, (d) the Authority undertaking the filing of a petition seeking a composition of indebtedness under the federal bankruptcy laws, or under any other applicable law or statute of the United States of America or of the State of New Jersey, (e) in the performance of any other covenant or condition in the General Bond Resolution or in the Bonds if such default shall continue for 60 days after notice by the Owners of not less than 10% in principal amount of Bonds outstanding, and (f) failure by the Authority to vacate the appointment by a court of a receiver or receivers of the Turnpike System or any part thereof, or of the tolls and other revenues therefrom within 90 days after the entry thereof, and (ii) the Trustee's receipt from the Standby Purchaser of notice of the Occurrence of an "event of default" under the Standby Agreement.

If an event of default shall happen and shall have not been remedied, the Trustee may, and upon written request of the Owners of 10% in principal amount of the Bonds outstanding shall, proceed to enforce by such proceedings at law or in equity as it deems most effectual, the rights of the Owners of Bonds issued under the General Bond Resolution, and either the Trustee or the Owners of 25% in principal amount of the Bonds then outstanding may declare the principal of and interest on all the Bonds then outstanding due and payable immediately.

No Bondholder shall have any right to institute any suit or proceeding for the execution of any trust under the General Bond Resolution, or for the enforcement of any provision of the General Bond Resolution, unless such Bondholder shall have given previously the Trustee written notice of the event of default on account of which such suit or proceeding is to be instituted, and unless the holders of at least 25% in principal amount of the Bonds then outstanding shall have filed a written request to the Trustee and shall have afforded the Trustee a reasonable opportunity to exercise its powers or to institute such suit or proceeding, and unless there shall have been offered to the Trustee adequate security and indemnity against its costs, expenses and liability to be incurred and the Trustee shall have refused or failed to comply with such request within 60 days after receipt of such notice, request and offer of indemnity. Nothing in the General Bond Resolution or the Bonds affects or impairs the Authority's obligation to pay the Bonds and the interest thereon when due or the right of any Bondholder to enforce such payment.

Resignation and Removal of Trustee (General Bond Resolution, Sections 908, 909 and 910)

The Trustee may at any time resign and be discharged of its duties and obligations under the General Bond Resolution by giving the Authority not less than 60 days written notice and publishing notice of its resignation in certain newspapers. The Trustee may also be removed at any time by the Owners of a majority in principal amount of the Bonds then Outstanding by a signed and acknowledged instrument. The resignation, discharge or removal of the Trustee shall not become effective until a successor Trustee has assumed the duties and obligations of the Trustee under the General Bond Resolution.

In the case of the resignation or removal of the Trustee, or if the Trustee is incapable of acting or is otherwise relieved of its duties, the Owners of a majority in principal amount of the Bonds then Outstanding may appoint a successor. Any successor Trustee shall be a bank or trust company or national banking association, doing business and having its principal office in the City and State of New Jersey and having capital stock and surplus aggregating at least $50,000,000, if there be such a bank or trust company or national banking association willing and able to accept the office on reasonable and customary terms and authorized by law to perform all the duties imposed upon it by the General Bond Resolution.

Co-Trustee (General Bond Resolution, Section 917)

At any time so long as no event of default has occurred and is continuing under the General Bond Resolution, the Authority, by Supplemental Resolution, may, solely in its discretion, appoint an additional institution as a separate or Co-Trustee meeting the requirements of a successor trustee under the General Bond Resolution, in which event each and every remedy, power, right, claim, demand, cause of action, immunity, estate, title interest and lien expressed or intended by the General Bond Resolution to be exercised by or vested in or conveyed to the Trustee with respect thereto shall be exercisable by and vest in such separate or Co-Trustee, but only to the extent necessary to enable such separate or Co-Trustee to exercise such powers, rights and remedies, and every covenant and obligation necessary to the exercise thereof by such separate or Co-Trustee shall run to and be enforceable by either of them. In case any separate or Co-Trustee, or a successor, shall become incapable of acting, resign or be removed, all the estates, properties, rights, powers, trusts, duties and obligations of such separate or Co-Trustee, so far as permitted by law, shall vest in and be exercised by the Trustee until the appointment, if any, by the Authority of a successor to such separate or Co-Trustee. Any Co-Trustee appointed by the Authority pursuant to the General Bond Resolution may resign in accordance with the General Bond Resolution or be removed in accordance with the General Bond Resolution, in which case all powers, rights and remedies vested in the Co-Trustee shall again vest in the Trustee as if no such appointment of a Co-Trustee had been made. No successor Co-Trustee shall be required (but shall be permitted subject to the requirements of the General Bond Resolution) so long as the Trustee continues to act under the General Bond Resolution.

In connection with the appointment of any Co-Trustee pursuant to the General Bond Resolution the Authority, the Trustee and the Co-Trustee shall execute a separate Agreement in form acceptable to the parties thereto defining the respective duties of such Co-Trustee and the Trustee under the General Bond Resolution.

Series Resolutions (General Bond Resolution, Section 1001)

The Authority may adopt at any time and from time to time Series Resolutions to authorize the issue of Series of Bonds under the General Bond Resolution. A Series Resolution may also designate Variable Rate Debt, Commercial Paper and Subordinated Indebtedness as Bonds if at the time of such designation specified requirements of the General Bond Resolution are met with respect to such indebtedness. A Series Resolution shall be fully effective in accordance with its terms upon its adoption by the Authority in order to specify, determine or authorize any matters and things concerning any such Bonds or the proceeds thereof which are not contrary to or inconsistent with the General Bond

Resolution. Upon the adoption of a Series Resolution, the Authority shall file with the Trustee a copy thereof, certified by an Authorized Officer of the Authority.

Amendments and Supplements (General Bond Resolution, Sections 1101 and 1102)

The Authority may, without Bondholder consent, adopt at any time or from time to time a Supplemental Resolution supplementing and amending the General Bond Resolution or any Series Resolution or any Supplemental Resolution for one or more of the following purposes:

(1) To close the General Bond Resolution against, or impose additional limitations or restrictions on, the issuance of Bonds, or of other notes, bonds, obligations or evidences of indebtedness;

(2) To impose additional covenants or agreements to be observed by the Authority which are not contrary to or inconsistent with the General Bond Resolution;

(3) To impose other limitations or restrictions upon the Authority;

(4) To cure any ambiguity, omission or defect in the General Bond Resolution, any Series Resolution or Supplemental Resolution in such manner as shall not be inconsistent with the overall intent of the General Bond Resolution and shall not impair or adversely affect the security for any Bonds issued under the General Bond Resolution;

(5) To revise the timing for the performance of certain of the Authority's covenants contained in the General Bond Resolution in the event that the Authority's fiscal year is ever changed from a calendar year to a different 12 month period, provided that such revisions shall require the performance of such covenants within the same relative time periods of the new fiscal year as is required currently in a calendar year;

(6) To surrender any right, power or privilege reserved to or conferred upon the Authority by the General Bond Resolution;

(7) To confirm, as further assurance, any pledge of or lien upon the Pledged Revenues or any other moneys, securities or funds;

(8) To effect any other change necessary to maintain the excludability of the interest on Tax Exempt Obligations from gross income for federal income tax purposes;

(9) To appoint a Co-Trustee in the discretion of the Authority pursuant to the General Bond Resolution; and

(10) To effect any other change in the General Bond Resolution, any Series Resolution or Supplemental Resolution that does not materially adversely affect the Owners of the Bonds.

The Authority also may adopt modifications or amendments to the General Bond Resolution, any Series Resolution or Supplemental Resolution in addition to the amendments described above, (i) by adoption of a Supplemental Resolution with the written consent of the Holders of at least 51% in principal amount of the Bonds Outstanding at the time such consent is given, or (ii) in case less than all of the several Series of Bonds then Outstanding are affected by the modification or amendment, of the Holders of at least 51% in principal amount of the Bonds of each Series so affected 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 Series and maturity remain Outstanding, the consent of the Owners 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. If permitted by an applicable Series Resolution, a Credit Issuer for a Credit Facility or Substitute Credit Facility securing a Series of Bonds shall have the right to consent to amendments on behalf of the Owners of the Bonds of such Series. 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, or shall change or modify any of the rights or obligations of any Fiduciary without its written assent thereto.

Each such Supplemental Resolution shall be accompanied, when filed with the Trustee, by (a) a Counsel's Opinion to the effect that such resolution has been duly and lawfully adopted by the Authority in accordance with the provisions of the General Bond Resolution, is authorized or permitted by the General Bond Resolution and, when effective, will be valid and binding upon the Authority, the Bondholders and the Trustee, and (b) if such Supplemental Resolution shall change or modify any of the rights or obligations of any Qualified Swap Provider, any Standby Purchaser, any Tender Agent or any Remarketing Agent, the written consent of such person to such Supplemental Resolution (which consent shall not be unreasonably withheld).

Defeasance (General Bond Resolution, Section 1201)

If the principal or redemption price, if applicable, of and interest due and to become due on all Bonds is paid to the Bondholders and all obligations of the Authority due or to become due under each Qualified Swap and Standby Agreement then in effect or thereupon terminated is paid in accordance with the terms thereof, then the pledge of Pledged Revenues and other moneys and all covenants, agreements and other obligations of the Authority to the Bondholders, each Qualified Swap Provider and each Standby Purchaser are discharged and satisfied. All outstanding Bonds prior to the maturity or redemption date thereof shall be deemed to have been paid and shall cease to be entitled to any lien, benefit or security under the General Bond Resolution and all covenants, agreements and obligations of the Authority to the Owners thereof shall be discharged and satisfied, if the following conditions are met: (i) (a) the interest rates in effect with respect to Bonds that are to be deemed paid with the meaning of the defeasance provisions of the General Bond Resolution cannot be reset prior to the date on which such Bonds are to be redeemed or their maturity date, and (b) such Bonds are not subject to tender for purchase prior to the date on which such Bonds are to be redeemed or their maturity date, (ii) in the case of the Bonds to be redeemed, the Authority shall have given to the Trustee instructions to pay or redeem all of said Bonds in accordance with the applicable Sinking Fund Installments and to publish the notice of redemption thereof, (iii) there shall have been deposited with the Trustee in trust either moneys in an amount which shall be sufficient, or Federal Securities, the principal of and interest on which, when due, will provide moneys which, together with any moneys also deposited, shall be sufficient to pay when due the principal or redemption price, if applicable, and interest due or to become due on such Bonds, and (iv) in the event such Bonds are not to be redeemed with the next succeeding 60 days, the Authority shall have given the Trustee irrevocable instructions to publish, as soon as practicable, a notice to the Owners of such Bonds that the above deposit has been made with the Trustee and that such Bonds are deemed to be paid and stating the maturity or redemption dates upon which moneys are to be available to pay the principal or redemption price, if applicable, of such Bonds.

No payments of principal of any of the Federal Securities deposited with the Trustee or interest thereon shall be withdrawn or used for any purpose other than the payment of such principal or Redemption Price of, or interest on, the Bonds deemed to be paid unless after such withdrawal the amount held by the Trustee and interest to accrue on Federal Securities so held shall be sufficient to provide fully for the payment of the principal or Redemption Price of and interest on the balance of such Bonds.

Amounts deposited with the Trustee for the payment of Principal Installments of and interest on any Bonds deemed to be paid, if so directed by the Authority, shall be applied by the Trustee to the purchase of such Bonds in accordance with the General Bond Resolution. Bonds for which a redemption date has been established may be purchased on or prior to the 45th day preceding the redemption date. The principal amount of Bonds to be redeemed shall be reduced by the principal amount 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 General Bond Resolution, plus accrued interest, and such purchases shall be made in such manner as the Trustee shall determine. No purchase shall be made by the Trustee if such purchase would result in the Trustee holding less than the moneys and Federal Securities required to be held for the payment of all other Bonds deemed to be paid.

The Authority may purchase with any available funds any Bonds determined to be paid in accordance with the General Bond Resolution. Bonds for which a redemption date has been established may be purchased by the Authority on or prior to the 45th day preceding the redemption date. On or prior to the 45th 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 on the redemption date and shall pay to the Authority on the redemption date the redemption price of and interest on Bonds purchased by the Authority 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.

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APPENDIX E

FORM OF BOND COUNSEL OPINION

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Upon the issuance of the Series 2021 B Bonds, McManimon, Scotland & Baumann, LLC, Roseland, New Jersey, Bond Counsel, anticipates rendering its final opinion in substantially the following form:

[Date of Closing]

New Jersey Turnpike Authority
1 Turnpike Plaza
P.O. Box 5042
Woodbridge, New Jersey 07095

Ladies and Gentlemen:

We have examined a record of proceedings relating to the issuance by the New Jersey Turnpike Authority (the "*Authority*") of $995,235,000 aggregate principal amount of its Turnpike Revenue Bonds, Series 2021 B (Federally Taxable) (the "*Series 2021 B Bonds*"). The Authority is a public body corporate and politic created under and by virtue of the New Jersey Turnpike Authority Act of 1948, constituting Chapter 454 of the Laws of New Jersey of 1948, as amended and supplemented (the "*Act*").

The Series 2021 B Bonds are issued under and pursuant to the provisions of the Act and a resolution of the Authority adopted on August 20, 1991 and entitled, "Turnpike Revenue Bond Resolution", as amended and restated on September 26, 1991, and as further amended and restated as of November 22, 1991, as the same has been further amended, restated and supplemented from time to time (collectively, the "*General Bond Resolution*"), including as supplemented by the Series 2020 Turnpike Revenue Bond Resolution, adopted by the Authority on January 28, 2020 (the "*Series 2020 Resolution*"), and by a Certificate of Determination executed by the Executive Director of the Authority, dated the date hereof (the "*Certificate of Determination*"; and together with the General Bond Resolution and the Series 2020 Resolution, the "*Resolution*"), relating to the Series 2021 B Bonds. Capitalized terms used but not otherwise defined herein shall have the meanings ascribed thereto in the Resolution.

The Series 2021 B Bonds are dated the date hereof, mature on the dates and in the principal amounts, bear interest from their date at the rates, are payable on such dates and contain such other provisions, all as set forth in the Series 2020 Resolution and the Certificate of Determination. The Series 2021 B Bonds are subject to redemption prior to maturity on the terms and conditions set forth in the Resolution.

The Series 2021 B Bonds are being issued by the Authority to (i) advance refund, redeem and legally defease all or a portion of the Authority's Outstanding Turnpike Revenue Bonds, Series 2012 B, Turnpike Revenue Bonds, Series 2013 A, Turnpike Revenue Bonds, Series 2013 F, Turnpike Revenue Bonds, Series 2014 A, and Turnpike Revenue Bonds, Series 2014 C, and (ii) pay the costs of issuance of the Series 2021 B Bonds.

Under the terms of the Resolution, the Authority may hereafter authorize and issue other additional Bonds under the Resolution for the purposes and on the terms and conditions set forth in the Resolution. Any such additional Bonds, when issued, will be entitled, equally and ratably with the Series 2021 B Bonds, all other Bonds heretofore or hereafter issued and Outstanding under the Resolution and certain other obligations described in the Resolution, to the benefit, protection and security of the provisions, covenants and agreements of the Resolution, including the pledge of Pledged Revenues and the amounts on deposit in all Funds established by the Resolution, except as otherwise set forth in the Resolution.

In rendering the opinions set forth below, we have examined such matters of law and documents, certificates, records and other instruments as we deemed necessary or appropriate to enable us to express the opinions set forth below, including, without limitation, the Act, original counterparts or certified copies of the Resolution and the other documents, certificates, instruments, opinions and records filed with the Trustee in connection with the issuance of the Series 2021 B Bonds. In rendering the opinions set forth below, we have assumed and relied upon the genuineness of all signatures, the authenticity of all documents submitted to us as originals and the conformity to the original documents of all documents submitted to us as copies. As to any facts material to our opinions we have, when such facts were not independently established, relied upon the truthfulness, completeness and accuracy of the aforesaid documents, certificates, instruments, opinions and records without any independent investigation thereof.

Based upon the foregoing and subject to the limitations, qualifications and exceptions set forth below, we are of the opinion that:

1. The Authority has been duly created and is validly existing as a public body corporate and politic under the provisions of the Act, with power to adopt the Resolution and to issue the Series 2021 B Bonds.

2. The Resolution has been duly and lawfully adopted by the Authority, is in full force and effect, is valid and binding upon the Authority and is enforceable in accordance with its terms, and no other authorization for the Resolution is required.

3. The Series 2021 B Bonds have been duly authorized and validly issued by the Authority in accordance with the Act and the provisions of the Resolution, are valid and binding obligations of the Authority enforceable in accordance with their terms and the terms of the Resolution, and are entitled to the benefit, protection and security of the Resolution and the Act.

4. The Resolution creates the valid pledge that it purports to create of the proceeds of the sale of the Bonds, the Pledged Revenues and the amounts on deposit in all Funds established by the Resolution (except for moneys provided by governmental authorities whose availability is conditioned on such amounts not being subject to the pledge of the Resolution), subject only to the provisions of the Resolution permitting the application thereof for the purposes and on the terms set forth in the Resolution.

5. The Series 2021 B Bonds constitute additional Bonds under the Resolution, and are equally and ratably entitled to the benefits, protection and security of the Resolution along with all other Bonds heretofore issued and Outstanding under the Resolution and certain other obligations described in the Resolution.

6. Based upon existing law, interest on the Series 2021 B Bonds and any gain from the sale thereof are not includable as gross income under the New Jersey Gross Income Tax Act.

The foregoing opinions in paragraphs 2 and 3 above are qualified to the extent that the enforceability of the Resolution and the Series 2021 B Bonds may be limited by applicable bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium or other similar laws now or hereafter enacted by any state or by the federal government affecting the enforcement of creditors' rights generally and general principles of equity (regardless of whether enforcement is sought in a proceeding in equity or at law) and the valid exercise of the sovereign police powers of the State of New Jersey and the constitutional power of the United States of America.

Except as stated above, we express no opinion as to any federal, state or local tax consequences of the ownership or disposition of the Series 2021 B Bonds.

Attention is called to the fact that we have not been requested to examine and have not examined any documents or information relating to the Authority other than the certified copies of the proceedings and proofs referred to hereinabove, and no opinion is expressed as to any financial or other information, or the adequacy thereof, that has been or may be supplied to any purchaser of the Series 2021 B Bonds. We express no opinion herein as to the accuracy, adequacy or sufficiency of the Official Statement of the Authority pertaining to the offering of the Series 2021 B Bonds.

The opinions expressed herein are based upon the laws and judicial decisions of the State of New Jersey and the United States of America as of the date hereof and are subject to any amendment, repeal or other modification of the applicable laws or judicial decisions that served as the basis for our opinion or to any laws or judicial decisions hereafter enacted or rendered. Our engagement as bond counsel with respect to the opinions expressed herein does not require, and shall not be construed to constitute, a continuing obligation on our part to notify or otherwise inform the addressee hereof of the amendment, repeal or other modification of the applicable laws or judicial decisions that served as the basis for this opinion letter or of the laws or judicial decisions hereafter enacted or rendered that impact on this opinion letter.

This opinion letter is being furnished solely to the party to whom it is addressed and may not be relied upon by any other person or quoted in whole or in part or otherwise referred to without our prior written consent. This is only an opinion letter and not a warranty or guaranty of the matters discussed herein.

This opinion is issued as of the date hereof. We assume no obligation to update, revise or supplement this opinion to reflect any facts or circumstances that may come to our attention after the date of this opinion, or any changes in law or interpretations thereof that may occur after the date of this opinion or for any reason whatsoever.

Very truly yours,

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APPENDIX F

FORM OF CONTINUING DISCLOSURE AGREEMENT

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CONTINUING DISCLOSURE AGREEMENT

BY AND AMONG

NEW JERSEY TURNPIKE AUTHORITY,

THE BANK OF NEW YORK MELLON, CO-TRUSTEE

AND

U.S. BANK NATIONAL ASSOCIATION, CO-TRUSTEE

Relating To

New Jersey Turnpike Authority

$995,235,000
Turnpike Revenue Bonds, Series 2021 B
(Federally Taxable)

Dated: February 4, 2021

CONTINUING DISCLOSURE AGREEMENT

This **CONTINUING DISCLOSURE AGREEMENT** (the "*Disclosure Agreement*") is made this 4th day of February, 2021, by and among the New Jersey Turnpike Authority (the "*Authority*"), The Bank of New York Mellon and U.S. Bank National Association, in their capacity as co-trustees (the "*Co-Trustees*") under the Authority's Turnpike Revenue Bond Resolution, adopted on August 20, 1991, as amended, restated and supplemented (the "*Resolution*"), including as supplemented by the Series 2020 Turnpike Revenue Bond Resolution adopted by the Authority on January 28, 2020. This Disclosure Agreement is entered into in connection with the issuance and sale by the Authority of its Turnpike Revenue Bonds, Series 2021 B (Federally Taxable), and any additional bonds hereinafter issued under the Resolution and designated pursuant to a supplemental schedule as bonds to be covered hereunder (collectively, the "*Bonds*").

1. **Purpose of this Disclosure Agreement.** This Disclosure Agreement is being executed and delivered for the benefit of the holders and beneficial owners of the Bonds (collectively, the "*Bondholders*") and in compliance with Rule 15c2-12(b)(5) of the Securities and Exchange Commission, as it may be amended from time to time, including administrative or judicial interpretations thereof, as it applies to the Bonds.

2. **Definitions.** In addition to the definitions set forth in the Resolution and hereinabove, which apply to any capitalized term used in this Disclosure Agreement unless otherwise defined in this Section 2, the following capitalized terms shall have the following meanings:

"*Annual Report*" shall mean the Authority's Annual Report provided pursuant to, and as described in, Sections 3 and 4 of this Disclosure Agreement.

"*Continuing Disclosure Information*" shall mean, collectively, (i) each Annual Report, (ii) any notice required to be filed by the Authority with the MSRB pursuant to Section 3(c) of this Disclosure Agreement and (iii) any notice of a Listed Event required to be filed by the Authority with the MSRB pursuant to Section 5(b) of this Disclosure Agreement.

"*Financial Obligation*" means a (i) debt obligation, (ii) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation or (iii) guarantee of (i) or (ii); *provided*, *however*, that the term "Financial Obligation" shall not include municipal securities as to which a final official statement has been provided to the MSRB consistent with the Rule.

"*Listed Events*" shall mean any of the events listed in Section 5(a) of this Disclosure Agreement.

"*MSRB*" shall mean the Municipal Securities Rulemaking Board.

"*Opinion of Counsel*" shall mean a written opinion of counsel expert in federal securities law acceptable to the Authority.

"*Rule*" shall mean Rule 15c2-12 adopted by the SEC under the Securities Exchange Act of 1934, as it may be amended from time to time, including administrative or judicial interpretations thereof, as it applies to the Bonds.

"*SEC*" shall mean the United States Securities and Exchange Commission.

"*State*" shall mean the State of New Jersey.

3. **Provision of Annual Reports.**

(a) The Authority shall, not later than May 1 of each year during which any of the Bonds remain Outstanding, provide to the MSRB, in accordance with the provisions of Section 6 of this Disclosure Agreement, the Annual Report prepared for the respective fiscal year of the Authority ending the immediately preceding December 31 (or if the fiscal year of the Authority shall end on any date other than December 31, the Authority shall provide its Annual Report to the MSRB not later than the first day of the fifth month next following the end of such other fiscal year). Each Annual Report shall comply with the requirements of Section 4 of this Disclosure Agreement and may be submitted as a single document or as separate documents comprising a package.

(b) The Authority shall, at the same time as it submits the Annual Report to the MSRB, provide written notice of such submission to the Co-Trustees.

(c) The Authority shall also file with the MSRB, in a timely manner and in accordance with the provisions of Section 6 of this Disclosure Agreement, notice of any failure of the Authority to provide an Annual Report in compliance with the requirements of this Section 3 and Section 4 of this Disclosure Agreement.

4. **Contents of Annual Report.**

(a) The Annual Report shall include information pertaining to the Authority of the type appearing in the Official Statement circulated in connection with the issuance of the Bonds and will include the (i) audited financial statements of the Authority for the preceding fiscal year of the Authority as required by Section 3(a) hereof prepared using the accounting standards described in subsection (b) of this Section 4, (ii) annual budgets of the Authority, (iii) debt service coverage certifications and (iv) management's discussion of results of operations, if and to the extent not otherwise provided in the audited financial statements. In the event that audited financial statements are not available on the date required in Section 3(a) hereof, the Authority shall file unaudited financial statements for such fiscal year until audited financial statements are available. Each Annual Report may cross-reference other information that is available to the public on the MSRB's internet website or that has been filed with the SEC and, if the document incorporated by reference is a final official statement, it must be available from the MSRB.

(b) As of the date of this Disclosure Agreement, the Authority prepares its financial statements in accordance with generally accepted accounting principles in the United States of America.

5. **Reporting of Listed Events.**

(a) This Section 5 shall govern the giving of notices of the occurrence, with respect to the Bonds, of any of the following Listed Events:

(1) Principal and interest payment delinquencies;
(2) Non-payment related defaults, if material;
(3) Unscheduled draws on debt service reserves reflecting financial difficulties;
(4) Unscheduled draws on credit enhancements reflecting financial difficulties;
(5) Substitution of credit or liquidity providers, or their failure to perform;

(6) 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 or determinations with respect to the tax status of the Bonds, or other material events affecting the tax status of the Bonds;
(7) Modifications to the rights of Bondholders, if material;
(8) Bond calls, if material, and tender offers;
(9) Defeasances of the Bonds;
(10) Release, substitution or sale of property securing repayment of the Bonds, if material;
(11) Rating changes relating to the Bonds;
(12) Bankruptcy, insolvency, receivership or similar event of the Authority;
(13) The consummation of a merger, consolidation or acquisition involving the Authority or the sale of all or substantially all of the assets of the Authority, 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;
(14) Appointment of a successor or additional trustee for the Bonds or the change of name of a trustee for the Bonds, if material;
(15) Incurrence of a Financial Obligation 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
(16) 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.

(b) The Authority shall, in a timely manner not in excess of 10 business days after the occurrence of any Listed Event, file a notice of the occurrence of such Listed Event with the MSRB in accordance with the provisions of Section 6 of this Disclosure Agreement. In determining the materiality of any of the Listed Events specified in subsection (a) of this Section 5, the Authority may, but shall not be required to, rely conclusively on an Opinion of Counsel. The Authority shall also provide written notice of such Listed Event to the Co-Trustees at the same time it provides notice of such Listed Event to the MSRB.

6. **Filing of Continuing Disclosure Information.** Any Continuing Disclosure Information filed with the MSRB in accordance with this Disclosure Agreement shall be in an electronic format as shall be prescribed by the MSRB or such other format as the Rule may require or permit, and shall be accompanied by such identifying information as shall be prescribed by the MSRB or as may otherwise be required by the Rule.

7. **Termination of Reporting Obligation.** The obligations of the Authority under this Disclosure Agreement shall terminate upon the defeasance, prior redemption or payment in full of all of the Bonds.

8. **Amendment; Waiver.** Notwithstanding anything in this Disclosure Agreement to the contrary, the Authority may amend this Disclosure Agreement, and any provision of this Disclosure Agreement may be waived, if such amendment or waiver is supported by an Opinion of Counsel addressed to the Authority and the Co-Trustees to the effect that such amendment or waiver will not, in and of itself, cause the undertakings herein to violate the Rule.

9. **Additional Information.** Nothing in this Disclosure Agreement shall be deemed to prevent the Authority from disseminating any other information, using the means of dissemination set forth in this Disclosure Agreement or any other means of communication, or including any other information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is required by this Disclosure Agreement. If the Authority chooses to include any information in any Annual Report or notice of occurrence of a Listed Event in addition to that which is specifically required by this Disclosure Agreement, it shall not have any obligation under this Disclosure Agreement to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

10. **Default.** In the event of a failure of the Authority to comply with any provision of this Disclosure Agreement, the Co-Trustees may (and, at the written request of the holders of at least 25% in aggregate principal amount of Outstanding Bonds affected by such failure, shall), or any Bondholder may, take such actions at law or in equity as may be necessary and appropriate to enforce the specific performance and observance of the obligations of the Authority under this Disclosure Agreement; *provided*, *however*, that no person or entity shall be entitled to recover monetary damages hereunder under any circumstances and the right of any Bondholder, or the Co-Trustees on behalf of Bondholders, to challenge the adequacy of information provided pursuant to this Disclosure Agreement shall be limited in the same manner as enforcement rights are limited under the Resolution. A default under this Disclosure Agreement shall not be deemed an Event of Default under the Bonds or the Resolution, and the sole remedy under this Disclosure Agreement in the event of any failure of the Authority to comply with this Disclosure Agreement shall be an action to compel performance.

11. **Beneficiaries.** This Disclosure Agreement shall inure solely to the benefit of the Bondholders, and each Bondholder is hereby declared to be a third-party beneficiary of this Disclosure Agreement. Except as provided in the immediately preceding sentence, this Disclosure Agreement shall create no rights in any other person or entity.

12. **Notices.** All notices and other communications required or permitted under this Disclosure Agreement shall be in writing and shall be deemed to have been duly given and made only when delivered (personally, by recognized national or regional courier service or by other messenger, for delivery to the intended addressee) or when deposited in the United States mail, registered or certified mail, postage prepaid, return receipt requested, addressed as set forth below:

(i) *If to the Authority:*

1 Turnpike Plaza
P.O. Box 5042
Woodbridge, New Jersey 07095
Attention: John M. Keller, Executive Director

(ii) *If to the Co-Trustees:*

(a) The Bank of New York Mellon
385 Rifle Camp Road – 3rd Floor
Woodland Park, New Jersey 07424
Attention: Vanessa Mesa, Vice President

(b) U.S. Bank National Association
333 Thornall Street – 4th Floor
Edison, New Jersey 08837
Attention: Christopher E. Golabek, Vice President

Any party may alter the address to which communications are to be sent by giving notice of such change of address in conformity with the provisions of this Section 12.

13. **Successors and Assigns.** All of the covenants, promises and agreements contained in this Disclosure Agreement by or on behalf of the Authority or the Co-Trustees shall bind and inure to the benefit of their respective successors and assigns, whether so expressed or not.

14. **Headings for Convenience Only.** The descriptive headings in this Disclosure Agreement are inserted for convenience of reference only and shall not control or affect the meaning or construction of any of the provisions hereof.

15. **Counterparts.** This Disclosure Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

16. **Severability.** If any provision of this Disclosure Agreement, or the application of any such provision in any jurisdiction or to any person or circumstance, shall be held invalid or unenforceable, the remaining provisions of this Disclosure Agreement, or the application of such provision as is held invalid or unenforceable in jurisdictions or to persons or circumstances other than those in or as to which it is held invalid or unenforceable, shall not be affected thereby.

17. **Governing Law.** This Disclosure Agreement shall be governed by and construed in accordance with the laws of the State.

18. **Compliance with L. 2005, c. 271, Reporting Requirements.** Each Co-Trustee is hereby advised of its responsibility to file an annual disclosure statement on political contributions with the New Jersey Election Law Enforcement Commission ("*ELEC*") pursuant to N.J.S.A. 19:44A-20.13 (L. 2005, c. 271, section 3) if the Co-Trustee enters into contracts or agreements with public entities in the State, such as the Authority, and receives compensation or fees in excess of $50,000 or more in the aggregate from public entities in the State, such as the Authority, in a calendar year. It is each Co-Trustee's responsibility to determine if filing is necessary. Failure to do so can result in the imposition of financial penalties by ELEC. Additional information about this requirement is available from ELEC at 888-313-3532 or at www.elec.state.nj.us.

19. **Compliance with L. 2005, c. 92.** In accordance with L. 2005, c. 92, each Co-Trustee agrees that all services performed under this Disclosure Agreement or any subcontract awarded under this Disclosure Agreement shall be performed within the United States of America.

20. **Certain Provisions Relating to Co-Trustees.** The provisions of Article IX of the Resolution relating to the duties, obligations, protections and indemnities of the Co-Trustees shall apply to the Co-Trustees' performance of this Disclosure Agreement and are by this reference incorporated as if set forth in full herein.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the NEW JERSEY TURNPIKE AUTHORITY, THE BANK OF NEW YORK MELLON and U.S. BANK NATIONAL ASSOCIATION have caused this Disclosure Agreement to be executed and delivered in their respective names by their respective authorized officers, all as of the date first above written.

NEW JERSEY TURNPIKE AUTHORITY

By:_________________________________
John M. Keller
Executive Director

THE BANK OF NEW YORK MELLON,
as Co-Trustee

By:_________________________________
Janet Russo
Vice President

U.S. BANK NATIONAL ASSOCIATION,
as Co-Trustee

By:_________________________________
Christopher E. Golabek
Vice President

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APPENDIX G

REFUNDED BONDS

TURNPIKE REVENUE BONDS, SERIES 2012 B

Maturity (January 1)	Principal Amount	Interest Rate	Redemption Date	Redemption Price	CUSIP*
2022	$ 32,605,000	5.00%	N/A	N/A	646139Z40
2024	32,115,000	5.00	01/01/2023	100%	646139Z65
2025	55,080,000	5.00	01/01/2023	100	646139Z73
2026	57,830,000	5.00	01/01/2023	100	646139Z81
2027	60,725,000	5.00	01/01/2023	100	646139Z99
2028	132,200,000	5.00	01/01/2023	100	6461392A2
2029	66,945,000	5.00	01/01/2023	100	6461392B0
2030	40,290,000	5.00	01/01/2023	100	6461392C8
2030	30,000,000	3.50	01/01/2023	100	6461392D6

TURNPIKE REVENUE BONDS, SERIES 2013 A

Maturity (January 1)	Principal Amount	Interest Rate	Redemption Date	Redemption Price	CUSIP*
2022	$ 4,470,000	5.000%	N/A	N/A	646140BD4
2024	3,715,000	3.000	07/01/2022	100%	6461392X2
2025	4,520,000	3.125	07/01/2022	100	6461392Y0
2026	9,100,000	3.375	07/01/2022	100	6461392Z7
2026	30,030,000	3.250	07/01/2022	100	6461393V5
2033	5,400,000	4.000	07/01/2022	100	6461393G8
2043	132,880,000	5.000	07/01/2022	100	646140CV3

* The CUSIP numbers are being provided solely for the convenience of the holders of the Refunded Bonds only and the Authority does not make any representation with respect to such numbers or undertake any responsibility for their accuracy.

TURNPIKE REVENUE BONDS, SERIES 2013 F

Maturity (January 1)	Principal Amount	Interest Rate	Redemption Date	Redemption Price	CUSIP*
2026	$ 16,205,000	5.00%	01/01/2023	100%	6461394Q5
2027	6,755,000	5.00	01/01/2023	100	6461394F9
2028	7,100,000	5.00	01/01/2023	100	6461394G7
2029	7,450,000	5.00	01/01/2023	100	6461394H5
2030	7,825,000	5.00	01/01/2023	100	6461394J1
2031	5,000,000	5.00	01/01/2023	100	6461394R3
2032	8,565,000	5.00	01/01/2023	100	6461394L6
2033	9,000,000	5.00	01/01/2023	100	6461394M4
2034	5,340,000	5.00	01/01/2023	100	6461394N2
2035	5,860,000	5.00	01/01/2023	100	6461394S1

TURNPIKE REVENUE BONDS, SERIES 2014 A

Maturity (January 1)	Principal Amount	Interest Rate	Redemption Date	Redemption Price	CUSIP*
2031	$111,000,000	5.00%	07/01/2024	100%	6461395A9

TURNPIKE REVENUE BONDS, SERIES 2014 C

Maturity (January 1)	Principal Amount	Interest Rate	Redemption Date	Redemption Price	CUSIP*
2022	$ 21,840,000	5.00%	N/A	N/A	6461395M3

* The CUSIP numbers are being provided solely for the convenience of the holders of the Refunded Bonds only and the Authority does not make any representation with respect to such numbers or undertake any responsibility for their accuracy.

NEW JERSEY TURNPIKE AUTHORITY • Turnpike Revenue Bonds, Series 2021 B (Federally Taxable)

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