NEW ISSUE – Book-Entry-Only

Ratings: S&P: "AA-"
Fitch: "AA-"
See "Ratings" herein

In the opinion of Bowles Rice LLP, Bond Counsel, under existing laws, regulations, rules and published rulings and judicial decisions of the United States of America, as presently written and applied, and assuming among other matters, the accuracy of certain representations and compliance with certain covenants, the interest on the Series 2018 Senior Lien Bonds is excludable from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the "Code"), and such interest will not be treated as a preference item for purposes of the alternative minimum tax imposed under the Code with respect to individuals and corporations. Under the Code, however, for the taxable years that began prior to January 1, 2018, such interest is included in the adjusted current earnings of a corporation for purposes of computing the alternative minimum tax. In addition, Bond Counsel is of the opinion that under the Act (as defined herein), the Series 2018 Senior Lien Bonds, their transfer and the income therefrom (including any profit made on the sale thereof) shall at all times be free from taxation within the State of West Virginia.. See "TAX MATTERS" herein.

$166,370,000
WEST VIRGINIA PARKWAYS AUTHORITY
Senior Lien Turnpike Toll Revenue Bonds
Series 2018

Dated: Date of Delivery **Due: June 1, as shown on inside**

The $166,370,000 Senior Lien Turnpike Toll Revenue Bonds, Series 2018 (the "Series 2018 Senior Lien Bonds") are being issued by the West Virginia Parkways Authority (the "Authority"), a public body corporate and politic and instrumentality of the State of West Virginia (the "State"), under the Master Trust Indenture dated as of August 1, 2018, between the Authority and United Bank, a Virginia banking corporation authorized to transact business in the State, as trustee (the "Master Trust Indenture"), as supplemented by that certain First Supplemental Trust Indenture dated as of August 1, 2018 (collectively, the "Indenture"). The Series 2018 Senior Lien Bonds are issued pursuant to Chapter 17, Article 16A of the Code of West Virginia, 1931, as amended (the "Act").

The Series 2018 Senior Lien Bonds are issuable only as fully-registered Bonds without coupons, and when initially issued, will be registered to Cede & Co., as nominee of The Depository Trust Company ("DTC"), New York, New York. Individual purchases will be made in book-entry form only, in the principal amount of $5,000 or any integral multiple thereof. Beneficial owners of the Series 2018 Senior Lien Bonds will not receive physical delivery of bond certificates. So long as DTC or its nominee is the registered owner of the Series 2018 Senior Lien Bonds, payments of the principal of and interest on the Series 2018 Senior Lien Bonds will be made directly to DTC. Disbursements of such payments to DTC participants is the responsibility of DTC, and disbursement of such payments to the beneficial owners is the responsibility of DTC participants. See "APPENDIX G – BOOK-ENTRY ONLY SYSTEM."

The maturities, interest rates, yields and prices of the Series 2018 Senior Lien Bonds are shown on the inside cover hereof. Interest on the Series 2018 Senior Lien Bonds will be payable on each June 1 and December 1, commencing December 1, 2018.

The Series 2018 Senior Lien Bonds are subject to optional and mandatory sinking fund redemption prior to maturity in the manner set forth herein. See "THE SERIES 2018 SENIOR LIEN BONDS – Redemption" herein.

The Series 2018 Senior Lien Bonds are being issued to (i) provide funds to finance the costs of certain transportation projects consisting of parkway projects, as defined in the Act, and described more particularly in "THE PROJECTS" herein (the "Projects"), (ii) reimburse the Authority for, or provide funds to finance, certain costs and expenses incurred prior to, or after, the issuance of the Series 2018 Senior Lien Bonds in connection with the acquisition, design, construction, reconstruction, maintenance, improvement, repair or funding of the Projects, (iii) fund the Series 2018 Senior Lien Debt Service Reserve Fund, and (iv) pay costs of issuing the Series 2018 Senior Lien Bonds. See "PLAN OF FINANCE" herein.

The Series 2018 Senior Lien Bonds constitute obligations of the Authority secured by and payable solely from a first lien on and pledge of (i) the Net Toll Road Revenues (as defined herein), (ii) amounts on deposit in certain Funds and Accounts created pursuant to and pledged by the Indenture, and (iii) any and all other property of any kind from time to time by delivery or by writing of any kind specifically conveyed, pledged, assigned or transferred, as and for additional security under the Indenture for the Series 2018 Senior Lien Bonds, by the Authority or by anyone on its behalf or its written consent in favor of the Trustee (collectively, the "Trust Estate").

THE SERIES 2018 SENIOR LIEN BONDS ARE OBLIGATIONS OF THE AUTHORITY PAYABLE SOLELY FROM THE TRUST ESTATE. THE SERIES 2018 SENIOR LIEN BONDS SHALL NOT BE DEEMED TO BE A DEBT OR LIABILITY OF THE STATE OR ANY POLITICAL SUBDIVISION THEREOF OR A PLEDGE OF THE FAITH, CREDIT OR TAXING POWER OF THE STATE OR OF ANY SUCH SUBDIVISION, AND ARE PAYABLE SOLELY FROM THE TRUST ESTATE. THE AUTHORITY HAS NO TAXING POWER.

This cover page contains certain summary information regarding the Series 2018 Senior Lien Bonds and is not a complete summary of the Series 2018 Senior Lien Bonds or the security therefor. Investors should read this entire Official Statement to obtain information necessary to the making of an informed investment decision. The capitalized terms not otherwise defined in this cover page have the same meaning as that meaning assigned to them elsewhere in this Official Statement.

The purchase of the Series 2018 Senior Lien Bonds involves certain risk factors. See "RISK FACTORS" herein.

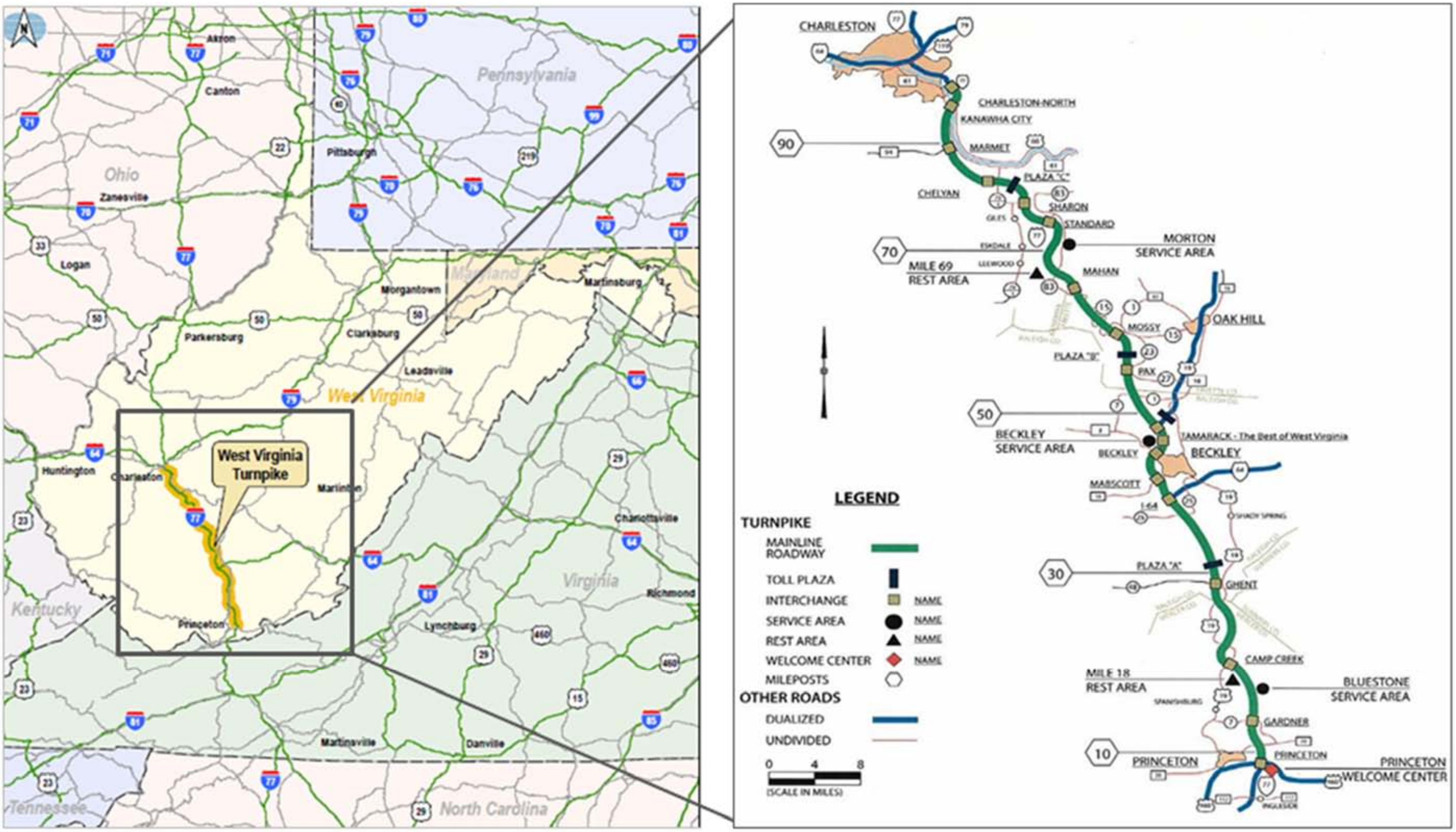
The Series 2018 Senior Lien Bonds are offered when, as and if issued by the Authority and accepted by the Underwriters, subject to prior sale, to withdrawal or modification of the offer without notice, and to approval of the legality of the Series 2018 Senior Lien Bonds by Bowles Rice LLP, Charleston, West Virginia, Bond Counsel. Certain legal matters will be passed upon for the Authority by its counsel, Abrams & Byron, Beckley, West Virginia, and for the Underwriters by their counsel, Jackson Kelly PLLC, Charleston, West Virginia. Certain legal matters will be passed upon by Spilman Thomas & Battle, PLLC, Charleston, West Virginia, as disclosure counsel to the Authority. It is expected that the Series 2018 Senior Lien Bonds will be available for delivery to DTC in New York, New York, on or about August 14, 2018.

WELLS FARGO SECURITIES **J.P. MORGAN**

CREWS & ASSOCIATES, INC. **PIPER JAFFRAY & CO.**

Dated: July 31, 2018

MAP OF THE WEST VIRGINIA TURNPIKE



$166,370,000
WEST VIRGINIA PARKWAYS AUTHORITY
SENIOR LIEN TURNPIKE TOLL REVENUE BONDS
SERIES 2018

Maturity Date (June 1)	Principal Amount ($)	Interest Rate	Yield	Price	CUSIP Numbers *
2019	2,830,000	5.000%	1.500%	102.761	956510AA9
2020	2,650,000	5.000%	1.660%	105.887	956510AB7
2021	2,785,000	5.000%	1.800%	108.688	956510AC5
2022	2,925,000	5.000%	1.930%	111.185	956510AD3
2023	3,070,000	5.000%	2.050%	113.409	956510AE1
2024	3,225,000	5.000%	2.170%	115.334	956510AF8
2025	3,385,000	5.000%	2.300%	116.896	956510AG6
2026	3,555,000	5.000%	2.440%	118.073	956510AH4
2027	3,730,000	5.000%	2.560%	119.107	956510AJ0
2028	3,920,000	5.000%	2.640%	120.252	956510AK7
2029	4,115,000	5.000%	2.760%	119.110*	956510AL5
2030	4,320,000	5.000%	2.830%	118.449*	956510AM3
2031	4,535,000	5.000%	2.890%	117.887*	956510AN1
2032	4,760,000	5.000%	2.950%	117.328*	956510AP6
2033	5,000,000	5.000%	3.000%	116.864*	956510AQ4
2034	5,250,000	5.000%	3.060%	116.310*	956510AR2
2035	5,515,000	5.000%	3.120%	115.760*	956510AS0
2036	5,790,000	5.000%	3.160%	115.395*	956510AT8
2037	6,080,000	5.000%	3.200%	115.031*	956510AU5
2038	6,380,000	4.000%	3.600%	103.273*	956510AV3
2039	6,635,000	5.000%	3.240%	114.668*	956510AW1
2048	9,910,000	3.750%	3.860%	98.058	956510AZ4

$30,035,000 5.000% Term Bond Due on June 1, 2043 Yield 3.290% Price 114.217* CUSIP No. 956510AX9
$35,970,000 4.000% Term Bond Due on June 1, 2047 Yield 3.770% Price 101.865* CUSIP No. 956510AY7

*Priced to the optional redemption date of June 1, 2028.

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* Copyright, American Bankers Association. The CUSIP numbers on the inside cover of this Official Statement are provided by CUSIP Global Services, managed by S&P Capital IQ on behalf of the American Bankers Association. The CUSIP numbers above have been assigned by an independent company not affiliated with the Authority and are included solely for the convenience of Bondholders. Neither the Authority nor the Underwriters make any representation regarding the accuracy of such CUSIP numbers as stated above nor do they undertake any responsibility for the selection of the CUSIP numbers or their accuracy now or at any time in the future. The CUSIP number for a specific maturity is subject to being changed after the issuance of the Series 2018 Senior Lien Bonds as a result of various subsequent actions including, but not limited to, a refunding in whole or in part of such maturity or as a result of the procurement of secondary market portfolio insurance or other similar enhancement by investors that is applicable to all or a portion of certain maturities of the Series 2018 Senior Lien Bonds.

YOU SHOULD MAKE YOUR OWN DECISION WHETHER THIS OFFERING MEETS YOUR INVESTMENT OBJECTIVES AND RISK TOLERANCE LEVEL. NO FEDERAL OR STATE SECURITIES COMMISSION HAS APPROVED, DISAPPROVED, ENDORSED OR RECOMMENDED THIS OFFERING. NO INDEPENDENT PERSON HAS CONFIRMED THE ACCURACY OR TRUTHFULNESS OF THIS DISCLOSURE, NOR WHETHER IT IS COMPLETE. THE WEST VIRGINIA SECURITIES COMMISSION HAS NOT REVIEWED THE DISCLOSURE CONTAINED HEREIN AND THE AUTHORITY IS RELYING ON AN EXEMPTION FROM REGISTRATION BY QUALIFICATION UNDER THE WEST VIRGINIA SECURITIES ACT. IMPORTANT RISK FACTORS ARE EXPLAINED HEREIN UNDER "RISK FACTORS."

References to website addresses presented herein are for informational purposes only and may be in the form of a hyperlink solely for the reader's convenience. Unless specified otherwise, such websites and the information or links contained therein are not incorporated into, and are not part of, this final Official Statement for purposes of, and as that term is defined in, Securities and Exchange Commission Rule 15c2-12.

In connection with this offering, the Underwriters may overallot or effect transactions which stabilize or maintain the market price of the Series 2018 Senior Lien Bonds at a level which might not otherwise prevail in the open market. Such stabilizing, if commenced, may be discontinued at any time.

The Series 2018 Senior Lien Bonds have not been registered with the Securities and Exchange Commission under the Securities Act of 1933, as amended, in reliance upon exemptions contained in such act. The registration or qualification of the Series 2018 Senior Lien Bonds in accordance with applicable provisions of the securities laws of the states, if any, in which the Series 2018 Senior Lien Bonds have been registered or qualified and the exemption from registration or qualification in certain other states cannot be regarded as a recommendation thereof. Neither these states nor any of their agencies have passed upon the merits of the Series 2018 Senior Lien Bonds or the accuracy or completeness of this Official Statement. Any representation to the contrary may be a criminal offense.

In making an investment decision, investors must rely on their own examination of this Official Statement and the terms of the offering, including the merits and risks involved. The Series 2018 Senior Lien Bonds have not been recommended by any federal or state securities commission or regulatory commission including, but not limited to, the West Virginia Securities Commission. Furthermore, the foregoing authorities have not confirmed the accuracy or completeness or determined the adequacy of this Official Statement. Any representation to the contrary may be a criminal offense.

This Official Statement does not constitute an offer to sell, or the solicitation of an offer to buy, any securities other than the securities offered hereby, or an offer to sell or solicitation of offers to buy, nor shall there be any sale of the Series 2018 Senior Lien Bonds, by any person in any jurisdiction where such offer, or solicitation or sale would be unlawful in such jurisdiction. No dealer, broker, salesman or other person has been authorized to give any information or to make any representation other than those contained in this official statement in connection with the offering contained herein, and, if given or made, such information or representation must not be relied upon as having been authorized by the authority or any other person. Neither the delivery of this Official Statement nor the sale of any Series 2018 Senior Lien Bonds implies that there has been no change in the matters described herein since the date hereof.

The information contained in this Official Statement has been obtained from the Authority and other sources which are believed to be reliable, but the accuracy or completeness of such information is not guaranteed by and should not be construed as a representation by any of the foregoing. The presentation of such information, including but not limited to financial data, is intended to show recent historic information and is not intended to indicate future or continuing trends. No representation is made that past experience, as shown by such financial and other information, will necessarily be repeated in the future. This Official Statement contains, in part, estimates and matters of opinion, whether or not expressly stated to be such, which are not intended as statements or representations of fact or certainty, and no representation is made as to the correctness of such estimates and opinions, or that they will be realized. 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 circumstances, create any implication that there has been no change in the affairs of the Authority since the date hereof.

No representation, warranty or guaranty is made by the Underwriters as to the accuracy or completeness of any information in this Official Statement, and nothing contained in this Official Statement is or shall be relied upon as a promise or representation by the Underwriters. The Underwriters have provided the following sentence for inclusion in this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with and as part of their respective responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

This Official Statement contains forecasts, projections and estimates that are based on current expectations or assumptions. When used in this Official Statement, the words "estimated," "forecasted," "intended," "expected," "anticipated," "projected," and similar expressions identify "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995. Such statements are subject to risks and uncertainties that could cause actual results to differ materially from those contemplated in such forward-looking statements. Any forecast is subject to uncertainties. Inevitably, some assumptions used to develop the forecasts will not be realized and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between forecasts and actual results, and those differences may be material.

This Official Statement speaks only as of the date printed on the cover page hereof. 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 in any of the information set forth herein since the date hereof or the date as of which particular information was given, if earlier. This Official Statement will be made available through the Electronic Municipal Market Access System, which is the sole nationally recognized municipal securities information repository under Securities and Exchange Commission Rule 15c2-12.

WEST VIRGINIA PARKWAYS AUTHORITY

HONORABLE JAMES C. JUSTICE, II
Governor of the State of West Virginia, Chairman

ANN V. URLING, *Governor's Chairman Designee*

THOMAS J. SMITH, P.E., *Member*
Secretary of the West Virginia Department of Transportation
Commissioner of the West Virginia Division of Highways

MIKE VINCIGUERRA, *Vice Chairman and Member*

TOM MAINELLA, *Secretary and Member*

DOUG M. EPLING, *Member*

WILLIAM CIPRIANI, *Member*

TROY N. GIATRAS, *Member*

ALISHA MADDOX, *Member*

BILL SEAVER, *Member*

Authority Staff

Gregory C. Barr, *General Manager*

Parrish French, *Director of Finance*

Tyrone Gore, *Director of Operations and Training*

Douglas Ratcliff, *Director of Toll*

James Meadows, *Director of Maintenance*

Wayne Webb, *Director of Customer Service*

Margaret Vickers, *Director of Purchasing*

Sherry Lilly, *Director of Human Resources*

Captain T. L. Bragg, *Officer in Charge of State Police Troop 7*

Service Providers

HNTB Corporation, *Consulting Engineers*

CDM Smith Inc., *Traffic Consultant*

Bowles Rice LLP, *Bond Counsel*

Abrams & Byron, *Counsel to Authority*

Spilman Thomas & Battle, PLLC, *Disclosure Counsel*

Public Resources Advisory Group, *Financial Advisor*

Suttle & Stalnaker, PLLC, *Independent Auditors*

TABLE OF CONTENTS

SUMMARY

This summary is furnished to provide limited introductory information regarding the terms of the Series 2018 Senior Lien Bonds and is qualified by the more detailed descriptions appearing in this Official Statement, including the appendices hereto. Capitalized terms are used as defined in this Official Statement. The offering of the Series 2018 Senior Lien Bonds is made only by means of the entire Official Statement, and no person is authorized to make offers to sell or to solicit offers to buy the Series 2018 Senior Lien Bonds unless the entire Official Statement is delivered.

The Issuer	West Virginia Parkways Authority
The Series 2018 Senior Lien Bonds	West Virginia Parkways Authority $166,370,000 Senior Lien Turnpike Toll Revenue Bonds, Series 2018 (the "***Series 2018 Senior Lien Bonds***").
Terms of the Series 2018 Senior Lien Bonds	For a discussion of the terms of the Series 2018 Senior Lien Bonds, including the redemption provisions, see "THE SERIES 2018 SENIOR LIEN BONDS."
Purpose	The Series 2018 Senior Lien Bonds are being issued pursuant to Chapter 17, Article 16A of the Code of West Virginia, 1931, as amended (the "***Act***"), for the following purposes: (i) to provide funds to finance the costs of certain transportation projects consisting of parkway projects, as defined in the Act (collectively, the "***Projects***"), as described more particularly in "THE PROJECTS" herein, (ii) to reimburse the Authority for, or to provide funds to finance, certain costs and expenses incurred prior to or after the issuance of the Series 2018 Senior Lien Bonds in connection with the acquisition, design, construction, reconstruction, maintenance, improvement, repair or funding of the Projects, (iii) to fund the Series 2018 Senior Lien Debt Service Reserve Fund, and (iv) to pay costs of issuing the Series 2018 Senior Lien Bonds.
Book-Entry Only System	The Series 2018 Senior Lien Bonds are initially issuable only to Cede & Co., the nominee of The Depository Trust Company, New York, New York ("***DTC***"), pursuant to its book-entry only system. No physical delivery of the Series 2018 Senior Lien Bonds will be made to the beneficial owners of the Series 2018 Senior Lien Bonds. Principal and interest will be paid to Cede & Co., which will distribute such payments to the participating members of DTC for remittance to the beneficial owners of the Series 2018 Senior Lien Bonds. See "APPENDIX G – BOOK-ENTRY ONLY SYSTEM."
Trustee and Paying Agent	The Trustee and the initial Paying Agent is United Bank, a Virginia banking corporation authorized to transact business in the State, and its successors in such capacity.
Security and Source of Payment	The Series 2018 Senior Lien Bonds are obligations of the Authority, secured by a first lien on and pledge of (i) the Net Toll Road Revenues (as defined herein), (ii) amounts on deposit in certain Funds and Accounts created pursuant to and pledged by the Indenture as described herein, and (iii) any and all other property of any kind from time to time by delivery or by writing of any kind specifically conveyed, pledged, assigned or transferred, as and for additional security under the Indenture for the Series 2018 Senior Lien Bonds, by the Authority or by anyone on its behalf or its written consent in favor of the Trustee (collectively, the "***Trust Estate***"). See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS."

Senior Lien Debt Service Reserve Fund Requirement

The Senior Lien Debt Service Reserve Requirement for the Series 2018 Senior Lien Bonds is equal to the lesser of (i) 10% of the stated principal amount of the Series 2018 Senior Lien Bonds (plus or minus original issue premium or discount, if more than 2% of the stated principal amount), (ii) the maximum annual debt service on the Series 2018 Senior Lien Bonds, or (iii) 125% of the average annual debt service on the Series 2018 Senior Lien Bonds. The Series 2018 Senior Lien Debt Service Reserve Fund Requirement is $10,283,375, which is maximum annual debt service on the Series 2018 Senior Lien Bonds. See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS – Senior Lien Debt Service Reserve Fund" herein.

Operation and Maintenance Reserve Account Requirement

The Authority has covenanted to maintain funds in its Operation and Maintenance Reserve Account, an account within its Operation and Maintenance Fund, equal to the one-sixth of the amount recommended by its Consulting Engineers as the Operation and Maintenance Expenses, as defined herein, for its current Fiscal Year as included in the Authority's Annual Budget. See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS – Operation and Maintenance Reserve Account Requirement" herein.

Renewal and Replacement Reserve Fund Requirement

The Authority has covenanted to fund its Renewal and Replacement Reserve Fund in an annual amount equal to the amount recommended by its Consulting Engineers as the Renewal and Replacement Costs for its current Fiscal Year as included in the Authority's Annual Budget and to deposit in such Fund each month a minimum of one-twelfth of such annual amount. The Authority has covenanted in the Indenture to include estimates of its Renewal and Replacement Reserve Fund Requirement in its five-year capital program for the Turnpike that is required as a part of its Annual Budget. See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS – Renewal and Replacement Reserve Fund Requirement."

Toll Rate Covenant

The Authority has covenanted, at all times, to establish, charge and collect tolls for the privilege of traveling on the Turnpike at rates sufficient in each Fiscal Year to meet Operation and Maintenance Expenses and produce Net Toll Road Revenues of at least (i) 125% of the Annual Debt Service with respect to the Series 2018 Senior Lien Bonds and all other Outstanding Senior Lien Bonds issued under the Indenture, and (ii) 100% of the sum of (a) Annual Debt Service with respect to all Outstanding Bonds issued under the Indenture, (b) the amounts, if any, necessary to restore the amount on deposit in any Debt Service Reserve Fund to the applicable Series or, as applicable, aggregate or composite Debt Service Reserve Requirement and (c) the Renewal and Replacement Reserve Fund Requirement. See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS – Toll Rate Covenant."

Good Repair Covenant

The Authority has covenanted, at all times, to operate or cause the Turnpike to be operated, in an efficient manner and at a reasonable cost, to maintain, preserve and keep, or cause to be maintained, preserved and kept, the Turnpike, in good repair, working order and condition, and that its Consulting Engineers shall make a physical examination and inspection of the Turnpike each year and submit an annual report prior to the end of each fiscal year regarding the condition of the Turnpike and whether it has been maintained in good repair, working order and condition and in compliance with all covenants under the Indenture related to the efficient management and maintenance of the Turnpike. See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS – Good Repair Covenant."

Incurrence of Additional Senior Lien Indebtedness

Under the terms of the Indenture, the Authority may issue one or more series of Senior Lien Bonds on parity as to lien and source of payment with the Series 2018 Senior Lien Bonds, or one or more series of Subordinate Lien Bonds, which are junior and subordinate as to lien and source of payment with the Senior Lien Bonds (all Senior Lien Bonds and Subordinate Lien Bonds issued by the Authority pursuant to the Indenture are referred to herein as the "***Bonds***"), so long as:

(i) no event of default has occurred under the Indenture,

(ii) the Authority has complied with its Toll Rate Covenant for the prior Annual Period and is current in all deposits into the Funds and Accounts and all payments required to have been deposited into such Funds and Accounts under the Indenture as to all Senior Lien Bonds, and

(iii) either (a) an Authority Authorized Officer certifies that the Net Toll Road Revenues (adjusted to reflect any authorized and to be implemented within six months adjustment in tolls, fees and charges, as if such adjustment had been in effect since the beginning of the period described herein) for (A) the most recent Annual Period for which audited statements are available or (B) a 12-consecutive-month period in the immediately prior 18 months were at least 125% of the Maximum Annual Debt Service for all then Outstanding Senior Lien Bonds (excluding any Senior Lien Bonds being refunded) and the additional Senior Lien Bonds proposed to be issue, or (b) the Authority certifies that, based on reports of its Traffic and Revenue Consultant and Consulting Engineers, the projected Net Toll Road Revenues (adjusted to reflect any authorized adjustment in tolls, fees and charges, provided that such adjustment is to be implemented within six months as if such adjustment had been in effect since the beginning of the period described herein) for the current and each of the Annual Periods through the fifth Annual Period following the issuance of the additional Senior Lien Bonds are at least 135% of Annual Debt Service for each such year and projected Net Toll Road Revenues in the fifth such year equaled or exceeded 135% of the Maximum Annual Debt Service for all then Outstanding Senior Lien Bonds (excluding any Senior Lien Bonds being refunded) and the additional Senior Lien Bonds proposed to be issued.

If the additional Bonds are being issued to refund an existing series of Bonds, the additional refunding Bonds may be issued under the Indenture so long either (i) the aggregate Maximum Annual Debt Service for all then outstanding Bonds, after giving effect to the refunding, will be less than the aggregate Maximum Annual Debt Service for all outstanding Bonds prior to the refunding or (ii) the refunding will result in savings in the aggregate Annual Debt Service in every year. See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS – Additional Bonds."

Ratings	S&P Global Ratings, a division of Standard & Poor's Financial Services LLC and Fitch Ratings, Inc. have assigned credit ratings of "AA-" and "AA-," respectively to the Series 2018 Senior Lien Bonds. See "RATINGS."
Tax Exemption	In the opinion of Bond Counsel, under existing laws, regulations, rules and published rulings and judicial decisions of the United States of America, as presently written and applied, and assuming among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the Series 2018 Senior Lien Bonds is excludable from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986 (the "***Code***") and such interest will not be treated as a preference item for purposes of the alternative minimum tax imposed under the Code with respect to individuals and corporations. Under the Code, however, for the taxable years that began prior to January 1, 2018, such interest is included in the adjusted current earnings of a corporation for purposes of computing the alternative minimum tax. In addition, under the Act, the Series 2018 Senior Lien Bonds, their transfer and the income therefrom (including any profit made on the sale thereof) shall at all times be free from taxation within the State. See "TAX MATTERS."
Continuing Disclosure	Rule 15c2-12 under the Securities and Exchange Act of 1934, as amended, generally prohibits an underwriter from purchasing or selling municipal securities in an initial offering unless it has determined that the issuer of such securities has committed to provide, annually, certain information, including audited financial information, and notice of various events, if material. To enable the Underwriters to comply with the provisions of Rule 15c2-12, the Authority will enter into a Continuing Disclosure Agreement to provide continuing disclosure on behalf of the Authority regarding the Series 2018 Senior Lien Bonds. See "CONTINUING DISCLOSURE."

OFFICIAL STATEMENT
$166,370,000
WEST VIRGINIA PARKWAYS AUTHORITY
SENIOR LIEN TURNPIKE TOLL REVENUE BONDS
SERIES 2018

INTRODUCTION

General

The purpose of this Official Statement is to set forth certain information concerning the West Virginia Parkways Authority (the "***Authority***") and its $166,370,000 Senior Lien Turnpike Toll Revenue Bonds, Series 2018 (the "***Series 2018 Senior Lien Bonds***"). The Series 2018 Senior Lien Bonds are being issued pursuant to the Constitution and laws of the State of West Virginia (the "***State***"), including Chapter 17, Article 16A of the Code of West Virginia, 1931, as amended (the "***Act***"), a Resolution adopted by the Authority on June 7, 2018, a Master Trust Indenture dated as of August 1, 2018 (the "***Master Indenture***"), and the First Supplemental Indenture dated as of August 1, 2018 (the "***First Supplemental Indenture***" and, together with the Master Indenture, the "***Indenture***"), between the Authority and United Bank, a Virginia banking corporation authorized to transact business in the State, as trustee (the "***Trustee***"). The Series 2018 Senior Lien Bonds are initially issued in "book-entry" form only. See "APPENDIX G − BOOK-ENTRY ONLY SYSTEM" herein. Certain capitalized terms used in this Official Statement, unless otherwise defined in this Official Statement, have the meanings set forth in "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE."

The Authority

The Authority (formerly the West Virginia Parkways, Economic Development and Tourism Authority), as the successor-in-interest to the West Virginia Turnpike Commission (the "***Turnpike Commission***"), is a public body corporate and politic and instrumentality of the State organized and existing by virtue of the Act, with the power to (i) construct, reconstruct, improve, maintain, repair, operate or finance parkway projects on or off the West Virginia Turnpike (the "***Turnpike***"*)*, as described in detail herein, (ii) charge and fix tolls or fees for use of the Turnpike or other parkway projects and (iii) issue revenue bonds for such purposes. The Authority's composition, powers, duties, functions and other attributes are derived from the Act. See "THE AUTHORITY" herein.

Purpose of the Series 2018 Senior Lien Bonds

On June 22, 2017, Governor James C. Justice, II signed Senate Bill 1003 into law, amending the Act to allow the Authority to issue its revenue bonds as a means of funding certain transportation projects to be constructed by the State Division of Highways (the "***Division of Highways***"), a division of the State Department of Transportation (the "***WVDOT***"). Projects to be funded must be included in either the Division of Highways' Statewide Transportation Improvement Plan ("***STIP***") in effect on June 1, 2017 (see "WEST VIRGINIA DEPARTMENT OF TRANSPORTATION – General − Division of Highways" herein for a description of the Division of Highways' STIP), or the Division of Highways SOS Transportation Investment Program Candidate Project List dated May 3, 2017. Senate Bill 1003 requires that such projects must be located in ten specific counties with a nexus to the Turnpike, including four counties through which the Turnpike runs and six counties contiguous to those four counties, to the extent allowed under the Act and applicable federal laws. Senate Bill 1003 was enacted by the State Legislature to help implement the Roads to Prosperity Program proposed by Governor Justice to revitalize the State by improving the State's transportation system, creating jobs and boosting the economy.

The Series 2018 Senior Lien Bonds are being issued as part of Governor Justice's Roads to Prosperity Program, and are intended to provide a portion of up to $2.6 billion of financing for transportation projects to be completed in the State over the next seven to ten years. See "ROADS TO PROSPERITY PROGRAM," "SOURCES AND USES OF FUNDS" and "PLAN OF FINANCE" herein.

Security for the Series 2018 Senior Lien Bonds

The Series 2018 Senior Lien Bonds constitute obligations of the Authority secured by and payable solely from a first lien on and pledge of (i) the Net Toll Road Revenues (as defined herein), (ii) amounts on deposit in certain Funds and Accounts created pursuant to and pledged by the Indenture, and (iii) any and all other property of any kind from time to time conveyed, pledged, assigned or transferred, as additional security for the Series 2018 Senior Lien Bonds, by the Authority or anyone on its behalf or its consent in favor of the Trustee (collectively, the "***Trust Estate***"). See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS" herein.

Redemption

The Series 2018 Senior Lien Bonds are subject to optional and mandatory sinking fund redemption prior to maturity under certain circumstances as more fully set forth herein. See "THE SERIES 2018 SENIOR LIEN BONDS – Redemption" herein.

Limited Obligations

THE SERIES 2018 SENIOR LIEN BONDS ARE OBLIGATIONS OF THE AUTHORITY PAYABLE SOLELY FROM THE TRUST ESTATE. THE SERIES 2018 SENIOR LIEN BONDS SHALL NOT BE DEEMED TO BE A DEBT OR LIABILITY OF THE STATE OR ANY POLITICAL SUBDIVISION THEREOF OR A PLEDGE OF THE FAITH, CREDIT OR TAXING POWER OF THE STATE OR OF ANY SUCH SUBDIVISION, AND ARE PAYABLE SOLELY FROM THE TRUST ESTATE. THE AUTHORITY HAS NO TAXING POWER.

PLAN OF FINANCE

The proceeds of the Series 2018 Senior Lien Bonds will provide funds to (i) finance the costs of the Projects, as described more particularly in "THE PROJECTS" herein (the "***Projects***"), (ii) reimburse the Authority for certain costs and expenses incurred prior to the issuance of the Series 2018 Senior Lien Bonds in connection with the acquisition, design, construction, reconstruction, maintenance, improvement, repair or funding of the Projects, (iii) fund the Series 2018 Senior Lien Debt Service Reserve Fund, and (iv) pay costs of issuing the Series 2018 Senior Lien Bonds. The Series 2018 Senior Lien Bonds are being issued as part of Governor Justice's Roads to Prosperity Program. See "ROADS TO PROSPERITY PROGRAM" herein.

In accordance with the Act, a portion of the proceeds of the Series 2018 Senior Lien Bonds will be deposited into the State Road Construction Account and expended by the Division of Highways, in accordance with the terms of a Memorandum of Understanding among the Authority, the Division of Highways, the Trustee and the State Treasurer (the "***MOU***"*)*, to pay costs of constructing the Projects. See "SOURCES AND USES OF FUNDS," "ROADS TO PROSPERITY PROGRAM – Recent Legislation Amending the Act" and THE PROJECTS – Memorandum of Understanding" herein. The use of proceeds of the Series 2018 Senior Lien Bonds deposited into the State Road Construction Account and expended by the Division of Highways to finance the Projects will be subject to the terms of the MOU which limits the Authority's financial obligations to the Division of Highways to only the amounts so deposited in the State Road Construction Account. See "APPENDIX H – MEMORANDUM OF UNDERSTANDING" herein.

SOURCES AND USES OF FUNDS

The proceeds from the sale of the Series 2018 Senior Lien Bonds are to be applied as set forth in the following table:

SOURCES OF FUNDS	
Principal Amount of the Series 2018 Senior Lien Bonds	$ 166,370,000.00
Net Original Issue Premium	17,954,195.20
Total Sources of Funds	$ 184,324,195.20
USES OF FUNDS	
Deposit to State Road Construction Account	$ 172,000,000.00
Deposit to Series 2018 Debt Service Reserve Account	10,283,375.00
Deposit to Series 2018 Costs of Issuance*	2,040,820.20
Total Uses of Funds	$ 184,324,195.20

*Includes fees and expenses of Bond Counsel, Disclosure Counsel, other legal fees, if any, Underwriters' discount, fees for the rating agencies, Financial Advisor fees, Trustee fees, Traffic Consultant fees, printing fees, and miscellaneous fees and expenses relating to the issuance of the Series 2018 Senior Lien Bonds.

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ROADS TO PROSPERITY PROGRAM

General

During his term as governor, Governor Justice has proposed a number of measures to revitalize the State's economy, including his announcement in 2017 of an approximately $2.6 billion transportation financing plan known as the "Roads to Prosperity Program," which was initiated by the Governor to improve the State's roads and bridges, create jobs and boost the economy. The Roads to Prosperity Program includes, among other financing sources, toll revenue bonds to be issued by the Authority over the next few years, including the Series 2018 Senior Lien Bonds, to finance transportation projects both on the Turnpike and off the Turnpike in a ten-county area adjacent to the Turnpike, in accordance with the Act.

Financing of the other transportation projects under the Roads to Prosperity Program is expected to be completed with a combination of proceeds from the issuance by the State of up to $1.6 billion of general obligation bonds over a four-year period and proceeds from the issuance of up to $500 million of surface transportation special obligation notes by the State's Commissioner of Highways. As of August 1, 2018, bonds and notes in the aggregate principal amount of approximately $1.1 billion have been issued by the State and the Commissioner of Highways under the Roads to Prosperity program. See "WEST VIRGINIA DEPARTMENT OF TRANSPORTATION - Recent and Anticipated Financings for State Transportation Projects" below.

The issuance by the Authority of toll revenue bonds, including the Series 2018 Senior Lien Bonds, is not dependent on the issuance by the State of general obligation bonds or by the State Commissioner of Highways of surface transportation special obligation notes under the Roads to Prosperity Program. Additionally, the Act does not require that the Authority issue any additional series of toll revenue bonds.

Recent Legislation Amending the Act

On June 22, 2017, Governor Justice signed into law Senate Bill 1003, which was one of several pieces of legislation enacted by the State Legislature during the First Extraordinary Session of the 2017 Legislature to implement the Roads to Prosperity Program. Senate Bill 1003 amended the Act to expand the powers of the Authority to, among other things:

(i) continue to charge and collect tolls and/or increase or adjust tolls for passage along the Turnpike, which powers were otherwise scheduled to end in the summer of 2019;

(ii) issue toll revenue bonds for the purpose of paying all or a portion of the costs of the Authority to construct, maintain, improve or repair parkway projects on the Turnpike, which the Authority was not authorized to do under the Act prior to passage of Senate Bill 1003;

(iii) issue toll revenue bonds for the purpose of paying all or a portion of the costs of the Division of Highways to construct, maintain, improve or repair off-Turnpike parkway projects in ten counties of the State, as described below, and deposit all or a portion of the proceeds from the issuance of such toll revenue bonds including, without limitation, in accordance with the MOU, the Series 2018 Senior Lien Bonds, into the newly created State Road Construction Account within the State Road Fund to be used by the Division of Highways to construct, maintain, improve or repair such off-Turnpike parkway projects; and

(iv) implement a single fee program as a condition of, and in connection with, any increase in its toll rates to provide Toll Class 1 passenger (non-commercial) motor vehicle customers using a West Virginia *E-ZPass®* transponder with unlimited passage on the Turnpike (or any future toll roads in the State) for an annual flat fee, not to exceed $25 per year (subject to adjustments of up to 5% every three years), plus a transponder issuance cost.

Under Senate Bill 1003 and as discussed above, the Authority may issue revenue bonds payable from tolls collected for passage along the Turnpike and may deposit, in accordance with the MOU, some or all of the net proceeds of such bonds into the State Road Construction Account for off-Turnpike parkway projects in the four counties through which the Turnpike runs, being Kanawha County, Fayette County, Raleigh County and Mercer County, and six additional counties that surround the Turnpike, being Greenbrier County, Monroe County, Summers County, McDowell County, Nicholas County and Wyoming County. The Authority may also issue toll revenue bonds to finance the construction, maintenance, improvement or repair of parkway projects on the Turnpike.

Toll Rate Increases

As authorized by Senate Bill 1003 and in conjunction with the issuance by the Authority of the Series 2018 Senior Lien Bonds, the Authority has adopted toll rate increases which will take effect on January 1, 2019. Specifically, the Authority, at its meeting held on June 7, 2018, and following public notice, public meetings and a public comment period as required by the Act, approved a new toll rate schedule that increases its current toll rates by 100% for all classes of vehicles. In addition, the Authority authorized forward-looking automatic toll increases that will begin on January 1, 2022, equal to 1.60% per year for all cash, West Virginia *E-ZPass*® and non-West Virginia *E-ZPass*® customers, with the increased cash toll rates to be rounded to the nearest $0.25. See "THE WEST VIRGINIA TURNPIKE – Toll Rates – June 2018 Toll Increase" herein.

One aspect of the Authority's recently approved toll rate schedule relates to Toll Class 1 passenger motor vehicles (*i.e.*, two axle passenger vehicles weighing less than 8,000 pounds and under 7 feet six inches that are being driven for personal, non-commercial use), that have a West Virginia *E-ZPass*® account and transponder. These passengers will be eligible for unlimited travel on the Turnpike for an annual flat fee equal to $25 per year per vehicle (plus transponder issuance costs, unless such passengers already have a transponder issued by the Authority), beginning on January 1, 2019. This annual flat fee program, required by Senate Bill 1003 to be offered by the Authority, is to be known as the "Single Fee Discount Program." On January 1, 2022, the $25 annual flat fee will automatically increase by 5.0%, and will then automatically increase by 5.0% on January 1st of every third year thereafter. The Authority currently maintains a passenger car discount program that has been in place since January 1994, but at a higher annual fee.

Beginning on or about September 15, 2018, the Authority will offer its Toll Class 1 passenger (non-commercial) vehicle customers an option to enroll early in the Single Fee Discount Program on or before December 31, 2018, at a reduced rate of $24 per vehicle (plus a transponder issuance cost, as appropriate) for unlimited travel on the Turnpike for the period commencing on the date of enrollment through December 31, 2021. This option will be available only for qualifying customers who sign up for *WV E-ZPass*® prior to December 31, 2018. Existing West Virginia *E-ZPass*® customers will be automatically enrolled in the Single Fee Discount Program at the reduced rate, unless such customers opt out of the program by a deadline to be set by the Authority. See "THE WEST VIRGINIA TURNPIKE – Toll Rates – Single Fee Discount Program" herein.

The toll increases have been determined by the Authority taking into account the amount necessary to pay Operation and Maintenance Expenses, meet projected debt service on the Bonds to be issued under the Indenture, including the Series 2018 Senior Lien Bonds, fund Renewal and Replacement Costs necessary to maintain the Turnpike and fund capital needs of the Authority. For a complete description of the toll rate schedule adopted by the Authority at its meeting on June 7, 2018, see "THE WEST VIRGINIA TURNPIKE – Toll Rates – June 2018 Toll Increase" herein and "APPENDIX D − TRAFFIC AND REVENUE STUDY."

The Authority has the ability under the Act to increase tolls further, beyond the automatic increases that are part of the recently adopted revised toll rate schedule, including additional increases that may be required to satisfy the Toll Rate Covenant in the Indenture. See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS – Toll Rate Covenant" herein and "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE."

Traffic and Toll Revenue Forecast and Projected Results

Attached hereto as Appendix D is the West Virginia Turnpike 2018 Revenue Bond Study prepared by CDM Smith Inc. ("***CDM Smith***"), the Authority's Traffic Consultant, dated July 13, 2018 (the "***Traffic and Revenue Study***"). As set forth in the Traffic and Revenue Study, total gross toll revenue is estimated to increase each year from approximately $90 million in calendar year 2017 to approximately $182 million in calendar year 2050. The forecast assumes escalation of toll rates approved by the Authority, as described above. The Traffic and Revenue Study is subject to the limitations and assumptions detailed therein, and should be read in its entirety for a full description of assumptions and methodologies used to develop such forecasts and the related limitations. See "SUMMARY OF PROJECTED OPERATIONS – Summary of Traffic Consultant's Report," "APPENDIX D – TRAFFIC AND REVENUE STUDY," and "RISK FACTORS" herein.

THE PROJECTS

Description of the Projects

The Series 2018 Senior Lien Bonds are being issued, in part, to provide funds to finance the costs of construction by the Division of Highways of certain transportation projects off the Turnpike in Nicholas, Mercer and Wyoming Counties, which are three of the ten counties adjacent to the Turnpike. These Projects are part of the list of projects expected to be constructed by the Division of Highways under the Roads to Prosperity Program. These Projects have been selected by the Authority in consultation with, and upon the recommendation and determination of, the Division of Highways. All such selected projects that were included are also included in either the Division of Highways STIP in effect on June 1, 2017, or its SOS Transportation Investment Program Candidate Project List dated May 3, 2017. All of the Projects are designed to be complementary to the Turnpike and fall within a clear nexus to the Turnpike itself. The Authority is not responsible for any cost-overruns or delays related to construction of the Projects.

Pursuant to the Act, these Projects that are initially contemplated to be financed with a portion of the proceeds of the Series 2018 Senior Lien Bonds consist of the following:

Powells Creek Bridge Project. This project consists of the replacement of the Powells Creek Bridge in Nicholas County, West Virginia.

Kenneth Shadrick Bridge Project. This project consists of the rehabilitation of the Kenneth Shadrick Bridge in Wyoming County, West Virginia.

King Coal Highway: Airport Road to John Nash Boulevard Project. This project is for the construction of 3.8 miles of four lane road from WV 123 Airport Road to John Nash Boulevard in Mercer County, West Virginia.

West Virginia Route 10 Operational Improvements Project. This project consists of several projects described below:

- Construction project from US 19 to the Wyoming County line, consisting of the construction of approximately 14 miles of roadway improvements, 4 bridge sites and a slide repair.

- Construction project from the Wyoming County line to Pineville, Mercer County, West Virginia, consisting of approximately 24 miles of roadway improvements, 6 bridge sites, 14 curve widening sites, 6 curve realignments, 1 new truck turn-out, and 6 intersection improvement locations.

- Construction project from Pineville, Mercer County, West Virginia, to the Logan County line, consisting of approximately 23 miles of roadway improvements, 6 bridge sites, 7 curve widening sites, 3 curve realignment sites, 2 truck turn-outs, 3 slide repairs, and 1 intersection improvement location.

The locations of the above Projects are depicted on the map set forth on the following page.

In addition, a portion of the proceeds of the Series 2018 Senior Lien Bonds will be used to finance, or reimburse the Authority for, or provide funds to finance, certain costs and expenses incurred prior to, or after, the issuance of the Series 2018 Senior Lien Bonds in connection with the acquisition, design, construction, reconstruction, maintenance, improvement, repair or funding of the Projects.

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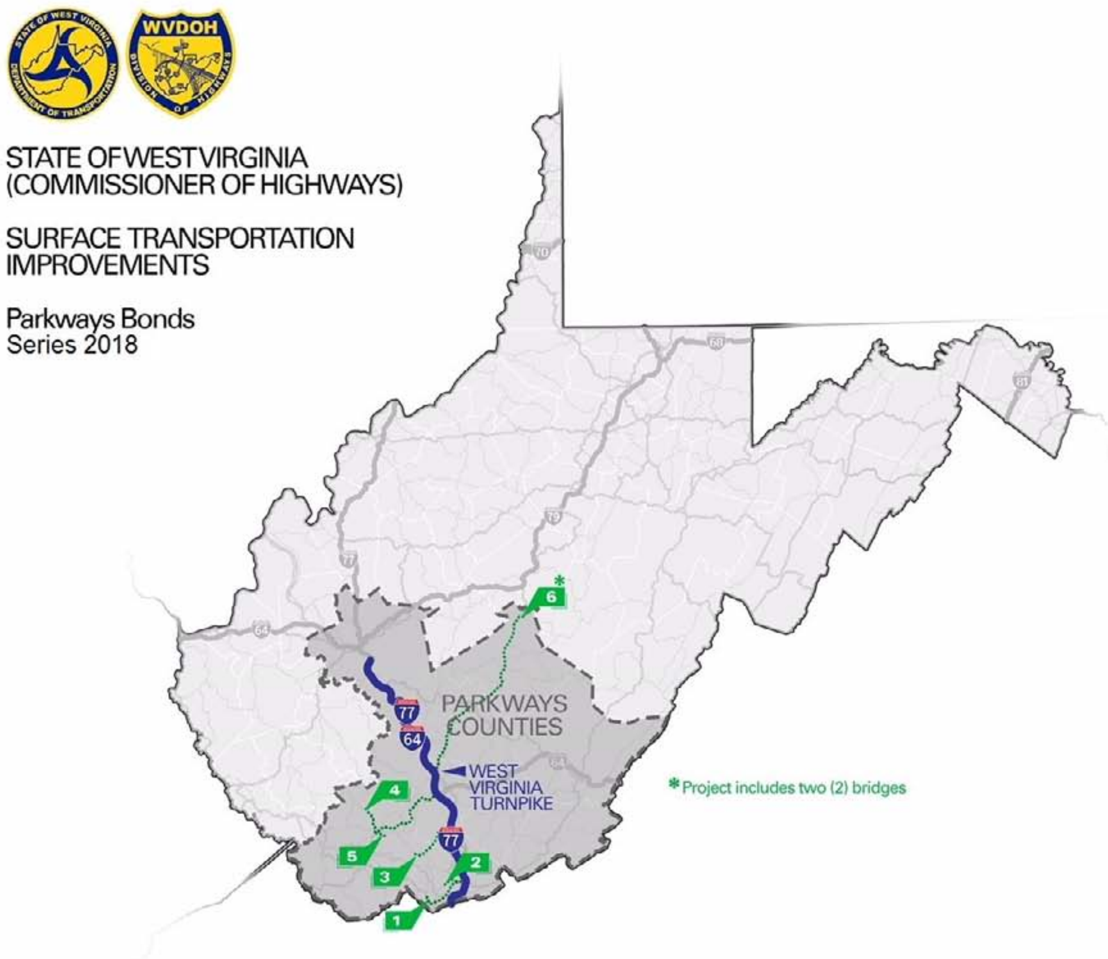
Map of Projects



ID	COUNTY	DISTRICT	DESCRIPTION	COST
1	Mercer	10	King Coal Highway – WV 123 Airport Rd to John Nash Blvd	$85,000,000
2	Mercer	10	WV 10, Kegley – Wyoming County Line	$20,100,000
3	Wyoming	10	WV 10, Wyoming County Line – Pineville	$29,940,000
4	Wyoming	10	WV 10, Pineville – Logan County Line	$31,500,000
5	Wyoming	10	WV 10, Ken Shadrick Bridge	$1,628,000
6	Nicholas	9	Powells Creek Bridge & Birch River Bridge	$3,981,000

Partnership with the Division of Highways

As part of the Roads to Prosperity Program, the Division of Highways intends to widen certain sections of the Turnpike around the I-77/I-64 interchange on the Turnpike by adding an additional lane from milepost 41.3 to milepost 46.9 in the southbound direction and from milepost 40.2 to milepost 47.9 in the northbound direction, as well as widening 8 bridges, installing high mast lighting at five interchanges and upgrading signage, at an estimated cost of approximately $101 million. This lane-widening project will be funded from proceeds of the State's General Obligation State Road Bonds, Series 2018 A and Series 2018 B, except for certain project management costs that will be paid by the Authority for contract administration and quality assurance. See "WEST VIRGINIA DEPARTMENT OF TRANSPORTATION – Recent and Anticipated Financings for State Transportation Projects" herein. This lane-widening project will be completed in accordance with the terms of a Project Management Agreement dated June 21, 2018, between the Division of Highways and the Authority. The Division of Highways' decision to fund this project on behalf of the Authority eliminated a significant capital investment that otherwise would have been required by the Authority for this project.

Memorandum of Understanding

In connection with the issuance of the 2018 Senior Lien Bonds, the Authority will enter into a Memorandum of Understanding (the "***MOU***") with the Division of Highways, the Trustee and the State Treasurer, to establish procedures for the use and expenditure by the Division of Highways of any proceeds of the 2018 Senior Lien Bonds held in the State Road Construction Account created by Senate Bill 1003, which will be expended by the Division of Highways for the construction, maintenance, improvement or repair of the Projects, and to address other matters including, without limitation, permitted investments and procedures relating to federal tax requirements. See "PLAN OF FINANCE" and "APPENDIX H – MEMORANDUM OF UNDERSTANDING" herein.

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OUTSTANDING BONDS AND ANNUAL DEBT SERVICE REQUIREMENTS

The Series 2018 Senior Lien Bonds are the only series of Bonds outstanding under the Indenture. See "THE AUTHORITY – Defeasance or Redemption of Prior Debt Issuances" herein. The Authority may issue one or more series of additional Bonds under the Indenture, including one or more series of additional Senior Lien Bonds, provided certain tests are met. See "SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS – Additional Bonds" herein.

The following table sets forth, for each fiscal year ending June 30, the amounts to be required in each fiscal year for the payment of debt service on the Series 2018 Senior Lien Bonds.

Year Ending June 30	Principal ($)	Interest ($)	Total Debt Service
2019	2,830,000.00	6,195,313.54	9,025,313.54
2020	2,650,000.00	7,629,625.00	10,279,625.00
2021	2,785,000.00	7,497,125.00	10,282,125.00
2022	2,925,000.00	7,357,875.00	10,282,875.00
2023	3,070,000.00	7,211,625.00	10,281,625.00
2024	3,225,000.00	7,058,125.00	10,283,125.00
2025	3,385,000.00	6,896,875.00	10,281,875.00
2026	3,555,000.00	6,727,625.00	10,282,625.00
2027	3,730,000.00	6,549,875.00	10,279,875.00
2028	3,920,000.00	6,363,375.00	10,283,375.00
2029	4,115,000.00	6,167,375.00	10,282,375.00
2030	4,320,000.00	5,961,625.00	10,281,625.00
2031	4,535,000.00	5,745,625.00	10,280,625.00
2032	4,760,000.00	5,518,875.00	10,278,875.00
2033	5,000,000.00	5,280,875.00	10,280,875.00
2034	5,250,000.00	5,030,875.00	10,280,875.00
2035	5,515,000.00	4,768,375.00	10,283,375.00
2036	5,790,000.00	4,492,625.00	10,282,625.00
2037	6,080,000.00	4,203,125.00	10,283,125.00
2038	6,380,000.00	3,899,125.00	10,279,125.00
2039	6,635,000.00	3,643,925.00	10,278,925.00
2040	6,970,000.00	3,312,175.00	10,282,175.00
2041	7,315,000.00	2,963,675.00	10,278,675.00
2042	7,685,000.00	2,597,925.00	10,282,925.00
2043	8,065,000.00	2,213,675.00	10,278,675.00
2044	8,470,000.00	1,810,425.00	10,280,425.00
2045	8,810,000.00	1,471,625.00	10,281,625.00
2046	9,160,000.00	1,119,225.00	10,279,225.00
2047	9,530,000.00	752,825.00	10,282,825.00
2048	9,910,000.00	371,625.00	10,281,625.00
Total	**$166,370,000.00**	**$140,813,038.54**	**$307,183,038.54**

Source: West Virginia Parkways Authority.

THE AUTHORITY

General

The Authority is a public body corporate and politic and instrumentality of the State, organized and existing by virtue of the Act. The Authority is empowered to construct, reconstruct, improve, maintain, repair, operate or finance parkway projects, to charge and fix tolls or fees for use of the Turnpike or other parkway projects and to issue revenue bonds for its purposes. Parkway projects include projects to be constructed, reconstructed, improved, maintained, repaired or operated on the Turnpike, as well as projects to be constructed, reconstructed, improved, maintained, repaired or operated off the Turnpike, to the extent allowed under the Act and applicable federal laws.

Abolishment of West Virginia Turnpike Commission

On June 1, 1989, pursuant to the Act, the Authority was formed under the name "West Virginia Parkways, Economic Development and Tourism Authority," as the successor-in-interest to the Turnpike Commission which had been created by the West Virginia Legislature in 1947. The duties, powers and functions of the Turnpike Commission were transferred to the Authority, and the Authority assumed all assets, property, obligations, indebtedness and other liabilities of the Turnpike Commission as of June 1, 1989. Personnel of the Turnpike Commission were also assumed by and transferred to the Authority. Upon its creation on June 1, 1989, the Authority replaced the Turnpike Commission in the mission of operating the Turnpike.

During the regular session of the 2010 State Legislature, Senate Bill 427 was enacted to amend and reenact certain sections of the Act effective as of July 1, 2010, which, among other things, renamed the Authority to its current name of the "West Virginia Parkway Authority."

Governance

The Authority consists of nine members and includes two members from each of the State's three congressional districts, one at-large member, the Secretary of Transportation and the Governor or his designee, as Chairman. Public members of the Authority are appointed by the Governor, with the advice and consent of the Senate, to five-year terms. A public member may not serve more than two consecutive five-year terms.

The officers and members of the Authority's Board, certain information regarding their experience and the dates of expiration of the terms of office of the public members are as follows:

James C. Justice, II, Governor of the State. Governor Justice was born April 27, 1951, to James Conley Justice and Edna Ruth Justice. He attended Raleigh County public schools and graduated from Woodrow Wilson High School in 1969, and attended Greenbrier Military Academy as a post graduate. Governor Justice went to Marshall University in Huntington, West Virginia, and was captain of the golf team for two years before earning his undergraduate degree and a master's degree in Business Administration. Before being elected by the citizens of West Virginia as its governor, Governor Justice was the president and CEO of 102 different companies, including companies involved in coal mining, agriculture, cotton gins, turfgrass operations, golf courses, timber enhancement and land projects. Governor Justice also owns and operates the Greenbrier Resort in White Sulphur Springs, West Virginia, as well as The Resort at Glade Springs and Brier Patch Golf Links, all in Raleigh County, West Virginia. The Governor was the 1998 Recipient of the Beckley-Raleigh County Chamber of Commerce's Community Service Award as a result of his involvement with youth programs in the area, the 1998 Recipient of the "Spirit of Beckley" Award from the Beckley-Raleigh County YMCA, the 2000 recipient of the City of Hope Medical Center's "Spirit of Life" award, the 2009 Charleston Gazette's "West Virginian of the Year." In 2010, he was named a "Distinguished West Virginian" by Governor (now Senator) Joe Manchin and the 2011 Honoree at the National Multiple Sclerosis Society's Blue Ridge Chapter "Dinner of Champions." He was chosen Mountain Athletic Conference "Coach of the Year" and West Virginia High School "Coach of the Year" in 2012 and was named" West Virginian of the Year" in 2014 and again in 2016 by the Clarksburg Exponent Telegram.

Ann V. Urling, Governor's Chairman Designee. Ann Urling is a native of Shinnston, West Virginia, in Harrison County and has resided in Kanawha County since 1991. She currently serves as the Deputy Chief of Staff for Governor Justice. She has more than 31 years of experience as a community banker and previously served as the Senior Vice President of Summit Community Bank in Charleston, WV from 1999 until September 2017 when she accepted her current position in the Governor's administration. She earned her bachelor's degree from West Virginia University in 1986 and is a graduate of the Lloyd P. Calvert Graduate School of Banking. Ann is an active Rotarian and Paul Harris Fellow and serves on the Childhood Language Center Board (which helps children who have speech and hearing issues get assistance at no cost to the family). She recently finished her term as a board member of the Rae of Hope (which helps women with drug and alcohol issues find sustained recovery).

Thomas J. Smith, P.E. Mr. Smith currently serves as the Secretary of the West Virginia Department of Transportation. He is an award winning professional engineer who has devoted his lengthy and distinguished career to the betterment of transportation infrastructure around the country, and especially in West Virginia. A graduate of North Carolina State University, Secretary Smith previously worked for over 37 years for the Federal Highway Administration ("***FHWA***") in numerous states. He was the FHWA Project Administrator for Boston's famous "Big Dig." In his 16 year tenure as FHWA's Division Administrator for the West Virginia Division, Secretary Smith oversaw the creation of a state and federal strategy for constructing US Route 35 and the Appalachian Corridor highway system. Secretary Smith is a licensed professional engineer in West Virginia, Pennsylvania and Ohio.

Mike Vinciguerra, Vice Chairman, At-Large Member. Mr. Vinciguerra was Vice President and Manager of Paper Supply Company (now known as Jan-Pak). He has extensive experience in purchasing and management and was employed by Paper Supply Company for 35 years. Mr. Vinciguerra also serves on the Mercer County Building Commission and is very active in several civic organizations. He resides in Bluefield, West Virginia. Mr. Vinciguerra was appointed to the Authority on June 2, 2006, and his current term expires on June 30, 2021.

Tom Mainella, Secretary, Member – 1st Congressional District. Mr. Mainella is the manager of United Security Agency Insurance in Fairmont, West Virginia. He also serves as the Mayor of the City of Fairmont. A native of Fairmont, he is a graduate of West Virginia University and a former West Virginia State Policeman. He previously owned Chevrolet dealerships in Hundred and Shinnston, West Virginia. Mr. Mainella has served two terms on Fairmont City Council, currently serves as the President of the Fairmont Airport Authority, has served as president of the Marion County Rescue Squad, and is a member of the Fairmont Sanitary Sewer Board. He is a member of the Fairmont Elks Lodge, Holy Spirit Church, Phi Kappa Psi fraternity, and the Knights of Columbus. He resides in Fairmont, West Virginia. Mr. Mainella was appointed to the Authority on July 10, 2010, and his current term expires on June 30, 2020.

William (Bill) Seaver, IV, Member – 3rd Congressional District. Mr. Seaver is a life-long resident of Princeton, West Virginia, attended Concord University and graduated from the Cincinnati School of Mortuary Science in 1973. He is involved in many community activities including: serving on the Mercer County Board of Education for 18 years, including serving as its President for four years, past member of the Princeton Community Hospital Board of Directors, member of Princeton Elks Lodge, Princeton Moose Lodge, Beni Kedem Shrine Temple, Princeton Masonic Lodge, #134, Royal Arch Mason, #44, Knights Temple, #19, member and past-president of the Princeton Mercer County Chamber of Commerce, and past member of the Princeton City Council. Mr. Seaver is currently the President of Seaver Funeral Service, Inc., which has been a family owned business since 1844. Mr. Seaver was appointed to the Authority on July 9, 2007, and his current term expires on June 30, 2020.

Douglas M. Epling, Member – 3rd Congressional District. Mr. Epling is the owner of Mountain Edge Mining, Legacy Resources and Hanover Resources which are coal mining operations. He previously served as the Chief Engineer for Beckley Coal Mining Company for 19 years. Mr. Epling was involved for many years with boxing and baseball throughout the State of West Virginia, and is a member of the Southern West Virginia Boxing Hall of Fame. He served as West Virginia State Boxing Commissioner for 9 years. He is a member of the Board of Visitors at WVU Tech, and a member of the WVU Tech Athletic Hall of Fame. Presently, he serves as Chairman of the Beckley Police Commission. He is a member and past Master of Coal City Masonic Lodge #156, Royal Arch Mason and 32 degree Scottish Rite Mason. He is a member of the Crab Orchard-MacArthur Lions Club. Mr. Epling was the recipient of Rotary Paul Harris Fellow award and was a 2018 Inductee in the West Virginia Sports Legend. Mr. Epling was appointed to the Authority on January 29, 2009, and his current term expires on June 30, 2022.

Alisha Maddox, Member – 2nd Congressional District. Ms. Maddox is the Chief Communications Officer/Owner of Charles Ryan Associates. She is a graduate of Marshall University with a Bachelor of Arts degree in Journalism and a Master of Arts degree in Journalism. Ms. Maddox was recognized in 2017 as the "Woman on a Mission" by Union Mission Ministries, a "West Virginia Young Gun" by West Virginia Executive Magazine and the "West Virginia Wonder Woman" by West Virginia Living Magazine. She is also a Leadership West Virginia Graduate, Class of 2014, and is the current Project Leader for "Explore the New Manufacturing" Education Campaign for the West Virginia Manufacturers Association Educational Fund. In addition to serving on the Authority's Board, Ms. Maddox currently serves on the following boards and committees: Leadership WV Board of Directors and Fundraising Committee; Robert C. Byrd Institute of Technology, Early Stage Funding Opportunity Committee; WV Department of Education, State Superintendent's Stakeholders Advisory Committee; American Advertising Federation-WV Chapter, Board of Directors, Secretary; and, Public Relations Society of America-WV Chapter, Board of Directors and Membership Committee Co-Chair. She is the Co-founder of WV Visionary Group, committed to working with educators on inspiring, encouraging and elevating students. Ms. Maddox was appointed to the Authority on July 1, 2017, and her current term expires on June 30, 2021.

William (Bill) Cipriani, Member – 1st Congressional District. Mr. Cipriani has been a practicing attorney in his hometown of Wellsburg, West Virginia for 28 years. Prior to establishing his law firm in Wellsburg, he practiced law in Moundsville for two years. In addition to his private practice, Bill has also served as Wellsburg's city solicitor since 2006 and as an assistant prosecuting attorney for Brooke County since 2010. Bill is an active member of the Wellsburg Lions Club for 28 years, having served multiple terms as president and secretary. Mr. Cipriani is a 1983 graduate of the West Virginia University College of Law and obtained a Bachelor of Science degree in Journalism from West Virginia University in 1980. He was appointed to the Authority on May 10, 2013, and his current term expires on June 30, 2019.

Troy N. Giatras, Member – 2nd Congressional District. Mr. Giatras has been an attorney since 1990. He is the owner of The Giatras Law Firm, PLLC, practicing in the areas of civil and criminal law. Mr. Giatras is a graduate of Duquesne University, Bachelor of Arts Degree, 1987, and West Virginia University College of Law, JD, 1990. He is a member of many professional organizations, including the American Bar Association, the West Virginia State Bar Association and the Kanawha County Bar Association. He is currently licensed in the State of West Virginia, Maryland, Pennsylvania and the District of Columbia. Mr. Giatris is a Member of the PEIA Finance Board, the Visiting Committee for the WVU College of Law, the Charleston Rotary Club, Sacred Heart Co-Cathedral, and is the Fiduciary Commissioner for Kanawha County Probate and a Volunteer Golf Coach for Charleston Catholic High School. Other community activities include: Appointed Special Prosecutor, Kanawha County, WV; Counsel to the Senate Minority Leader, Legislative Session 1997 to 1998 and 1998 to 1999; Appointed to Private Industry Council of Kanawha County, WV; Appointed to Board of Zoning Appeals, Charleston, WV, Chairman; Board Member, the Leukemia and Lymphoma Society, West Virginia Chapter; and, Board Member, Ronald McDonald House, Southern West Virginia. He resides in Charleston, West Virginia. Mr. Giatras was appointed to the Authority on January 12, 2017, and his current term expires on June 30, 2019.

The following individuals comprise the senior staff of the Authority:

Gregory C. Barr is the General Manager of the Authority and has been with the Authority for 29 years. He is a Certified Public Accountant and a graduate of Marshall University. He joined the Authority in 1989 as Controller and was appointed Director of Resource Management in 1992. In July 2003, he was named General Manager after serving as Acting Deputy General Manager from November 2002. Prior to joining the Authority, Mr. Barr was the Controller of Call Detroit Diesel Allison, Incorporated, a heavy industry vehicle distributorship, for twelve years and Controller of Central Enterprises Limited for one year.

Parrish French is Director of Finance and has been with the Authority for 15 years. Prior to joining the Authority in 2003, Mr. French had 10 years of experience with local and regional public accounting firms. Mr. French also has experience in accounting for banking, manufacturing and healthcare industries. He received a BBA degree from Marshall University and obtained an MBA from Marshall University under the West Virginia Graduate College Program. He received the Certified Public Accountant designation in 1990.

James Meadows is Director of Maintenance and has been with the Authority for 21 years, and was promoted to his current position in November 2012. He has held the following positions: Carpentry Shop Crew Leader, Maintenance Section Three Foreman, Heavy Equipment Foreman, and he was appointed as the Highway Production Manager in September 2007. Prior to working for the Authority, Mr. Meadows was a Maintenance Supervisor at the Southern Regional Jail Authority, self employed as a residential home builder, and he also worked building bridges on the West Virginia Turnpike during the upgrade from a 2-lane road to the current 4-lane interstate.

Tyrone C. Gore is Director of Operations and Training and has been with the Authority for 39 years. Mr. Gore attended West Virginia State College and has served the Authority since 1979, as Toll Collector, Toll Shift Supervisor and as the Quality Control Officer in the Operations Division prior to being promoted to his current position as Director in 2002.

Wayne Webb is the Director of Customer Service and has been with the Authority for 30 years. Mr. Webb joined the Authority in 1988 while attending West Virginia State College. Mr. Webb served as a toll collector and Toll Foremen for 16 years and Toll Plaza Supervisor for 10 years before his appointment as Director of Customer Service in 2016.

Douglas Ratcliff is Director of Toll and has been with the Authority for 32 years. Mr. Ratcliff joined the Authority in January 1986 and served as Toll Collector and Toll Foreman for 20 years before becoming a Plaza Supervisor in 2006. He held the position of Supervisor for 11 years spending time at three separate toll plazas as well as being named Administrative Assistant to the Director of Toll in September 2016. Mr. Ratcliff was appointed as Director of Toll in November 2017.

Margaret Vickers is the Director of Purchasing and has been with the Authority for 7 years. Prior to joining the Authority, Ms. Vickers had a 25-year career with Verizon Communications. She joined the Authority in 2011 and was promoted to the Director of Purchasing in 2015.

Sherry Lilly is the Director of Human Resources and has been with the Authority for 19 years. Ms. Lilly joined the Authority in 1999 where she worked in the Accounting Department. In 2005, she moved into the Human Resources Department and held the positions of Human Resources Administrative Assistant, Payroll Manager and Assistant Director of Human Resources. In 2016, she was promoted to the position of Director of Human Resources. Prior to her employment with the Authority, Ms. Lilly worked at McJunkin Corporation for 10 years in the Accounts Payable Department.

Captain T. L. Bragg is the trooper in charge of Troop 7 of the West Virginia State Police and is responsible for all law enforcement on the Turnpike.

Defeasance or Redemption of Prior Debt Issuances

On July 18, 2018, the Authority used available funds on hand to (i) legally defease the remaining maturities of its $44,200,000 Revenue Refunding Bonds, Series 2002 (the "***Series 2002 Bonds***"), and (ii) redeem the remaining maturities of its $45,800,000 Variable Rate Demand Revenue Refunding Bonds, Series 2008, which were privately placed with Wells Fargo Bank, National Association on July 26, 2011 (the "***Series 2008 Bonds***" and together with the Series 2002 Bonds, the "***Prior Bonds***"). The Authority also terminated an interest rate swap agreement dated February 1, 2002, with Citibank, N.A., New York, New York, as counterparty, as the same has been amended and restated, related to the Series 2008 Bonds. At the time of issuance of the Series 2018 Senior Lien Bonds, and execution and delivery of the Indenture, the Authority will have no obligations outstanding under its prior indentures related to the issuance of its Prior Bonds, nor will the Authority have any other bonded indebtedness secured by the Trust Estate created by the Indenture other than the Series 2018 Senior Lien Bonds.

Annual Budget

Under the Indenture, the Authority has covenanted to adopt an Annual Budget before the start of each Fiscal Year. The Annual Budget must set forth, at a minimum, (a) the estimated Toll Road Revenues, (b) Operation and Maintenance Expenses, (c) the Annual Debt Service (identifying principal and interest components thereof), and (d) the Renewal and Replacement Reserve Fund Requirement, respectively, for such fiscal year, *provided, however*, that, without limitation of the requirements of the Indenture, the Authority's Annual Budget and any amended Annual Budget shall include and provide for amounts that, in the judgment of its Consulting Engineers, are necessary to be included in and spent on (a) Operation and Maintenance Expenses and (b) Renewal and Replacement Costs, respectively, for such fiscal year, which shall be memorialized in a certificate to be provided by the Consulting Engineers to the Authority as part of the Annual Budget-making process and which shall be made part of the Annual Budget.

The Authority covenants in the Indenture that it will include in its Annual Budget sufficient amounts to fulfill the Authority's obligations under the Indenture, including its obligations to pay debt service on the Series 2018 Senior Lien Bonds, to fund the Funds and Accounts in the amounts required by the Indenture and its other agreements, and to operate and maintain the Turnpike in good repair. See "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE."

Financial Policies and Guidelines

<u>*Debt and Capital Planning Management Policy*</u>.

On July 5, 2018, the Authority adopted a debt and capital planning management policy ("***Debt and Capital Planning Management Policy***") to provide guidance governing the issuance, management and reporting of all debt obligations. The Debt and Capital Planning Management Policy establishes parameters and provides guidance governing the issuance and management of the Authority's debt to assure sound financial decisions. The Debt and Capital Planning Management Policy provides that the Authority will borrow only to fund capital requirements, not operation and maintenance costs, and that the final maturity of the bonds issued to finance capital improvements may not exceed the useful lives of such capital improvements. The Debt and Capital Planning Management Policy addresses such topics as the process for debt issuance, including pre-issuance evaluation through the engagement of consultants and financial advisors, the structure of debt, the issuance of variable rate debt, the use of credit enhancements such as insurance or liquidity facilities, refunding criteria and financial covenants limiting future debt issuances, as described below. The Debt and Capital Planning Management Policy also calls for the Authority to engage the services of a third-party dissemination agent to ensure the prompt filing of all financial information and material notice events after the issuance of any debt. See "CONTINUING DISCLOSURE" herein.

The Debt and Capital Planning Management Policy calls for the Authority to target annual debt service coverage ratios of at least 2.0x on its Senior Lien Bonds and 1.1x on all Authority debt (and annual Renewal and

Replacement Reserve Fund deposits). Additionally, under the Debt and Capital Planning Management Policy, the Authority has also agreed to target a minimum of 365 days cash on hand to manage unforeseen operation and maintenance expenses and unplanned capital needs.

A copy of the Authority's Debt and Capital Planning Management Policy is available on the Authority's website at https://transportation.wv.gov/Turnpike/about/investorrelations.

The Debt and Capital Planning Management Policy authorizes the Authority to deviate from such policy due to changing financial goals, alternative financial products, debt structures, market opportunities or other circumstances that will benefit the Authority.

Swap Policy.

The Authority adopted its Interest Rate Exchange Policy on July 10, 2008, which was recently amended on May 10, 2018 ("***Swap Policy***"), which establishes guidelines for the use and management of interest rate swap agreements, exchange agreements and other derivative agreements and instruments, entered into in connection with the issuance of debt. A copy of the Authority's Swap Policy is available on its website at https://transportation.wv.gov/Turnpike/about/investorrelations. Following termination of the swap related to its Prior Bonds, the Authority does not have any swaps outstanding and does not currently anticipate entering into any new swaps.

Other Policies.

On or about August 9, 2018, the Authority also expects to adopt additional financial policies related to post-issuance tax compliance procedures and continuing disclosure procedures to ensure compliance with all applicable laws, rules, regulations and covenants associated with its proposed and any future issuance of debt.

Tripartite Agreement

In 1971, the Turnpike Commission, as predecessor to the Authority, together with the Federal Highway Administration (FHWA) and the West Virginia Department of Highways (the predecessor to the WVDOT), adopted an agreement necessary for the WVDOT to participate in the reconstruction of the Turnpike. The 1971 Agreement was superseded and replaced on December 13, 1988. The 1988 Agreement was amended and modified on June 1, 2018, pursuant to that certain Amended and Restated Agreement between the Division of Highways, the Authority and FHWA (the "***Amended and Restated Tripartite Agreement***"). The Amended and Restated Tripartite Agreement specifies (a) that the Authority and the Division of Highways agree that the tolls collected from the operation of the Turnpike shall be used on the Turnpike for amounts necessary for operation and maintenance, for the payment of debt service, for a reasonable return on investment for any private person or entity authorized by the State to operate and maintain any facility on the Turnpike, and costs necessary for improvement, including reconstruction, resurfacing, restoration and rehabilitation; (b) that excess toll revenues after satisfying all of the foregoing, may be used for any other purpose for which federal funds may be obligated under Title 23 of the United States Code ("***Title 23***"), provided that the Authority and the Division of Highways certify annually that the Turnpike is being adequately maintained and is in compliance with audit requirements under Section 129(a)(3)(B) of Title 23; (c) that the Authority and the Division of Highways agree to comply with the annual audit requirements under Section 129(a)(3)(B) of Title 23 which includes a requirement that an independent auditor conduct an annual audit of the Turnpike records to verify adequate maintenance and compliance with Section 129(a)(1)(3)(A) of Title 23, and to make all Turnpike records available for audit by the FHWA or its Secretary; and (d) that any bonds issued or any costs incurred will not cause tolls to be increased to an unreasonable amount. The Authority has covenanted in the Indenture to comply with the terms and conditions of the Amended and Restated Tripartite Agreement. See "APPENDIX I – AMENDED AND RESTATED TRIPARTITE AGREEMENT" herein.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

General

The WVDOT was created as a department within the Executive Branch of the State by an Act of the State Legislature, effective July 1, 1989. The WVDOT is headed by the Secretary of Transportation, who is appointed by the Governor with the approval of the Senate.

The WVDOT provides essential services in transportation, tourism and economic development in the State, including:

- Safety and protection for citizens through modern operating standards for the State's highways, rail and airport facilities and licensing and permitting of drivers and motor vehicles.
- Transportation services including public transit, railway operation and maintenance, airport and river port development and highway construction and maintenance.
- Community and economic development through accessible roads, rivers, railways and airports and support for the artisan community through Tamarack (as defined under the caption "THE WEST VIRGINIA TURNPIKE – General" below) and other development initiatives.
- Revenue generation through the highway trust fund; air, railway and waterway fuel funds and tolls and concession fees.
- Information and education through driver education, travel information, safety guidance, public involvement in transportation planning and continuing education.

Included within the WVDOT are the Authority, the Division of Highways, the State Rail Authority, the Public Port Authority, the Aeronautics Commission, the Division of Motor Vehicles, the Public Transit Division and the Office of Administrative Hearings.

Division of Highways

The State Legislature created the Department of Highways in 1970 as the successor to the State Road Commission, which was first established in 1933. Effective July 1, 1989, the Department of Highways became the Division of Highways when the WVDOT was established by the State Legislature. The Division of Highways is responsible for planning, engineering, right-of-way acquisition, construction, reconstruction, traffic regulation and maintenance of approximately 39,000 miles of public highways. Of those miles, approximately 35,000 miles are State owned highways, 835 miles are federally owned roads, 555 miles are part of the interstate system and 1,988 miles are non-interstate National Highway System routes (23 miles of which are connectors to other modes of transportation such as airports, trains and buses). The Division of Highways is also responsible for maintaining 6,958 bridges, which are part of the State road system. Additional duties include highway research, outdoor advertising contiguous to State roads, roadside development, safety and weight enforcement and dissemination of highway information.

With roughly 39,000 miles of public highway mileage, the State is one of only four states (Delaware, North Carolina and Virginia are the others) in which there is no county and/or township ownership of highways. As a result, the Division of Highways has statutory authority for the construction, improvement and maintenance of nearly all public highway miles (approximately 36,000 or 92%) in the State, the highest percentage in the nation. Despite the State's relatively small size, the Division of Highways is responsible for the sixth largest state-maintained highway network in the nation.

The Division of Highways is a decentralized organization, with most of its functions performed in ten geographical districts. The districts are each headed by a District Engineer, who each report to the Secretary of Transportation, who also serves as the Commissioner of Highways.

Short-term goals and policies for the Division of Highways reside in the 2016-2021 STIP. The STIP is organized so that all projects that are programmed fall within one of seven core programs. The STIP includes a wide variety of projects including roadway, bridge, bicycle, pedestrian, safety and public transportation (transit) projects. Long-term goals and policies for the Division of Highways currently reside in the Multi-Modal Statewide Transportation Plan for 2010-2034, which discusses in broad terms the long-range goals and objectives. This plan is used to help prioritize larger projects which must compete for scarce resources. It also allows the Division of Highways to monitor and adjust projects to meet the needs of citizens of the State.

Recent and Anticipated Financings for State Transportation Projects

On October 26, 2017, the State, through its Commissioner of Highways, issued its $219,985,000 Surface Transportation Improvements Special Obligation Notes, Series 2017 A, to finance surface transportation projects around the State. On August 1, 2018, the State, through its Commissioner of Highways, issued an additional $78,810,000 Surface Transportation Improvement Improvements Special Obligation Notes, Series 2018A, to finance surface transportation projects around the State. These surface transportation special obligation notes are payable from a pledge of federal surface transportation funds received by the Division of Highways from the Federal Highways Administration that represent reimbursement of the costs incurred in connection with the projects financed by the notes. The State's surface transportation improvement special obligation notes, which may be issued by the State from time to time, are not general obligation bonds and are not backed by the full faith and credit of the State.

Additionally, as part of the State's Roads to Prosperity Program, on June 7, 2018, the Governor, acting on behalf of the State, issued the State's $167,600,000 General Obligation State Road Bonds, Series 2018 A (Negotiated) and $632,400,000 General Obligation State Road Bonds, Series 2018 B (Competitive), to finance certain transportation projects in the State. Approximately $101 million of the proceeds of the State's General Obligation State Road Bonds, Series 2018 A and B, will be used by the Division of Highways to finance the lane widening project at the I-77/I-64 interchange on the Turnpike at Beckley, West Virginia.

It is anticipated that in fiscal year 2019 the State will issue additional general obligation state road bonds pursuant to the Roads to Prosperity Amendment of 2017, in an amount up to $400 million, to finance general highway and secondary roads and bridge construction or improvements throughout the State.

To further help implement the Roads to Prosperity Program, the Authority anticipates that in fiscal year 2020 it will issue another series of its Senior Lien Bonds under the Indenture, expected to be issued in the approximate amount of $222 million, to finance additional parkway projects either on or off the Turnpike, or both. The timing and amount of such issuance remains subject to change based on market conditions, capital construction needs and the performance of traffic and revenue in the coming years.

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THE SERIES 2018 SENIOR LIEN BONDS

The following is a summary of certain provisions of the Series 2018 Senior Lien Bonds. Reference is hereby made to the Indenture in its entirety for the detailed provisions pertaining to the Series 2018 Senior Lien Bonds.

General

The Series 2018 Senior Lien Bonds shall be issued in fully registered form in authorized denominations of $5,000 or any integral multiple thereof. The principal of, purchase price of, if applicable, premium, if any, and interest on the Series 2018 Senior Lien Bonds is payable in currency of the United States of America which at the time of payment is legal tender for the payment of public and private debts. The Series 2018 Senior Lien Bonds will be dated, will mature on the dates and in the principal amounts, and bear interest at the rates, all as set forth on the inside cover page of this Official Statement.

Interest on the Series 2018 Senior Lien Bonds is payable on June 1 and December 1 of each year, commencing December 1, 2018. Interest with respect to the Series 2018 Senior Lien Bonds will be computed on the basis of a year of 360 days and twelve 30-day months. The record date is fifteen days preceding each interest payment date for the Series 2018 Senior Lien Bonds. In the event of a default by the Authority in making timely payment of interest, such defaulted interest will be payable to the person in whose name a Bond is registered at the close of business on a special record date for payment of such defaulted interest established by notice mailed by the Registrar to the registered owner not less than 10 days preceding such special record date.

Redemption

Optional Redemption

The Series 2018 Senior Lien Bonds maturing on or after June 1, 2029, are subject to redemption at the option of the Authority on or after June 1, 2028 in whole or in part on any date, in increments of $5,000, at a price of 100% of the principal amount thereof to be redeemed plus accrued interest to the date of redemption.

Mandatory Sinking Fund Redemption

The Series 2018 Senior Lien Bonds maturing on June 1, 2043 are required to be redeemed prior to maturity, in part, on June 1 in the years and amounts, and at a redemption price of 100% of the principal amount thereof to be redeemed plus interest accrued and unpaid to the redemption date, as follows:

Year (June 1)	Principal Amount
2040	$6,970,000
2041	7,315,000
2042	7,685,000
2043*	8,065,000

* Final Maturity.

The Series 2018 Bonds maturing on June 1, 2047 are required to be redeemed prior to maturity, in part, on June 1 in the years and amounts, and at a redemption price of 100% of the principal amount thereof to be redeemed plus interest accrued and unpaid to the redemption date, as follows:

Year (June 1)	Principal Amount
2044	$8,470,000
2045	8,810,000
2046	9,160,000
2047*	9,530,000

* Final Maturity.

At its option, to be exercised on or before the fortieth (40^{th}) day next preceding each mandatory sinking fund redemption date, the Authority may (i) cause to be paid to the Trustee for deposit in the Series 2018 Senior Lien Bonds Redemption Account such amount, or direct the Trustee to use moneys in the Series 2018 Senior Lien Bonds Redemption Account in such amount, as the Authority may determine, accompanied by a certificate signed by the Authority Authorized Officer directing the Trustee to apply such amount to the purchase of the applicable Series 2018 Senior Lien Bonds and the Trustee shall use all reasonable efforts to expend such funds as nearly as may be practicable in the purchase of such Series 2018 Senior Lien Bonds, at a price not exceeding the principal amount thereof plus accrued interest to such sinking fund redemption date; or (ii) receive a credit against its sinking fund redemption obligation for the applicable Series 2018 Senior Lien Bonds maturing on Bond Payment Dates in the same years which prior to such date have been purchased by the Authority and presented to the Trustee for cancellation or redeemed (otherwise than through the operation of the sinking fund) and cancelled by the Trustee and, in either case, not theretofore applied as a credit against any sinking fund redemption obligation. Each Series 2018 Senior Lien Bond so purchased, delivered or previously redeemed shall be credited by the Trustee at 100% of the principal amount thereof against the obligation of the Authority on such sinking fund redemption date to redeem Series 2018 Senior Lien Bonds of the same maturity. Any excess over such obligation shall be credited against applicable future sinking fund redemption obligations, or deposits with respect thereto, in such order of maturity as shall be determined by the Authority, and the principal amount of such Series 2018 Senior Lien Bonds of the same maturity to be redeemed by operation of the sinking fund shall be accordingly reduced. Any funds received by the Trustee from the Authority to be deposited in the Series 2018 Senior Lien Bonds Redemption Fund that is not expended by the Trustee for the purchase of Series 2018 Senior Lien Bonds on or before said fortieth (40^{th}) day shall be retained by the Trustee in the Series 2018 Senior Lien Bonds Redemption Account and be used only for the purchase of Series 2018 Senior Lien Bonds as a credit against future sinking fund obligations, or deposits with respect thereto, to be applied to such Series 2018 Senior Lien Bonds maturing on Bond Payment Dates in the same years and in such order of maturity as determined by the Authority.

Selection of the Series 2018 Senior Lien Bonds to be Redeemed

In connection with any optional redemption of the Series 2018 Senior Lien Bonds, the Authority shall select the maturities of serial bonds, and portions of the amortization of term bonds, that shall be redeemed and shall designate such selections in an officer's certificate delivered to the Trustee. In the case of any partial redemption of a serial maturity of the Series 2018 Senior Lien Bonds, the particular Series 2018 Senior Lien Bonds of such maturity to be redeemed shall be selected by DTC in accordance with its procedures or, if the book-entry system has been discontinued, by the Trustee by lot in such manner as the Trustee shall determine. Each increment of $5,000 of principal amount of Series 2018 Senior Lien Bonds shall be counted as one Series 2018 Senior Lien Bond, for purposes of selecting Series 2018 Senior Lien Bonds for a partial redemption. If a Series 2018 Senior Lien Bond shall be called for partial redemption, upon its surrender a new Series 2018 Senior Lien Bond, representing the unredeemed balance of the principal amount of the Series 2018 Senior Lien Bond, shall be issued to its Holder.

Notice of Redemption

When the Trustee receives notice from the Authority of its election to redeem Series 2018 Senior Lien Bonds, the Trustee will give notice of the redemption not less than 20 nor more than 60 days prior to the date set for redemption by first-class mail (i) to the Holder of each such Series 2018 Senior Lien Bond to be redeemed in whole or in part at his address as it appears on the Register, or while the Series 2018 Senior Lien Bonds are held in book-entry form, to the Securities Depository, (ii) to all organizations registered with the Securities and Exchange Commission as securities depositories, and (iii) to the Municipal Securities Rulemaking Board. During such period, the Trustee shall not be responsible for mailing notices of redemption to anyone other than such Securities Depository or its nominee. The failure to give notice as described herein, or any defect in any notice, shall not affect the validity of any proceedings for the redemption of any Series 2018 Senior Lien Bonds for which notice has been given correctly. If at the time of mailing of notice of any optional redemption of the Series 2018 Senior Lien Bonds, there shall not have been deposited with the Trustee moneys sufficient to redeem all of the Series 2018 Senior Lien Bonds called for redemption, the notice may state that it is conditional in that it is subject to the deposit of sufficient moneys by not later than the redemption date, and if the deposit is not timely made the notice shall be of no effect.

Partial Redemption

Upon the selection and call for redemption of, and the surrender of, any Series 2018 Senior Lien Bond for redemption in part only, the Authority shall cause to be executed and the Authenticating Agent shall authenticate and deliver to or upon the written order of the Holder thereof, at the expense of the Authority, one or more new Series 2018 Senior Lien Bonds of authorized denominations and like tenor of the same maturity and interest rate, in an aggregate face amount equal to the unredeemed portion of the Series 2018 Senior Lien Bonds surrendered.

Purchase or Cancellation in Lieu of Redemption

On or before the forty-fifth (45^{th}) day next preceding any applicable sinking fund redemption date, the Authority has the option to: (i) cause to be paid to the Trustee for deposit in the Series 2018 Senior Lien Bonds Redemption Account such amount, or direct the Trustee to use moneys in the Series 2018 Senior Lien Bonds Redemption Account in such amount, as the Authority may determine, accompanied by a certificate signed by an Authority Authorized Officer directing the Trustee to apply such amount to the purchase of the applicable Series of Bonds, and the Trustee shall use all reasonable efforts to expend such funds as nearly as may be practicable in the purchase of such Series 2018 Senior Lien Bonds, at a price not exceeding the principal amount thereof plus accrued interest to such sinking fund redemption date; or (ii) receive a credit against the sinking fund redemption obligation for the Series 2018 Senior Lien Bonds to the extent such Series 2018 Senior Lien Bonds have been purchased by the Authority and presented to the Trustee for cancellation or redeemed (other than pursuant to the above-mentioned sinking fund requirements) and cancelled by the Trustee.

Each Series 2018 Senior Lien Bond so purchased, delivered or previously redeemed shall be credited by the Trustee at 100% of the principal amount thereof against the obligation of the Authority on the applicable sinking fund redemption date. Any excess over such obligation shall be credited as directed by the Authority against applicable future sinking fund redemption obligations, or deposits with respect thereto, and the principal amount of such Series of Bonds to be redeemed by operation of the sinking fund shall be accordingly reduced. Any funds received by the Trustee for redemption of the Series 2018 Senior Lien Bonds, but not expended by the Trustee for the purchase of Series 2018 Senior Lien Bonds on or before said forty-fifth (45^{th}) day shall be retained in the Series 2018 Senior Lien Bonds Redemption Account and shall thereafter be used only for the purchase of Series 2018 Senior Lien Bonds, as a credit as directed by the Authority, against future sinking fund obligations, or deposits with respect thereto as directed by the Authority.

Book-Entry Only System

The Series 2018 Senior Lien Bonds will be issued as fully-registered bonds in the name of Cede & Co., as nominee of DTC. DTC will act as securities depository for the Series 2018 Senior Lien Bonds. One fully-registered Series 2018 Senior Lien Bond will be issued for each maturity, and will be deposited with the DTC.

Purchases of the Series 2018 Senior Lien Bonds will be made only in book-entry form through DTC Participants in the principal amount of $5,000 and integral multiples thereof and no physical delivery of the Series 2018 Senior Lien Bonds will be made to purchasers. Unless otherwise provided herein, payments of the principal, interest and premium, if any, will be made to purchasers by DTC through its Participants.

Except as otherwise provided herein or in APPENDIX G − "BOOK-ENTRY ONLY SYSTEM," each actual purchaser of each Series 2018 Senior Lien Bond ("***Beneficial Owner***") will not be or be considered to be and will not have any rights as, owners or holders of the Series 2018 Senior Lien Bonds under the Indenture. For additional information about DTC and the book-entry-only system, see APPENDIX G − "BOOK-ENTRY ONLY SYSTEM."

SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2018 SENIOR LIEN BONDS

The following is a summary of certain provisions of the Indenture relating to the security and sources of payment for the Series 2018 Senior Lien Bonds. Reference is made to the Indenture in its entirety for the detailed provisions pertaining to the Series 2018 Senior Lien Bonds.

Pledge of Trust Estate

General

The Series 2018 Senior Lien Bonds are obligations of the Authority payable solely from, and secured solely by a first lien on and pledge of the Trust Estate, consisting of (i) the Net Toll Road Revenues (as defined herein), (ii) amounts on deposit in certain Funds and Accounts created pursuant to and pledged by the Indenture, and (iii) any and all other property of any kind from time to time by delivery or by writing of any kind specifically conveyed, pledged, assigned or transferred, as and for additional security under the Indenture for the Series 2018 Senior Lien Bonds, by the Authority or by anyone on its behalf or its written consent in favor of the Trustee.

Revenues

The principal component of the Trust Estate consists of the Net Toll Road Revenues (the "***Net Toll Road Revenues***"), which are defined in the Indenture as the Toll Road Revenues less Operation and Maintenance Expenses.

"***Toll Road Revenues***" means the sum of (a) Tolls, (b) any interest income on, and any profit realized from, the investment of moneys in any Fund or Account, excluding, however, any interest income on, and any profit realized from, the investment of moneys in the Arbitrage Rebate Fund, (c) all proceeds of insurance payable to or received by the Authority with respect to the Turnpike (whether by way of claims, return of premiums, ex gratia settlements or otherwise), including proceeds from business interruption insurance and loss of advance profits insurance, except for proceeds of fire and other casualty insurance, (d) the proceeds of any condemnation awards with respect to the Turnpike and (e) all other amounts derived from or with respect to the operation of the Turnpike, plus (f) any additional revenues added to the Turnpike as provided in Section 216 of the Indenture, *but excluding, however*, any concession revenues, and other revenues derived from the operation or use of service plazas and tourist and information centers, including without limitation Tamarack (as defined in "THE WEST VIRGINIA TURNPIKE - General" herein), the proceeds of any sale of land, buildings or equipment; and any other amounts which are not deemed to be revenues in accordance with generally accepted accounting principles or which are restricted as to their use. Unless otherwise provided in a Supplemental

Indenture, there also shall be excluded from the term "Toll Road Revenues" any Hedge Termination Payments received by the Authority. To the extent that the Authority shall adopt a resolution and enter into a Supplemental Indenture that identifies a new source of revenues and pledges such new source of revenues for the repayment of, and as security for, Senior Lien Bonds issued under and secured by the Indenture, including the Series 2018 Senior Lien Bonds, then such revenues shall also be included in "Toll Road Revenues".

For purposes of the Trust Estate, "***Tolls***" within the definition of Toll Road Revenues mean all tolls, fares, incomes, receipts, and charges and all returns or moneys of an income nature derived by or for the benefit of the Authority from motor vehicle travelers of any part of the Turnpike, including without limitation any moneys received in consideration of issuing EZ-Pass® transponders to travelers who establish an EZ-Pass® account with the Authority, but *excluding, however*, any concession revenues, and other revenues derived from the operation or use of service plazas and tourist and information centers, including without limitation Tamarack.

Operation and Maintenance Expenses

Operation and Maintenance Expenses are deducted from Toll Road Revenues to determine Net Toll Road Revenues. Under the Indenture, "***Operation and Maintenance Expenses***" means expenses for operation, maintenance, repairs, ordinary acquisition of equipment, and any other current expenses or obligations required to be paid by the Authority under or pursuant to the provisions of the Indenture, or by law, all to the extent properly and directly attributable to the operation of the Turnpike, but not any costs or expenses for new construction or any allowance for depreciation. Operation and Maintenance Expenses may include, without limitation (but subject to the preceding sentence, including but not limited to the condition that such expenses are properly and directly attributable to the operation of the Turnpike): (a) salaries, supplies, equipment, utilities, labor, travel and rent; (b) fees and expenses for data processing, policing, insurance, legal, accounting, engineering, consulting and banking services; and (c) payments to pension, retirement, health and hospitalization funds for Authority employees. Without limitation of the foregoing, Operation and Maintenance Expenses shall include costs of toll collection and enforcement, including without limitation the costs of purchasing transponders for use in the toll collection system for the Turnpike and the costs of issuing transponders to customers of the Turnpike.

Toll Rate Covenant

The Authority has covenanted in the Indenture that it will establish, charge, and collect Tolls for the privilege of traveling on the Turnpike at rates sufficient to meet its Operation and Maintenance Expenses and produce Net Toll Road Revenues in each Fiscal Year and in each Fiscal Year thereafter that are at least equal to (i) 125% of the Annual Debt Service with respect to the Series 2018 Senior Lien Bonds and all other Outstanding Senior Lien Bonds issued under the Indenture, if any, for such Fiscal Year and (ii) 100% of the sum of (A) Annual Debt Service with respect to all Outstanding Bonds, (B) the amounts, if any, necessary to restore the amount on deposit in any Debt Service Reserve Fund to the applicable Series, aggregate or composite Debt Service Reserve Requirement in accordance with the Indenture, and (C) the Renewal and Replacement Reserve Fund Requirement. The Authority has also covenanted in the Indenture that it shall not reduce tolls unless and until the Toll Road Consultant certifies that the Toll Rate Covenant will be achieved, after the application of such reduction, in the current Fiscal Year and all future Fiscal Years in which Bonds are then Outstanding. See "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE."

Good Repair Covenant

The Authority has covenanted in the Indenture that it will at all times operate the Turnpike, or cause the Turnpike to be operated, in an efficient manner and at reasonable cost; will maintain, preserve and keep, or cause to be maintained, preserved and kept, the properties of the Turnpike and all additions and betterments thereto and thereof, and every part and parcel thereof, in good repair, working order and condition, and to that end will from time to time make, or cause to be made, all necessary and proper repairs, renewals, replacements, additions, extensions and betterments thereto. See "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE."

Senior Lien Debt Service Reserve Fund

The Series 2018 Senior Lien Bonds are further secured by the Series 2018 Senior Lien Debt Service Reserve Account, a subaccount of the Senior Lien Debt Service Reserve Fund, created under the Indenture and held by the Trustee. The Indenture requires the Authority to fund the Series 2018 Senior Lien Debt Service Reserve Account with cash and investments or with a DSRF Credit Facility (as defined herein) meeting the Indenture requirements. A DSRF Credit Facility means a letter of credit, surety bond or similar credit enhancement facility acquired by the Authority from, or reimbursement agreement entered into by the Authority with, a financial institution (including, without limitation, any bank, trust company, insurance company, or broker-dealer) with a long-term credit rating at the time of issuance of such facility in the third highest rating category or higher by any Rating Agency, to substitute for cash or investments required to be held in a Debt Service Reserve Fund for any Series of Bonds pursuant to the Supplemental Indenture relating to and governing the issuance of such Series of Bonds.

There is required to be on deposit in the Series 2018 Senior Lien Debt Service Reserve Account an amount equal to the Series 2018 Senior Lien Debt Service Reserve Requirement, which under the First Supplemental Indenture, is equal to the lesser of (i) 10% of the stated principal amount of the Series 2018 Senior Lien Bonds (plus or minus original issue premium or discount, if more than 2% of the stated principal amount), (ii) the maximum annual debt service on the Series 2018 Senior Lien Bonds or (iii) 125% of the average annual debt service on the Series 2018 Senior Lien Bonds. See "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE" herein.

The Series 2018 Senior Lien Debt Service Reserve Requirement is equal to maximum annual debt service on the Series 2018 Senior Lien Bonds. Upon the issuance of the Series 2018 Senior Lien Bonds, the Series 2018 Senior Lien Debt Service Requirement will be $10,283,375, which will be deposited into the Series 2018 Senior Lien Debt Service Reserve Fund from proceeds of the Series 2018 Senior Lien Bonds. See "SOURCES AND USES OF FUNDS" herein.

The Indenture establishes the Senior Lien Debt Service Reserve Fund and provides that a subaccount within the Senior Lien Debt Service Reserve Fund, such as the Series 2018 Senior Lien Debt Service Reserve Account, may be created with respect to each series of Senior Lien Bonds issued under the Indenture, or that a composite account within the Senior Lien Debt Service Fund may be created for two or more series of Senior Lien Bonds, including the Series 2018 Senior Lien Bonds and any additional Senior Lien Bonds. To the extent subaccounts or a composite account are created in the Senior Lien Debt Service Reserve Fund for additional Senior Lien Bonds issued under the Indenture, the aggregate funds held in the Senior Lien Debt Service Reserve Fund shall be made available to make payments required under the Indenture for the benefit of all Senior Lien Bonds. See "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE" herein.

Operation and Maintenance Reserve Account Requirement

The Authority has covenanted in the Indenture to maintain in its Operation and Maintenance Reserve Account an amount equal to one-sixth of the amount recommended by its Consulting Engineers as the Operation and Maintenance Expenses, as defined herein, for its current Fiscal Year as included in the Authority's Annual Budget. See "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE" herein.

Renewal and Replacement Reserve Fund Requirement

The Authority has covenanted to fund its Renewal and Replacement Reserve Fund over the course of each Fiscal Year in an amount equal to the amount recommended by its Consulting Engineers as the Renewal and Replacement Costs for its current Fiscal Year as included in the Authority's Annual Budget. Renewal and Replacement Costs include all costs and expenses that, in the judgment of the Authority's Consulting Engineers, are necessary and appropriate to be expended by the Authority in the upcoming Fiscal Year that are not incurred on any annual or seasonal basis and are necessary in keeping the Turnpike open to public travel or use, excluding, however, Operation and Maintenance Expenses, as defined herein. The Authority has also covenanted in the Indenture to include estimates of its Renewal and Replacement Reserve Fund Requirement in its five-year capital program for the Turnpike that is required as a part of its Annual Budget. See "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE" herein.

Additional Bonds

Provided that there is no Event of Default which has occurred and is continuing under the Indenture, the Authority may issue one or more Series of additional Bonds for purposes of paying costs of parkway projects, refunding all or a portion of a Series of Bonds, paying costs of issuance, or for any combination of such purposes. Each Series of additional Bonds shall be issued pursuant to a Supplemental Indenture.

The Indenture authorizes the Authority to issue additional Bonds that are either Senior Lien Bonds or Subordinate Lien Bonds. If such Series of additional Bonds are Senior Lien Bonds, they will be equally and ratably secured under the Indenture with all other Senior Lien Bonds, including the Series 2018 Senior Lien Bonds, without preference, priority or distinction of any Senior Lien Bonds over any other Senior Lien Bonds. If such Series of additional Bonds are Subordinate Lien Bonds, they will be equally and ratably secured under the Indenture with all other Subordinate Lien Bonds, without preference, priority or distinction of any Subordinate Lien Bonds over any other Subordinate Lien Bonds. Any Subordinate Lien Bonds issued by the Authority shall be junior and subordinate in right of payment to the Senior Lien Bonds, including the Series 2018 Senior Lien Bonds.

The issuance of additional Bonds is subject to satisfaction of certain conditions and tests described below.

The Trustee shall authenticate and deliver such additional Bonds, but only upon receipt by the Trustee of, among other things, a certificate of the Authority, dated as of the date of delivery of such additional Bonds, stating that, as of the date of such certificate, no event or condition has happened or existed, or is happening or existing, that continues, or that, with notice or lapse of time or both, would constitute, an Event of Default by the Authority under the Indenture, and (ii) a certificate of the Authority, dated as of the date of delivery of such additional Bonds, stating that, with respect to all then Outstanding Bonds, all applicable Toll Rate Covenants were met in the prior Annual Period and the Authority is current in all deposits into the various Funds and Accounts and in all payments theretofore required to have been deposited or made by it under the provisions of the Indenture as to all Senior Lien Bonds.

Senior Lien Bonds – New Money

Before the Authority may issue additional Senior Lien Bonds to finance parkway projects, it must also deliver to the Trustee either:

(i) a certificate of an Authority Authorized Officer certifying that the Net Toll Road Revenues (adjusted to reflect any authorized and to be implemented within six months adjustment in tolls, fees and charges, as if such adjustment had been in effect since the beginning of the period described herein) for (a) the most recent Annual Period for which audited statements are available or (b) a 12-consecutive-month period in the immediately prior 18 months were at least 125% of the Maximum Annual Debt Service for all then Outstanding

Senior Lien Bonds (excluding any Senior Lien Bonds being refunded) and the additional Senior Lien Bonds proposed to be issued; or

(ii) a certificate of the Authority stating that, based upon the report of its Consulting Engineers and Traffic and Revenue Consultant, the projected Net Toll Road Revenues (adjusted to reflect any authorized adjustment in tolls, fees and charges, provided that such adjustment is to be implemented within six months as if such adjustment had been in effect since the beginning of the period described herein) for the current and each of the Annual Periods through the fifth Annual Period following the issuance of the additional Senior Lien Bonds are at least 135% of Annual Debt Service for each such year and projected Net Toll Road Revenues in the fifth such year equaled or exceeded 135% of the Maximum Annual Debt Service for all then Outstanding Senior Lien Bonds (excluding any Senior Lien Bonds being refunded) and the additional Senior Lien Bonds proposed to be issued.

Subordinate Lien Bonds

If additional Bonds to be issued by the Authority are Subordinate Lien Bonds, then the Trustee shall authenticate and deliver such additional Bonds, upon compliance with the applicable requirements of the Master Trust Indenture and upon such further terms and subject to such further conditions as are provided in a Supplemental Indenture authorizing such Subordinate Lien Bonds.

Refunding Bonds

If additional Bonds are being issued by the Authority to refund all or a portion of any Series of Bonds, the Authority must deliver to the Trustee a certificate certifying that either (i) the Maximum Annual Debt Service for all then Outstanding Senior and Subordinate Lien Bonds, after giving effect to such refunding, would not be more than the Maximum Annual Debt Service for all then Outstanding Senior and Subordinate Lien Bonds immediately prior to the issuance of such additional Bonds, (ii) as a result of the proposed refunding, savings in the aggregate Annual Debt Service savings for all then Outstanding Senior and Subordinate Lien Bonds will be achieved in each Annual Period, or (iii) if the additional Bonds are Senior Lien Bonds that are refunding Senior Lien Bonds, then, as an alternative to (i) or (ii) above, a certificate demonstrating compliance with either of the two coverage tests set forth in subsection 213(c)(i) of the Indenture for Senior Lien Bonds being issued to finance parkway projects (as described above under subsection (i) under the subheading "Senior Lien Bonds – New Money").

Flow of Funds

The Indenture requires that the Authority deposit all Toll Road Revenues, as received, into the Revenue Fund created by the Indenture. The Revenue Fund will be maintained by the Authority as a separate account with an Authorized Depositary. Amounts held in the Revenue Fund will be transferred by the Authority by no later than the fifth day of each month to the Trustee to make deposits to the other funds or accounts as depicted in the diagram on the following page. A more detailed description of the funds and accounts created by the Indenture, and shown on the diagram on the following page, is set forth on the immediately following pages.

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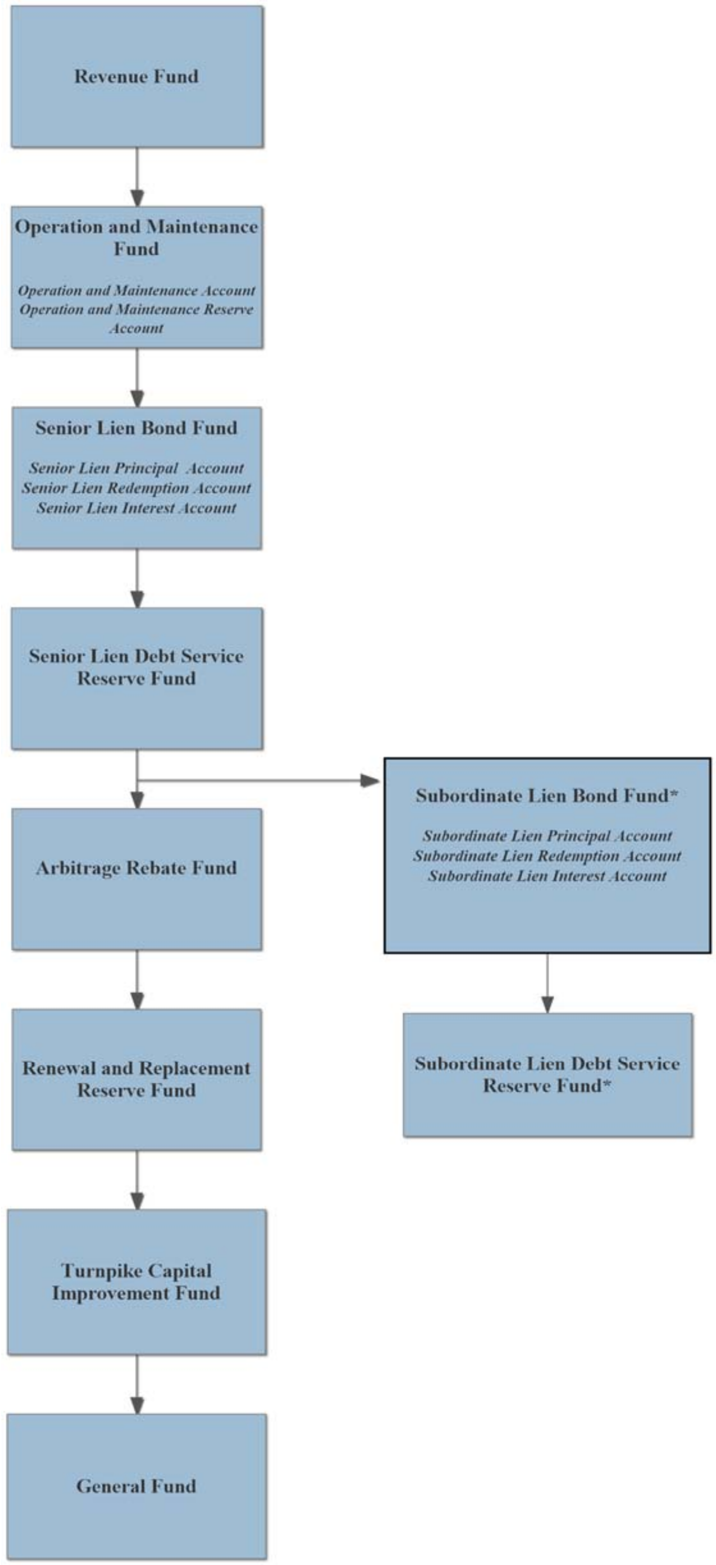
Trust Indenture Flow of Funds



* Currently, there are no Subordinate Lien Bonds issued under the Indenture.

The Indenture pledges as security for the Series 2018 Senior Lien Bonds all monies held in certain Funds and Accounts created under the Indenture, except for amounts held by the Trustee in the Arbitrage Rebate Fund, and amounts in the Operation and Maintenance Account within the Operation and Maintenance Fund and the General Fund, the last two of which are accounts that will be separately maintained by the Authority with an Authorized Depositary. As depicted on the flow of funds set forth on the previous page, the Operation and Maintenance Fund also includes the Operation and Maintenance Reserve Account, into which the Authority must transfer funds each month in the amount, if any, necessary to maintain a balance therein equal to its Operation and Maintenance Reserve Account Requirement. Monies held in this account of the Operation and Maintenance Fund are pledged to the holders of the Series 2018 Senior Lien Bonds as part of the Trust Estate under the Indenture.

Under the Indenture, the Authority has agreed to enter into an account control agreement or similar agreement with the Trustee to perfect the pledge of and security interest of the Trustee in the Revenue Fund and the Operation and Maintenance Reserve Account, both of which are accounts that are pledged as security to the holders of the Series 2018 Senior Lien Bonds, but are not accounts that will be held by the Trustee. See "EXHIBIT A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE" herein.

The Funds and Accounts created by the Indenture are as follows:

Revenue Fund

Under the Indenture, the Authority shall deposit all Toll Road Revenues upon receipt into the Revenue Fund created under the Indenture and maintained by the Authority with an Authorized Depositary.

Operation and Maintenance Fund

The Indenture requires the establishment of an Operation and Maintenance Fund to be held by the Authority with an Authorized Depositary, to be used to pay the Authority's Operation and Maintenance Expenses. This Fund contains two accounts:

(i) the Operation and Maintenance Account to be used by the Authority solely to pay Operation and Maintenance Expenses; and

(ii) the Operation and Maintenance Reserve Account to be used by the Authority to pay Operation and Maintenance Expenses in the event the amounts on deposit in the Operation and Maintenance Account are insufficient to pay the Authority's Operation and Maintenance Expenses when due.

The Indenture requires the Authority to deposit an amount each month into the Operation and Maintenance Account equal to $1/12^{th}$ of the Operation and Maintenance Expenses for the Turnpike set forth in the Authority's current fiscal year budget, provided that the payment due for the last month of each fiscal year shall equal the difference between budgeted and actual expenses so that the total deposits to the Operation and Maintenance Account shall equal the actual expenses for the fiscal year. Monthly payments shall be increased or decreased, as necessary, to reflect any amendments to the Authority's Annual Budget.

The Indenture also requires the Authority to deposit an amount each month into the Operation and Maintenance Reserve Account equal to $1/6^{th}$ of the Operation and Maintenance Expenses for the Turnpike set forth in the Authority's current fiscal year budget.

Senior Lien Bond Fund

The Indenture provides that there must be transferred by the Authority to the Trustee from the Revenue Fund into the applicable Principal Account of the Senior Lien Bond Account, a subaccount under the Senior

Lien Bond Fund, an amount each month equal to 1/12th of the principal installment due on the next succeeding Bond Payment Date that is a principal payment date with respect to the Senior Lien Bonds or such lesser amount that, in each case, together with amounts already on deposit in the applicable Principal Account, will be sufficient to pay principal on the Senior Lien Bonds coming due on the next succeeding Bond Payment Date that is a principal payment date; *provided, however,* that if the first installment of principal on a Series of Bonds will be due on a date that is either less than or greater than twelve months from the date of issuance of such Series of Bonds, then the fractional amount to be deposited in the Principal Account in respect of such Series of Bonds shall be adjusted to a larger (or smaller) fraction, proportionally, based on the actual time less than (or greater than) twelve months that actually will elapse until the Bond Payment Date on which such first installment of principal will come due.

The Indenture also requires that there must be transferred by the Authority to the Trustee from the Revenue Fund into the applicable Redemption Account of the Senior Lien Bond Account, a subaccount under the Senior Lien Bond Fund, an amount each month equal to 1/12th of any sinking fund installment due on the next succeeding Bond Payment Date with respect to the Senior Lien Bonds or such lesser amount that, in each case, together with amounts already on deposit in the applicable Redemption Account, will be sufficient to pay any sinking fund installment on all Senior Lien Bonds coming due on the next succeeding Bond Payment Date; *provided, however*, that if the first sinking fund installment on a Series of Bonds will be due on a date that is either less than or greater than twelve months from the date of issuance of such Series of Bonds, then the fractional amount to be deposited in the Redemption Account in respect of such Series of Bonds shall be adjusted to a larger (or smaller) fraction, proportionally, based on the actual time less than (or greater than) twelve months that actually will elapse until the Bond Payment Date on which such first sinking fund installment will come due.

The Indenture provides that there must be transferred by the Authority to the Trustee from the Revenue Fund into the applicable Interest Account of the Senior Lien Bond Account, a subaccount under the Senior Lien Bond Fund, an amount each month equal to 1/6th of the interest installment due with respect to all Senior Lien Bonds on the next succeeding Bond Payment Date; *provided, however*, that if the first installment of interest coming due on a Series of Bonds will be due a Bond Payment Date that is either less than or greater than six months from the date of issuance of such Series of Bonds, then the fractional amount to be deposited in the Interest Account in respect of such Series of Bonds shall be adjusted to a larger (or smaller) fraction, proportionally, based on the actual time less than (or greater than) six months that actually will elapse until the Bond Payment Date on which such first installment of interest will come due.

Senior Lien Debt Service Reserve Fund

The Indenture requires the establishment of a Senior Lien Debt Service Reserve Account, a subaccount of the Senior Lien Debt Service Reserve Fund, into which the Trustee is to transfer each month to the applicable Account in the Senior Lien Debt Service Reserve Fund with respect to each Series of Senior Lien Bonds the amounts, if any, of the aggregate 1/12th monthly replenishment installments required by the Indenture for such Series (following withdrawal by the Trustee of funds from such applicable Account) or the aggregate 1/36th monthly replenishment installments required by the Indenture for such Series (when applicable, following termination of a Debt Service Reserve Fund Credit Facility ("***DSRF Credit Facility***") that had been provided for such applicable Account), that are necessary to restore the amount on deposit therein to the related Series or, as applicable, aggregate or composite Debt Service Reserve Requirement in accordance with the applicable Supplemental Indenture; *provided, however,* that if under the Indenture as then in effect there is an aggregate or composite Debt Service Reserve Fund for Bonds issued under the Indenture and then Outstanding, then there shall be deposited each month, to such aggregate or composite Debt Service Reserve Fund the amounts, if any, of the aggregate 1/12th monthly replenishment installments required by the Indenture for all such Outstanding Bonds (following withdrawal by the Trustee of funds from such applicable Fund and Accounts) or the aggregate 1/36th monthly replenishment installments required by Indenture for all such Outstanding Bonds (when applicable, following termination of a DSRF Credit Facility that had been provided for such applicable Fund and Accounts), that are necessary to restore the amount on deposit therein to the applicable Series, aggregate or composite Debt Service Reserve Requirement in accordance with the Indenture.

Arbitrage Rebate Fund

Under the Indenture, the Arbitrage Rebate Fund shall be maintained by the Trustee as a fund separate from any other fund established and maintained under the Indenture. Within the Arbitrage Rebate Fund, the Trustee shall maintain such accounts as shall be required by the Authority in order to comply with the terms and requirements of the tax compliance certificate executed and delivered in connection with any Bonds issued under the Indenture (the "***Tax Certificate***"). All money at any time deposited in the Arbitrage Rebate Fund shall be held by the Trustee in trust, to the extent required to satisfy the Rebate Requirement (as defined in the Tax Certificate), for payment to the Treasury Department of the United States of America.

Renewal and Replacement Reserve Fund

Under the Indenture, the Authority is required to establish a Renewal and Replacement Reserve Fund to be held by the Authority, and used exclusively for funding Renewal and Replacement Costs, as certified for a fiscal year, by the Authority's Consulting Engineers, in accordance with its Annual Budget. Transfers from the Revenue Fund into this fund are to be made each month in the amount equal to a minimum of $1/12^{th}$ of the amount of the Renewal and Replacement Reserve Fund Requirement set forth in the Authority's Annual Budget; *provided, however*, that the Indenture shall not be construed as preventing the Authority in its sole discretion from depositing amounts in excess of such minimum deposit in any month, or from crediting against such minimum monthly deposit some or all of any cumulative excess deposits made to such fund during the current Fiscal Year.

"***Renewal and Replacement Costs***" are defined in the Indenture as all costs and expenses that, in the judgment of the Authority's Consulting Engineers, are necessary or appropriate to be expended by the Authority in an Annual Period that are not incurred on any annual or seasonal basis and are necessary in keeping the Turnpike open to public travel or use, but shall not include any cost which, in the judgment of the Consulting Engineers is to be treated as Operation and Maintenance Expenses in the current Annual Period and, in reliance on such judgment, have been included in the Authority's Annual Budget for such Annual Period. The judgment of the Consulting Engineers as to the costs and expenses that are to be included in (a) "Renewal and Replacement Costs" and (b) "Operation and Maintenance Expenses", respectively, shall be memorialized in a certificate to be provided by the Consulting Engineers to the Authority as part of the annual budget-making process as required by the Indenture.

Turnpike Capital Improvement Fund

Under the Indenture, the Authority is required to maintain its Turnpike Capital Improvement Fund in a separate account with an Authorized Depositary. Amounts in the Turnpike Capital Improvement Fund may, from time to time, be disbursed or transferred by the Authority for the purposes of providing funds to pay certain Capital Costs on the Turnpike that are not included in the Renewal and Replacement Costs budgeted by the Authority in its then current Annual Budget. Amounts to be deposited in the Turnpike Capital Improvement Fund shall be the aggregate of the amounts specified at the discretion of the Authority from time to time in resolutions of the Authority as the total estimated amounts that will need to be deposited therein to fund Capital Costs on the Turnpike that are not included in the Renewal and Replacement Costs budgeted by the Authority in its then current Annual Budget. Such amounts, once specified, at the discretion of the Authority, shall be reflected in the Authority's five-year capital improvement program for the Turnpike, as provided in the Indenture. Upon the determination of the Authority in its sole discretion that funds in the Turnpike Capital Improvement Fund are not needed for such Capital Costs, and after satisfying any deficiencies in any Debt Service Fund, any Debt Service Reserve Fund, and Renewal and Replacement Fund, respectively, created under the Indenture, the Authority may transfer such amounts to the General Fund or any other Fund or Account created under the Indenture.

"***Capital Costs***" are costs that are capitalized under the Authority's internal policies and procedures governing capital expenditures and are incurred for or in connection with the (a) acquisition or construction of assets of the Authority having an anticipated useful life of greater than one year, or (b) improvements that extend the anticipated useful life of assets by more than one year.

General Fund

The Authority shall maintain its General Fund in a segregated account with an Authorized Depositary. Under the Indenture, after first having made the required deposits described on the immediately preceding pages, and while any Bonds are Outstanding, the Authority shall transfer monthly from the Revenue Fund to the credit of the General Fund any funds remaining in the Revenue Fund. Moneys in the General Fund may be expended by the Authority to restore deficiencies in any funds or accounts created under this Indenture, and absent any such deficiency, for any of the following purposes, with no one item having priority over any of the others:

(i) to purchase or redeem Bonds;

(ii) to secure and pay the principal or redemption price of and interest on, any Senior Lien Bonds;

(iii) to secure and pay the principal or redemption price of and interest on, any Subordinate Lien Bonds;

(iv) to make payments into the Parkway Projects Fund or any other Fund or Account created under the Indenture;

(v) to fund improvements, extensions and replacements of the Turnpike; or

(vi) to further any corporate purpose of the Authority that involves expenditures on assets, operations and/or employees of the Authority and is in furtherance of the acquisition, operation, maintenance, improvement, enhancement and/or preservation of assets, operations and/or employees of the Authority.

Additional information regarding the Funds and Accounts created under the Indenture and the flow of funds under the Indenture is set forth in "APPENDIX A – FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE" herein.

Limited Obligations

THE SERIES 2018 SENIOR LIEN BONDS ARE OBLIGATIONS OF THE AUTHORITY PAYABLE SOLELY FROM THE TRUST ESTATE. THE SERIES 2018 SENIOR LIEN BONDS SHALL NOT BE DEEMED TO BE A DEBT OR LIABILITY OF THE STATE OR ANY POLITICAL SUBDIVISION THEREOF OR A PLEDGE OF THE FAITH, CREDIT OR TAXING POWER OF THE STATE OR OF ANY SUCH SUBDIVISION, AND ARE PAYABLE SOLELY FROM THE TRUST ESTATE. THE AUTHORITY HAS NO TAXING POWER.

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THE WEST VIRGINIA TURNPIKE

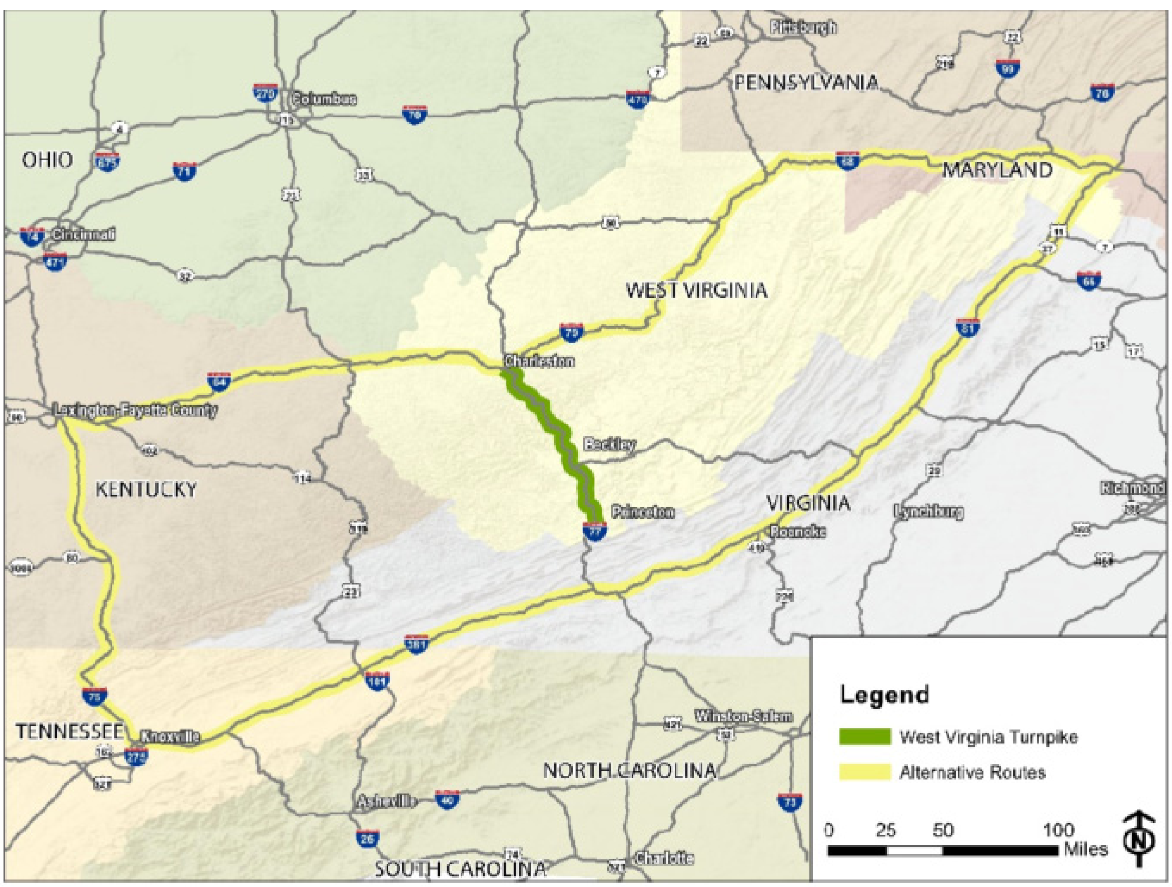
General

The Authority operates the Turnpike, which is an 88-mile toll roadway located between Charleston and Princeton, West Virginia. The Turnpike carries the designation of I-77 for its entire length. At its northern terminus near Charleston, the Turnpike intersects with U.S. Route 60. I-79 feeds into I-77 approximately 10 miles north of the northern terminus of the Turnpike. At the southern terminus near Princeton, the Turnpike intersects with U.S. Route 460. U.S. Route 19 (Corridor L) near Beckley is also important as a connector road.

The Turnpike is an integral part of the I-77 road network, which extends from Cleveland, Ohio to Columbia, South Carolina. In 1988, the final segment of I-64, which intersects with the Turnpike south of Beckley, West Virginia, was completed. The section of the Turnpike between the I-64 interchange and the northern terminus in Charleston carries the I-64 designation as well. I-64 travels west to east from St. Louis, Missouri to Virginia Beach, Virginia.

Within the region, the Turnpike is an important north-south and east-west Interstate travel corridor linking eastern Ohio and western Pennsylvania in the north to western Kentucky, Virginia, North Carolina, and other states in the southeastern U.S. The Turnpike extends through mountainous terrain over much of its length; these mountains are otherwise a barrier to travel and make it impractical for vehicles to traverse the State on other roadways. Posted speed limits are up to 70 miles per hour, reflecting the high design standards of the Turnpike.

A map depicting the Turnpike in relation to geographic alternative routes is set forth below.



The Turnpike uses an "open" toll barrier system with three mainline toll barriers, or plazas, located between Charleston and Princeton, located at milepost 30 at Ghent (Toll Plaza A), at milepost 56 at Pax (Toll Plaza B) and at milepost 83 at Chelyan (Toll Plaza C), all as depicted on the below graphic. Tolls are collected in both directions at the mainline barriers. There are entrance-exit ramps off the mainline connecting to local feeder roads at eighteen locations. All such ramps are toll-free except for the movements to and from the south at the interchange just north of Beckley (intersection of U.S. Route 19), which maintains a toll barrier facility.

There are three "travel plazas" on the Turnpike, which provide restaurant, fuel, and rest facilities. These facilities provide convenient service to Turnpike travelers and also serve as tourist information centers and foster a positive image of West Virginia. Two such areas are accessible for northbound travelers, and one near Beckley serves both northbound and southbound motorists. Integrated with the Beckley service area is Tamarack-The Best of West Virginia, an arts and crafts, tourism and exposition center with additional dining and conference facilities that is owned and operated by the Authority ("***Tamarack***"), and is located off of Exit 45 of the Turnpike. In addition, there are two rest areas southbound and a Welcome Center located near Princeton at the interchange of US 460 and I-77. The rest stop at southbound milepost 69 is a full service area with restroom, telephone, concession and picnic areas. The rest stop at southbound milepost 19 has ample parking areas, picnic shelters and a scenic overlook. The travel plazas are shown on the map on the following page.

Tamarack is an economic development project authorized by the State Legislature under section 6 of the Act. The Tamarack facility was constructed with non-toll revenues of the Authority and must be maintained by the Authority only from its non-toll revenues. Revenues derived from Tamarack, as well as the other service plazas and information centers on the Turnpike, are excluded from Toll Road Revenues under the Indenture.

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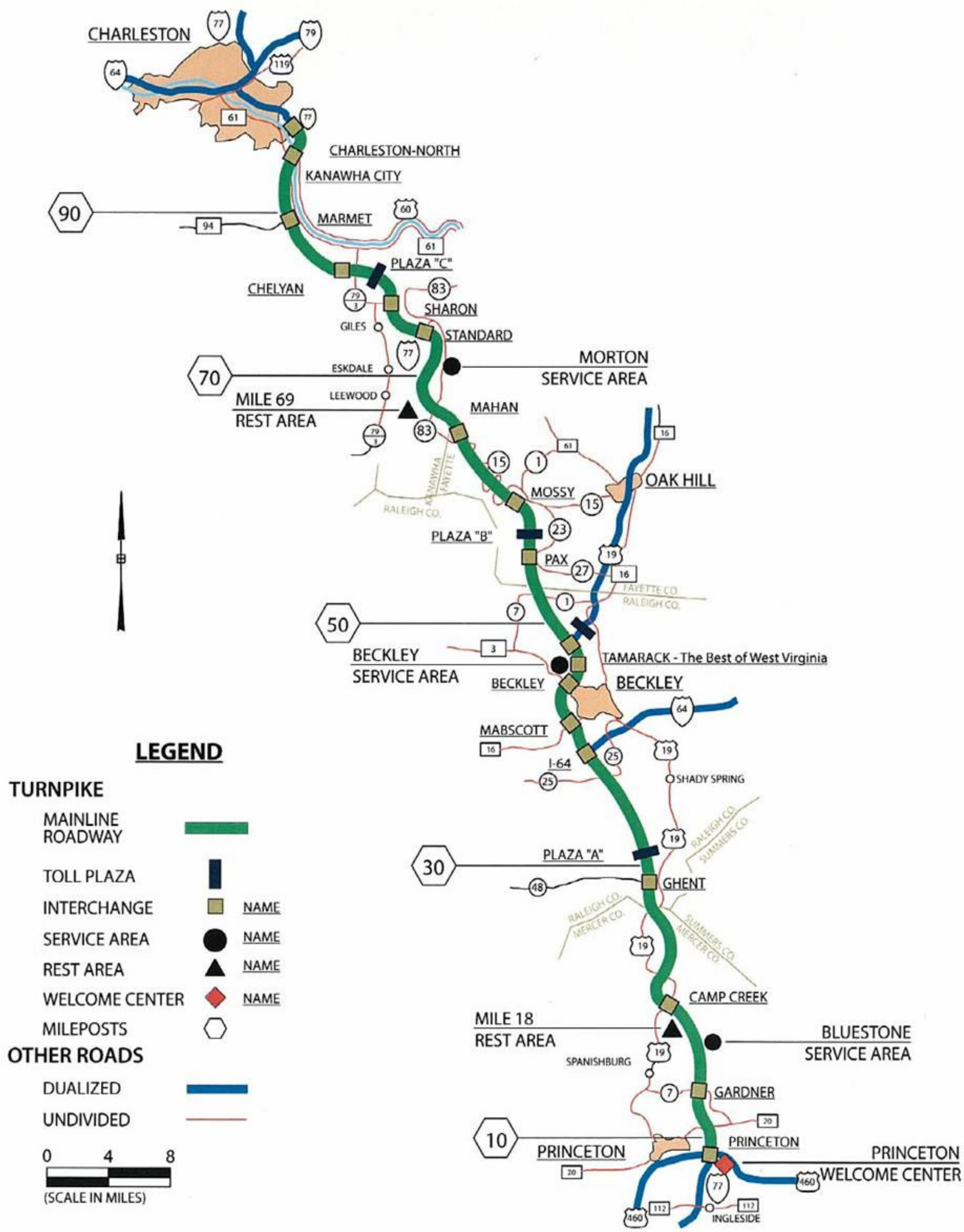
CHARLESTON
CHARLESTON-NORTH
KANAWHA CITY
MARMET
PLAZA "C"
CHELYAN
SHARON
STANDARD
GILES
ESKDALE
LEEWOOD
MORTON
SERVICE AREA
MILE 69
REST AREA
MAHAN
OAK HILL
MOSSY
RALEIGH CO.
PLAZA "B"
PAX
FAYETTE CO.
RALEIGH CO.
BECKLEY
SERVICE AREA
TAMARACK - The Best of West Virginia
BECKLEY
BECKLEY
MABSCOTT
I-64
SHADY SPRING
PLAZA "A"
GHENT
RALEIGH CO.
SUMMERS CO.
RALEIGH CO.
MERCER CO.
SUMMERS CO.
MERCER CO.
CAMP CREEK
MILE 18
REST AREA
BLUESTONE
SERVICE AREA
SPANISHBURG
GARDNER
PRINCETON
PRINCETON
PRINCETON
WELCOME CENTER
INGLESIDE
90
70
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10
LEGEND
TURNPIKE
MAINLINE ROADWAY
TOLL PLAZA
INTERCHANGE
SERVICE AREA
REST AREA
WELCOME CENTER
MILEPOSTS
NAME
NAME
NAME
NAME
OTHER ROADS
DUALIZED
UNDIVIDED
0 4 8
(SCALE IN MILES)

The Turnpike is patrolled by a company of West Virginia State Police, which is dedicated solely to the Turnpike and is responsible for traffic safety management and drug interdiction.

The Turnpike benefits from a strategic location that connects a number of major economic centers and travel routes for key U.S. commerce in both the Midwest and the Southeast. Historical estimates by the Authority and CDM Smith demonstrate that approximately 75% of toll revenues are generated from out-of-state traffic.[1] As shown on the map below, the Turnpike provides a critical connection for vehicles bound to and from Ohio, Pennsylvania, North Carolina and Kentucky.

[1] Source: CDM Smith, Inc. (formerly Wilbur Smith Associates) Traffic and Toll Revenue Study dated April 10, 2009 (revised April 13, 2009), as measured by the registration of vehicles using the Turnpike.

Tolling Collection

Toll Collection System

An upgraded toll collection system went online in December, 2011. The former system was more than 10 years old and in critical need of replacement. The toll system integrator, TransCore, was responsible for designing, installing, testing and maintaining the 5 plaza, 42-lane toll collection system. The upgraded toll collection system replaced the lane software and lane equipment. In addition, all plaza, host and back office management software was replaced, and additional functionality, such as on-line statements and renewals, was added. The new system provided upgrades to the toll plaza signage and "stop and go" lights, but did not make major changes at the plazas. Instead, most of the changes made as part of the upgraded system were changes that now provide customers with the ability to access and manage their accounts on-line via the internet and with the added feature of electronic notifications. The new system also added the software capability to track toll violations through the use of optical character recognition of license plates and automatically generate reports to assist the Authority in the collection of tolls. The Authority expects to implement further upgrades to its tolling collection system in Fiscal Year 2019.

Electronic Tolling Collection

The Authority is a full member agency of the *E-ZPass®* Group which develops guidelines for and facilitates the electronic collection of tolls among at least 38 toll agencies in 17 states, as depicted on the graphic below. This allows any vehicle equipped with a transponder to travel seamlessly without stopping to pay a cash toll. The *E-ZPass®* program includes over 21 million accounts with over 34 million transponders in circulation and the collection of more than $9 billion in electronic toll revenues in 2017.

Source: http://www.e-zpassiag.com/about-e-zpass/85-map

All toll lanes on the Turnpike accept *E-ZPass®*. In fiscal year 2017, approximately 39% of all transactions on the Turnpike were paid by *E-ZPass®*. While cash is the preferred method of payment by passenger cars traveling the Turnpike, *E-ZPass®* is the preferred method of payment for commercial traffic, representing 75% of all commercial transactions in calendar year 2016. See “APPENDIX D – TRAFFIC AND REVENUE STUDY.”

Electronic toll collections accounted for approximately 38.8% of all transactions and 45.6% of all revenue collections of the Authority in fiscal year 2017, as compared to approximately 37.2% and 43.6%, respectively, in fiscal year 2016. See “APPENDIX B – FINANCIAL STATEMENTS OF THE AUTHORITY.”

Authority-issued *E-ZPass®* transponders (“***WV E-ZPass® Transponders***”) represented 17% of all transactions on the Turnpike in calendar year 2016 and non-WV *E-ZPass®* Transponders issued by other tolling authorities represented 21% of all transactions for that same period. Among passenger car transactions, WV *E-ZPass®* transactions represent 18% of all such transactions, while non-WV *E-ZPass®* transactions represent 10% of all such transactions. Among commercial transactions, non-WV *E-ZPass®* transactions account for 60% of all such transactions, while WV *E-ZPass®* transactions account for 15% of all such transactions. As of 2017, the WV *E-ZPass®* system had approximately 46,000 accounts. See “APPENDIX D – TRAFFIC AND REVENUE STUDY.”

The number of WV *E-ZPass®* Transponders issued by the Authority, and corresponding customer account base, is anticipated to increase upon implementation of the Single Fee Discount Program. The tables below show historic electronic tolling penetration rates based on both revenues and transactions.

Electronic Toll Collection Penetration Rates by Transactions and Revenue (2008 - 2017)

Fiscal Year	Transactions	Revenues
2008	26.30%	35.20%
2009	26.25%	35.06%
2010	29.00%	33.37%
2011	30.16%	35.60%
2012	32.69%	36.70%
2013	34.20%	39.09%
2014	35.70%	40.80%
2015	36.54%	42.15%
2016	37.24%	43.63%
2017	38.83%	45.66%

Source: West Virginia Parkways Authority, Comprehensive Annual Financial Reports.

Cash Tolling Collection

The Turnpike still maintains traditional cash collection booths. Among passenger car transactions, cash is the preferred method for payment on the Turnpike, representing 72% of all such transactions in calendar year 2016. In calendar year 2016, only 25% of commercial transactions were paid for in cash, with the balance being paid for by *E-ZPass®*. See “APPENDIX D – TRAFFIC AND REVENUE STUDY.”

Unpaid Toll Collections

The Turnpike's toll barrier system significantly limits violations as there is no open-road tolling along the Turnpike. Collection rates coupled with enforcement activities and violation penalties and fees have made the impact of toll violations net neutral on the overall financial results of the Turnpike.

Capital Improvement Plan

The Authority takes an active approach to maintaining and investing in all aspects of the Turnpike. The Authority is approaching the tail end of a nearly $335 million capital investment plan that it adopted in fiscal year 2009. See "2009 – 2019 Capital Plan" below. This 10-year capital plan has allowed the Authority to undertake significant road and bridge rehabilitation projects and raise the quality of key Turnpike assets.

2009 – 2019 Capital Plan

In conjunction with the adoption by the Authority of a new toll rate schedule that went into effect in August, 2009, representing its first toll rate increase in over 28 years, the Authority implemented a ten-year capital plan ("***2009-2019 Capital Plan***") to address approximately $335 million in backlogged essential deferred maintenance and capital needs identified by the Authority's Consulting Engineers, HNTB Corporation ("***HNTB***"). Since the toll rates were increased in 2009, the Authority has substantially increased the breadth and scope of its rehabilitation and repair projects on the Turnpike, including full depth concrete repairs and undersealing, asphalt pavement overlay, bridge deck overlay, bridge and facilities retrofit work, guardrails, median barriers, retaining walls, buildings, toll plazas, culverts and drainage pipes, and signs and pavement markings. The Authority has spent more than $249.6 million on improvements to the Turnpike since implementing the 2009 toll rate increase.

As a result of the paving projects completed by the Authority under its 2009 – 2019 Capital Plan, there have been significant improvements in the pavement ride quality on the Turnpike. While approximately 40% of the pavements were assessed as being in good or very good condition in 2010, currently 80% of the pavements on the Turnpike have been assessed by HNTB as being good or very good. See "APPENDIX E – CONSULTING ENGINEER'S REPORT."

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The table on the following page shows historic renewal and replacement amounts budgeted for the Authority on the Turnpike for fiscal years 2013 through 2018, together with capital investments made on the Turnpike for fiscal years 2013 through 2017.

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Historical R&R and Capital Costs ($ millions)

	Fiscal Year 2013	2014	2015	2016	2017	2018
Renewal and Replacement*						
Facilities Repair	$1.36	$1.04	$1.09	$0.72	$0.56	$0.47
Safety Projects	0.05	0.08	0.08	0.08	0.08	0.08
Roadway Painting	1.20	1.50	1.50	1.50	1.50	1.50
Shotcrete Bridges	-	0.22	0.25	0.20	0.17	0.10
Signs	0.10	0.10	0.11	0.11	0.12	0.12
Roadway Lighting	0.06	-	-	-	-	0.10
Full Depth Concrete Repairs	2.04	1.54	1.23	0.99	0.79	0.63
Guardrail Replacement	0.22	0.35	0.54	1.70	1.94	0.54
Culvert Repairs	1.00	1.25	1.30	1.14	1.40	1.56
Bridge & Facility Repairs	1.41	1.43	1.52	2.07	1.62	1.86
Bridge Painting	1.13	1.17	2.30	2.37	2.44	2.51
Bridge Overlays	0.56	0.30	0.31	1.40	0.83	0.50
Equipment Replace and Rebuild	2.02	1.30	1.45	2.17	2.38	3.22
Total R&R	**$ 11.13**	**$ 10.28**	**$ 11.68**	**$ 14.44**	**$ 13.83**	**$ 13.20**
Total Capital Costs**	**$ 36.32**	**$ 23.90**	**$ 35.16**	**$ 32.47**	**$ 34.26**	**

Source: West Virginia Parkways Authority.

* R&R figures are budgeted amounts from the Authority's Annual Budget.

** Total Capital Costs are actual figures, as reported in the Authority's Comprehensive Annual Financial Reports. Fiscal Year 2018 Capital Costs are not yet available.

Future Capital Improvement Program

The Consulting Engineers make annual inspections of bridges, pavements, culverts, signs, lighting, pavement markings and other structures on the Turnpike, and then prepares an annual report which contains its 10-year funding recommendation for the Authority's renewal and replacement requirements and future capital needs, such as paving needs ("***Ten-Year Capital Program***"). See "APPENDIX E – CONSULTING ENGINEER'S REPORT." Key aspects of the Ten-Year Capital Program include:

Bridge Deck Replacements. There are 116 bridges on the Turnpike (106 painted steel; 10 concrete). The Ten-Year Capital Program recommended by the Authority's Consulting Engineers calls for replacement of 42 bridge decks at an estimated cost of $96.2 million. As of their most recent Annual Report, the Consulting Engineers noted that the bridges along the Turnpike remain in good condition.

Bridge Approaches. Bridge approaches located on embankments settle relative to the bridge decks which are supported by substructure units firmly founded on bedrock or supported by piling driven to bedrock. Settled bridge approaches cause vehicles to bounce and cause the bridges to vibrate excessively. Periodic mill and overlay of the approaches is required.

Pavement. The Turnpike mainline roadways were originally constructed in the early 1950s of Portland Cement Concrete (PCC), and substantially redone in the 1970s and 1980s when the Turnpike was upgraded to interstate standards. Currently 80% of the pavements are rated to be in good to very good condition. The Ten-Year Capital Program will address future paving needs. Those paving needs consist of rehabilitation of the pavements and overlays to preserve existing asphalt pavements.

Toll Collection System. The Ten-Year Capital Program contains periodic upgrades of the toll collection system to avoid serious operational issues for the Authority that could affect the reliability and effectiveness of its toll collections. The proposed upgrades will replace aging systems that will be reaching the limits of its projected useful life. The upgrades will address issues of reliability, spare parts, video enforcement, cameras, computer enhancements, enhanced toll collection systems, expand the capabilities of the customer service system, storage and distribution of transponders, management and processing toll accounts, and maintenance of back-office system for computer data and hardware.

Other Projects. As described earlier, under the Roads to Prosperity Program, the Division of Highways intends to widen the lanes at the I-77/I-64 interchange on the Turnpike located at Beckley, West Virginia, at an estimated cost of approximately $101 million. This lane-widening project construction cost will be funded from proceeds of the State's General Obligation State Road Bonds, Series 2018 A and Series 2018 B, except for certain project management costs that will be paid by the Authority for contract administration and quality assurance.

The table on the following page provides HNTB's Summary of the 10-Year Plan for Renewal and Replacement and capital investment in the Turnpike.

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Consulting Engineer's R&R and Capital Cost Estimates ($ millions)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Renewal and Replacement										
Facilities/Safety/State Police	$ 1.00	$ 1.10	$ 0.70	$ 0.70	$ 0.80	$ 0.90	$ 0.80	$ 0.80	$ 0.40	$ 0.40
Roadway Painting	1.40	1.70	1.70	1.74	1.74	1.74	1.90	2.00	2.00	2.00
Shot-crete Repairs	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Sign Replacement	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.20	0.20
Roadway Lighting	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Full-Depth Concrete Repairs	0.90	1.60	1.24	0.70	0.40	0.32	0.32	0.32	0.32	0.32
Guardrail Replacement	0.60	0.70	0.70	0.70	0.70	0.70	0.80	0.80	0.80	0.80
Culvert Repairs	4.70	6.00	6.70	6.90	7.00	7.25	7.50	7.70	8.00	8.45
Bridge and Facilities Repairs	2.00	2.00	2.10	2.20	2.20	2.30	2.40	2.40	2.50	2.60
Bridge Painting R&R	3.40	1.95	2.00	2.00	2.15	2.20	1.60	0.77	1.46	2.40
Bridge Deck Sealing and Overlays	0.50	0.50	0.60	0.60	0.60	0.60	0.60	0.70	0.70	0.70
Slope Conditioning	0.60	0.60	0.60	0.70	0.70	0.70	0.70	0.70	0.80	0.80
Equipment	1.80	1.60	1.70	1.70	1.80	1.80	1.90	1.90	2.00	2.10
Total R&R	**$ 17.20**	**$ 18.05**	**$ 18.34**	**$ 18.24**	**$ 18.39**	**$ 18.81**	**$ 18.82**	**$ 18.49**	**$ 19.38**	**$ 20.97**
Capital										
Paving	$ 36.00	$ 26.00	$ 10.30	$ 10.60	$ 12.60	$ 20.10	$ 11.60	$ 11.80	$ 12.10	$ 12.50
Major Projects	11.00	21.00	19.10	26.70	28.30	28.60	29.90	27.90	29.10	23.60
Toll System Upgrade	5.00	-	-	-	-	-	-	6.00	-	-
Buildings	1.40	6.00	3.00	-	-	-	-	-	-	-
Parking Lot Paving	0.60	-	1.00	-	-	-	-	-	-	-
Misc Needs	-	-	-	1.00	1.00	1.00	1.10	1.10	1.10	1.20
Total Capital Costs	**$ 54.00**	**$ 53.00**	**$ 33.40**	**$ 38.30**	**$ 41.90**	**$ 49.70**	**$ 42.60**	**$ 46.80**	**$ 42.30**	**$ 37.30**

Source: Consulting Engineer's Report. See "APPENDIX E – CONSULTING ENGINEER'S REPORT."

Routine Maintenance

In addition to snow removal and ice control, road and bridge maintenance crews perform activities associated with all aspects of highway maintenance including: pavements, drainage, signage and other traffic control devices, bridge repairs, bench cleaning, vegetation control and litter pickup. Utilizing the Maintenance Management System (MMS), the Maintenance Division prepares periodic condition ratings on maintenance performance areas. Actual conditions are compared to established performance targets to assess the effectiveness of the maintenance program.

Traffic Management and Safety

The Turnpike is patrolled by an up to 31 member group designated as Troop 7 of the West Virginia State Police who are dedicated to the Turnpike and are responsible for traffic safety management and drug interdiction. With its 24-hour patrol, the State Police are dedicated to making the Turnpike safer by monitoring compliance with posted speed limits, assisting disabled motorists, detecting impaired drivers, and apprehending drug traffickers. Troop 7's efforts are strengthened by two Public Service Commission of West Virginia (PSC) officers whose focus is inspection and enforcement of commercial vehicle safety and operating regulations.

The Authority provides roadside assistance to Turnpike travelers with disabled vehicles. In winter, snow and ice removal is a top priority and major concern of the Maintenance Department. The Authority's annual operating budget includes funds necessary to adequately maintain safe highways during the winter storm season. Speed monitoring awareness radar trailers are employed to remind motorists of their speed. Rumble strips and eight inch edge lines are utilized to enhance the travel lane for the safety of motorists.

Toll Rates

The Authority has undertaken two major toll rate increases in the last ten years, including the most recent toll increase adopted by the Board in June 2018.

August 2009 Toll Increase. On July 1, 2009, the Authority adopted a resolution to implement a new toll schedule that went into effect on August 1, 2009. At the time, the Authority, based on recommendations of HNTB, implemented a toll increase that it determined to be necessary for the Authority to meet its debt service coverage requirements on the Prior Bonds and maintain the Turnpike in good repair. The 2009 toll schedule implemented a 60% increase in cash rates, with a 35% discount for passenger vehicles enrolled in the WV *E-ZPass®* program, a 20% discount for commercial vehicles enrolled in the WV *E-ZPass®* program and a 13% discount for commercial vehicles enrolled in other states' *E-ZPass®* programs.

June 2018 Toll Increase. At its meeting duly held on June 7, 2018, the Authority adopted a resolution to approve the schedule of toll rates for passage along the Turnpike reflected on the following page. This new toll rate schedule represents an initial 100% increase in toll rates for all classes of vehicles, subject to automatic adjustments each year beginning in 2022 as described in more detail below. Toll Class 1 non-commercial passenger motor vehicles are eligible to enroll in the Single Fee Discount Program described below for an annual flat fee providing them with unlimited travel along the Turnpike. Additionally, commercial vehicles enrolled in the WV *E-ZPass®* program or any other state's *E-ZPass®* program are still eligible for discounts off of the cash rates equal to 20% and 13%, respectively.

The toll increases included in the toll rate schedule set forth below will take effect on January 1, 2019, though the Limited Early Enrollment Option as defined below is anticipated to begin on or about September 15, 2018. Beginning on January 1, 2022, the toll rates will be subject to an ***automatic increase*** of 1.60% every year (subject to rounding), as described in the Tolling Policy and Toll Rate Schedule on the following page. For customers enrolled in the Single Fee Discount Program, the rate will ***automatically increase*** by 5.0% on January 1, 2022, and then by 5.0% on January 1 of each third year thereafter.

TOLLING POLICY AND TOLL RATE SCHEDULE
Effective January 1, 2019*

			ALL MAINLINE TOLL PLAZAS			NORTH BECKLEY PLAZA		
Toll Class	**Axles**	**Vehicle Type**	**WV *E-ZPass*® Personal Account Rate**			**WV *E-ZPass*® Personal Account Rate**		
1	2	Single Fee Discount Program including Limited (One-Time) Early Enrollment Option	$0.00 with valid Single Fee Discount Plan or Early Enrollment Option			$0.00 with valid Single Fee Discount Plan or Early Enrollment Option		
Toll Class	**Axles**	**Vehicle Type**	**Cash Rate**	**WV *E-ZPass*® Commercial Rate**	**Non-WV *E-ZPass*® Rate**	**Cash Rate**	**WV *E-ZPass*® Commercial Rate**	**Non-WV *E-ZPass*® Rate**
1	2	Passenger Cars/Pickup Trucks/Motorcycles and Passenger Vans (under 7'6")	$4.00	$2.60	$4.00	$0.75	$0.52	$0.80
Toll Class	**Axles**	**Vehicle Type**	**Cash Rate**	**WV *E-ZPass*® Personal PrePaid Account & Commercial Rate**	**Non-WV *E-ZPass*® Rate**	**Cash Rate**	**WV *E-ZPass*® Personal PrePaid Account & Commercial Rate**	**Non-WV *E-ZPass*® Rate**
2	3+	Passenger Cars/Pickup Trucks with a trailer (under 7'6")	$5.00	$3.25	$5.00	$1.50	$1.04	$1.60
3	2 - 3	Motor Home	$5.00	$3.25	$5.00	$1.50	$1.04	$1.60
4	3+	Motor Home with a trailer	$6.50	$4.22	$6.50	$2.50	$1.56	$2.40
Toll Class	**Axles**	**Vehicle Type**	**Cash Rate**	**WV *E-ZPass*® Commercial Rate**	**Non-WV *E-ZPass*® Commercial Rate**	**Cash Rate**	**WV *E-ZPass*® Commercial Rate**	**Non-WV *E-ZPass*® Commercial Rate**
5	2	2 axle Trucks	$6.50	$5.20	$5.66	$1.50	$1.28	$1.40
6	3	3 axle Trucks	$9.00	$7.20	$7.84	$2.50	$1.92	$2.08
7	4	4 axle Trucks	$13.00	$10.40	$11.32	$3.25	$2.56	$2.78
8	5	5 axle Trucks	$13.50	$10.80	$11.74	$3.25	$2.56	$2.78
9	6+	6+ axle Trucks	$19.00	$15.20	$16.54	$4.75	$3.84	$4.18
10		Oversize Trucks	$24.00	$19.20	$20.88	$14.50	$11.52	$12.52

Automatic Adjustment: (i) Beginning in 2022, the toll rate schedule set forth above shall be subject to an automatic increase of 1.60% per year; provided, that the amount of any resulting increased rate shall be rounded to the nearest $0.25 for the Cash Rate at each Mainline Toll Plaza and the North Beckley Plaza, (ii) the corresponding WV *E-ZPass*® Rates and Non-WV *E-ZPass*® Rates thus shall also be subject to the automatic increase of 1.60% per year, (iii) the annual automatic increases described in this paragraph shall be calculated from the pre-rounded Cash Rates, not the rounded Cash Rates, and (iv) beginning on January 1, 2022, in accordance with the Act, the $25 fee charged for the Single Fee Discount Program shall be automatically increased by 5.00% and then shall be automatically increased by 5.00% every three years thereafter (that is, on the January 1st that is the third anniversary of the previous automatic 5.00% increase) without further action of the Authority. **Single Fee Discount Program:** Beginning on January 1, 2019, a customer driving a Toll Class 1 passenger motor vehicle (i.e., two axle passenger vehicles weighing less than 8,000 pounds and under 7'6" for personal - non-commercial use) may obtain (upon submission of a complete application, payment of applicable fees and receipt of a special transponder from the West Virginia Parkways Authority) unlimited travel on the West Virginia Turnpike for one year (from the month of purchase) for that vehicle for an annual fee of $25 per year per vehicle (subject to the subsequent 5.00% increases as provided above), plus applicable costs of issuing a special transponder for that vehicle (See "Single Fee Discount Program"). **Non-Commercial Vehicles in Toll Class II, III and IV – Discount Plan for West Virginia *E-ZPass*® Customers**: Customers with vehicles in Class II, III and IV (i.e. Vehicles greater than 7'6" in height or Class 1 vehicles towing trailers) having a WV *E-ZPass*® will continue to receive a 35% discount off of the pre-rounded Cash Rates at each toll plaza on the West Virginia Turnpike; provided, however, that the applicable Cash Rate at each Mainline Toll Plaza and the North Beckley Toll Plaza shall be rounded to the nearest $0.25. **Commercial Discount Plan #A**: There is a $25.00 charge for the purchase of each *E-ZPass*® transponder (non-refundable). Rates are based on the West Virginia Toll Rates table above under the column "WV *E-ZPass*® Rate." **Commercial Discount Plan #B**: Accounts are opened and managed by other *E-ZPass*® agencies, so there is no paperwork, account maintenance, or charge for transponders. Rates are based on the West Virginia Toll Rates table above under the column "Non-WV *E-ZPass*® Rate".
***Effective Date**: This Tolling Policy and Toll Rate Schedule shall become effective as of January 1, 2019; provided, that the Limited (One Time) Early Enrollment Option shall become available and effective on or about September 15, 2018.

Single Fee Discount Program. The Authority, by its resolution adopted on June 7, 2018, also approved a new single fee discount program (the "***Single Fee Discount Program***") required by the Act, which will be made available to customers on or about September 15, 2018, following the issuance by the Authority of its Series 2018 Senior Lien Bonds. Under this new Single Fee Discount Program, a customer driving a Toll Class 1 passenger (non-commercial) motor vehicle (*i.e.*, a passenger vehicle less than 7 feet six inches in height and weighing less than 8,000 pounds, which is being driven for personal and non-commercial use) with a West Virginia *E-ZPass*® transponder will be entitled to unlimited travel on the Turnpike for one year, beginning in the month of enrollment, for an annual fee of $25 per year per vehicle, plus for new West Virginia *E-ZPass*® customers, a transponder issuance cost which is estimated to be $13 per vehicle. Existing West Virginia *E-ZPass*® customers will not have to pay the added transponder issuance cost as part of their enrollment into the Single Fee Discount Program. The Single Fee Discount Program will provide for unlimited travel on the Turnpike by one Toll Class 1 passenger vehicle.

Customers who enroll in the Single Fee Discount Program prior to December 31, 2018, will receive a one-time early enrollment incentive offer which will provide such customers with unlimited travel on the Turnpike beginning on their enrollment date through the end of calendar year 2018, plus calendar years 2019, 2020 and 2021, for a one-time fee of $24 per vehicle, plus the estimated $13 transponder issuance cost for new West Virginia *E-ZPass*® customers. For purposes of this Official Statement, the early enrollment incentive offer under the Single Fee Discount Program is referred to hereinafter as the "***Limited Early Enrollment Option***."

As part of its revised toll rate schedule adopted at its June 7, 2018 meeting, the Authority also approved automatic forward-looking increases in the Single Fee Discount Program fee. Beginning on January 1, 2022, and on January 1st of each third year thereafter, the Single Fee Discount Program fee will increase by 5.0%, as authorized by the Act.

The Single Fee Discount Program will be made available by the Authority to any customer for a Toll Class 1 passenger (non-commercial) motor vehicle that purchases a West Virginia *E-ZPass*® transponder from the Authority, whether such customer is a West Virginia resident or a resident of any other state or country. It is anticipated that existing West Virginia *E-ZPass*® passenger vehicle customers will be automatically converted into the Limited Early Enrollment Option on or about September 15, 2018, unless such customers opt out of the program by a deadline to be set by the Authority.

Implementation of Future Toll Changes

Under the Act, the Authority is authorized to fix, charge and collect tolls, and increase or adjust tolls, for use of the Turnpike. The Act establishes a process the Authority must follow in order to raise tolls, charges, and/or fees (i.e., changing the toll rate schedule). The process includes providing public notice, holding public meetings in the four counties in which the Turnpike is located, and providing opportunity for public comment, as provided in Section 13a of the Act. Future toll increases, excluding the various automatic annual increases to begin in 2022 that have already been approved as part of the Authority's recently adopted revised toll rate schedule, would require majority consent from the Authority's Board, but would not require any additional legislative approval.

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SUMMARY OF HISTORICAL OPERATIONS

Historical Traffic Trends and Toll Revenue

The Authority has enjoyed stable traffic growth over the last several years, with total transactions and total revenue growing to 37.4 million and $92.7 million in fiscal year 2017, respectively. Gross toll revenues have grown by over 68.0% since 2000, while total transactions grew 11.6% during the same period. In fiscal year 2017, passenger vehicles accounted for 78% of total transactions and 53% of total toll revenues, while commercial vehicles accounted for 22% of total transactions and 47% of total toll revenues.

The following table summarizes the Authority's transactions for Fiscal Years 2000 through 2017.

Transactions (000's)

Fiscal Year	Passenger Vehicles	Commercial Vehicles	Total
2000	25,883	7,697	33,580
2001	25,182	7,767	32,949
2002	26,864	7,625	34,489
2003	26,809	7,607	34,416
2004	27,544	7,866	35,410
2005	27,078	8,308	35,386
2006	26,745	8,437	35,182
2007	26,960	8,265	35,225
2008	26,413	8,018	34,431
2009	26,511	7,098	33,609
2010	27,043	7,329	34,372
2011	27,140	7,328	34,468
2012	27,549	7,515	35,064
2013	26,934	7,462	34,396
2014	27,154	7,621	34,775
2015	28,006	7,890	35,896
2016	28,924	8,057	36,981
2017	29,146	8,250	37,396

Source: West Virginia Parkways Authority, Comprehensive Annual Financial Reports.

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The following table summarizes the Authority's toll revenues for Fiscal Years 2000 through 2017.

Toll Revenues ($ 000's)

Fiscal Year	Passenger Vehicles	Commercial Vehicles	Total
2000	$26,473	$28,683	$55,156
2001	24,984	28,647	53,631
2002	26,670	28,269	54,939
2003	26,616	28,141	54,757
2004	27,388	29,466	56,854
2005	27,165	30,834	57,999
2006	27,856	34,002	61,858
2007	26,908	31,257	58,165
2008	26,831	30,182	57,013
2009	26,584	26,757	53,341
2010	40,685	39,186	79,871
2011	42,066	39,894	81,960
2012	43,280	40,627	83,907
2013	43,429	40,090	83,519
2014	44,032	40,875	84,907
2015	46,309	42,388	88,697
2016	50,333	43,246	93,579
2017	48,847	43,892	92,739

Source: West Virginia Parkways Authority, Comprehensive Annual Financial Reports.

Management's Discussion and Analysis of Operating Results

Fiscal Year 2018 Year-to-Date Results

During the first nine months of fiscal year 2018, passenger car traffic volume increased by 0.4% and commercial traffic volume increased by 2.8% compared to the first nine months of fiscal year 2017. The increased toll revenue of $1.4 million or 2.1% percent resulted from the traffic increases supplemented with increased revenue from toll recovery activities. Total expenses decreased by $0.5 million or 1.8% for the first nine months of fiscal year 2018 compared to the prior year. The decrease in total expenses is attributable to cost savings due to less than average snowfall over the winter, which contributes to savings in road salt usage, overtime and equipment use. Maintenance expenses decreased by $0.7 million or 5.2% during this period.

Fiscal Year 2017 Results

During fiscal year 2017, passenger car traffic volume increased by 0.8% and large commercial traffic volume increased by 2.4% compared to fiscal year 2016. Passenger car toll revenues increased by 0.4% and large commercial toll revenues increased by 1.5% compared to fiscal year 2016. Total net toll revenues including an increase in the utilization of available discount programs and results of toll enforcement collections programs resulted in a decrease in toll revenue of approximately $840,000 or 0.9%, from fiscal year 2016. For the year ended June 30, 2017, total operating expenses decreased 0.5% or $446,000 from fiscal year 2016. Excluding depreciation, operating expenses decreased $835,000 or 1.71% from fiscal year 2016. Decreases in expenditures related to salt, damage claims and recoveries, guardrail replacement, and other maintenance expenses.

Fiscal Year 2016 Results

During fiscal year 2016, passenger car traffic volume increased by 3.3% and large commercial traffic volume increased by 2.1% compared to the prior fiscal year. Passenger car toll revenues increased by 4.4% and large commercial toll revenues increased by 2.0% compared to fiscal year 2015. Toll revenues increased by 5.5% over the prior fiscal year, from $88.7 million in 2015 to $93.6 million 2016. For the year ended June 30, 2016, total operating expenses increased 3.1% or $2.6 million. Excluding depreciation, operating expenses increased $1.0 million or 2.1% from fiscal year 2015. Increases in expenditures related to salt, damage claims and recoveries, guardrail replacement, and other maintenance expenses.

Fiscal Year 2015 Results

Passenger car traffic volume increased by 3.1% and large commercial traffic volume increased by 3.5% during fiscal year 2015 compared to fiscal year 2014. Passenger car toll revenues increased by 4.2% and large commercial toll revenues increased by 3.7% compared to the prior fiscal year. Toll revenues increased from $84.9 million to $88.7 million, or 4.5%, from fiscal year 2014. For the year ended June 30, 2015, total operating expenses increased 1.6% or $1.3 million. Excluding depreciation, operating expenses increased $2.3 million or 5.0% from fiscal year 2014. Increases in expenditures related to salt, damage claims and recoveries, guardrail replacement, and other maintenance expenses.

Fiscal Year 2014 Results

Passenger car traffic volume increased by 0.8% and large commercial traffic volume increased by 2.1% during fiscal year 2014. Passenger car toll revenues increased by 1.1% and large commercial toll revenues increased by 2.0%. Toll revenues increased from $83.5 million to $84.9 million, or 1.7%, from fiscal year 2013. For the year ended June 30, 2014, total operating expenses increased 1.3% or $1.1 million. Excluding depreciation, operating expenses increased $0.5 million or 1.1% from fiscal year 2013. Increases in expenditures related to salt, damage claims and recoveries and other maintenance expenses were offset by staffing reductions in the toll collection department.

Fiscal Year 2013 Results

Although toll transactions had increased from December 2011 through June 2012, transactions declined beginning in July 2012, resulting in a decrease of total transactions for fiscal year 2013 compared to fiscal year 2012. The revenue loss from the decline in transactions, coupled with revenue loss from the increased use of the available *E-ZPass*® discount programs was partially offset by enhanced revenue from systems implemented with an upgraded toll collection system, resulting in a net toll revenue decrease of 0.5%, from $83.9 million to $83.5 million, from fiscal year 2012. For the year ended June 30, 2013, operating expenses were similar as the prior year except for an expected substantial decrease in the Authority's Annual Required Contribution (ARC) due under the State's OPEB Plan related to retiree health insurance. Previously, the Authority accrued an average of $2.75 million per year in liability. Due to a funding plan established by the State, for fiscal year 2013 and beyond, estimated liability under the plan increased by only approximately $0.1 million per year.

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The following table sets forth the Authority's historical revenues, expenses and debt service coverage for Fiscal Years 2013 to 2017.

West Virginia Parkways Authority

Historical Revenue, Expenditure and Debt Service Coverage
Dollars in Thousands

	2013	2014	2015	2016	2017
Pledged Revenues					
Toll Revenue	$83,438	$84,730	$88,625	$93,223	$92,436
Total Pledged Revenues	**83,438**	**84,730**	**88,625**	**93,223**	**92,436**
Expenses Paid from Pledged Revenues					
Maintenance	19,118	19,889	23,012	22,090	22,515
Toll	10,332	9,826	9,273	9,566	9,857
Traffic Control (State Police)	3,581	3,487	3,912	3,172	3,231
Administration	2,741	5,868	4,707	4,295	6,018
Total Expenses Paid from Pledged Revenues	**35,772**	**39,070**	**40,904**	**39,123**	**41,621**
Net Revenues Available for Debt Service	**47,666**	**45,660**	**47,721**	**54,100**	**50,815**
Senior Lien Debt Service Requirements					
Exisiting Debt Service	11,186	10,529	10,577	10,755	10,760
Total Senior Lien Debt Service Requirements	**11,186**	**10,529**	**10,577**	**10,755**	**10,760**
Net Revenues Available after Debt Service	**36,480**	**35,131**	**37,144**	**43,345**	**40,055**
Renewal and Replacement Fund					
Projected Annual Budget Amounts	10,280	11,163	11,187	13,952	12,553
Remaining Cash Flow After Debt Service and R&R	**$26,200**	**$23,968**	**$25,957**	**$29,393**	**$27,502**
Debt Service Coverage Ratio					
Senior Lien Debt Service Coverage	**4.26x**	**4.34x**	**4.51x**	**5.03x**	**4.72x**
Senior Lien Debt Service and R&R Coverage Ratio	**2.22x**	**2.10x**	**2.19x**	**2.19x**	**2.18x**

Source: West Virginia Parkways Authority.

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The below table shows a comparison of the Authority's revenues, expenses and debt service coverage for the first nine months of fiscal years 2017 and 2018 (unaudited). Both transactions and revenues have increased compared to the same nine-month period in fiscal year 2017.

West Virginia Parkways Authority

Historical Revenue, Expenditure and Debt Service Coverage (for Previously Completed 9 Months)

Dollars in Thousands

	Nine Months Ended:	
	3/31/2017	**3/31/2018**
Pledged Revenues		
Flat Fee Revenues		
Toll Revenue	69,487	70,933
Other Operating Revenues or Other Adjustments		
Total Pledged Revenues	**69,487**	**70,933**
Expenses Paid from Pledged Revenues		
Maintenance	13,177	12,495
Toll Collection	8,691	8,802
Traffic Control (including State Police and Communication)	2,367	2,452
General and Administration	4,451	4,427
Total Expenses Paid from Pledged Revenues	**28,686**	**28,176**
Net Revenues Available for Debt Service	**40,801**	**42,757**
Senior Lien Debt Service Requirements		
Exisiting Debt Service	8,053	8,068
Total Senior Lien Debt Service Requirements	**8,053**	**8,068**
Net Revenues Available after Debt Service	**32,748**	**34,689**
Renewal and Replacement Fund		
Projected Annual Budget Amounts	10,250	9,809
Remaining Cash Flow After Debt Service and R&R	**$22,498**	**$24,880**
Debt Service Coverage Ratio		
Senior Lien Debt Service Coverage	**5.07x**	**5.30x**
Senior Lien Debt Service and R&R Coverage Ratio	**2.23x**	**2.39x**

* The remaining maturities of the Authority's Prior Bonds were legally defeased or redeemed on July 18, 2018. See "THE AUTHORITY – Defeasance or Redemption of Prior Debt Issuances" herein. Debt service represents pro-rata portion of debt service due during first 9 months of each fiscal year shown.
Source: West Virginia Parkways Authority.

Personnel, Retirement Plan and Other Post-Employment Benefits

As of June 30, 2017, the Authority had 374 permanent employees and 75 temporary employees assigned to the Turnpike. Additionally, as of June 30, 2017, there were 30 members of the State Police assigned to the Turnpike. As of June 30, 2017, Tamarack, which is owned and operated by the Authority, had 134 employees.

All full-time employees of the Authority are eligible to participate in the State of West Virginia Public Employees' Retirement Plan (PERS), a cost-sharing multiple-employer public employee retirement system. Benefits are provided through PERS using a two-tiered system. PERS provides retirement, disability and death benefits to plan members and beneficiaries. The West Virginia Consolidated Public Retirement Board issues a publicly available financial report that includes financial statements and required supplementary information for PERS. The most recent report is available at https://www.wvretirement.com/Forms/2017-CAFR.pdf

In accordance with State law, the Authority is currently required to contribute 11% of employee compensation for fiscal year 2018 to PERS. The Authority's total contributions to PERS for fiscal year 2017 was $1,873,000. As of June 30, 2017, the Authority reported net pension liablity of $10,007,000. For more information on the Authority's pension liability, see footnote #8 – Pension Plan, set forth in its Comprehensive Annual Financial Report set forth herein in "APPENDIX B – FINANCIAL STATEMENTS OF THE AUTHORITY."

The Authority participates in the West Virginia Other Post-employment Benefit Plan (OPEB Plan) of the West Virginia Retiree Health Benefit Trust Fund (RHBT), a cost-sharing multiple-employer defined benefit post-employment healthcare plan administered by the West Virginia Public Employees Insurance Agency. The OPEB Plan provides retiree post-employment health care benefits for participating state and local government employers. The Authority's unfunded actuarial accrued liability was $11,234,000, $10,923,000 and $10,293,000 for the fiscal years ended June 30, 2017, 2016 and 2015, respectively. The Authority's annual required contributions were $1,024,000, $1,368,000 and $1,320,000 for fiscal years ended June 30, 2017, 2016 and 2015, respectively, of which it funded $713,000 (70%), $738,000 (54%) and $779,000 (59%), in those same years, respectively. For more information on the Authority's OPEB liability, see footnote #7 – Post-Employment Benefits Other Than Pensions in its Comprehensive Annual Financial Report set forth herein in "APPENDIX B – FINANCIAL STATEMENTS OF THE AUTHORITY."

SUMMARY OF PROJECTED OPERATIONS

Summary of Consulting Engineer's Report

The Authority's Consulting Engineers, HNTB Corporation, prepared a report dated July 23, 2018, including its recommendations based on a study of the Turnpike's needs for estimated operating expenses, renewal and replacement requirements and capital costs (the "***Consulting Engineer's Report***"). See "APPENDIX E – CONSULTING ENGINEER'S REPORT." The Consulting Engineer's Report provides an assessment of the current physical condition of the Turnpike, the financial condition of the Authority, current projects in progress on the Turnpike and the adequacy or inadequacy of the current maintenance programs and capital needs.

The Consulting Engineers develop a ten-year program to address certain capital needs of the Turnpike including paving needs, bridge approaches, embankments and cuts, drainage facilities, guardrail and fencing, bridge maintenance, toll collection and recording system and other miscellaneous operations and maintenance needs such as, among other things, signage, lighting, pavement markings, toll plazas, rest areas, travel plazas, tourist information and welcome centers. They also prepare a thirty-year estimate of operating expenses incurred by the Authority to operate, maintain and service the Turnpike and carry out its other duties.

Operating Expenses. Based on its review of all relevant information, and certain assumptions included in their report, the Consulting Engineers estimate that the Authority will have operating expenses of approximately $43.1 million in fiscal year 2019, increasing to approximately $51.5 million in fiscal year 2028.

Renewal and Replacement ("R&R") Costs. The Consulting Engineers also estimated in their report, based on information reviewed by them and certain assumptions set forth in their report, that the Authority's renewal and replacement requirements will be approximately $17.2 million in fiscal year 2019, increasing to approximately $20.9 million in fiscal year 2028.

Capital Needs. The Consulting Engineer's Report also provides recommendations on projected capital needs over the 10-year forecast period. In their report, the Consulting Engineer's project that the Authority will need to fund capital needs of approximately $54.0 million in fiscal year 2019, which needs vary each year and average approximately $44.0 million annually through fiscal year 2028.

Summary of Traffic Consultant's Report

CDM Smith was retained by the Authority to conduct a detailed traffic and toll revenue projection study. On July 13, 2018, CDM Smith issued its West Virginia Turnpike 2018 Revenue Bond Study (the "***Traffic and Revenue Study***"). The purpose of the Traffic and Revenue Study was to produce estimates of transactions and annual toll revenue on the Turnpike based on a proposed 100% increase in the Authority's toll rates and the implementation of the Single Fee Discount Program. See "THE WEST VIRGINIA TURNPIKE – Toll Rates" herein.

As part of its study, CDM Smith collected and analyzed (i) background data on the Turnpike, (ii) detailed traffic and revenue data covering the last 25 years of operation and (iii) customer frequency of use data developed through the use of a number of data collection tools including the use by CDM Smith of Location Based Services (LBS) data available from StreetLight Data, Inc. By examining prior Turnpike performance, historic local and regional economics and economic forecasts, CDM Smith created a baseline forecast under current toll rates, assuming no change in toll rates would occur. A stated preference survey was also conducted to determine the likely reaction of existing passenger car customers to a variety of possible toll policy changes. This survey asked respondents to state their preference among the options of joining the Single Fee Discount Program, paying a higher cash toll at each plaza or reducing or eliminating trips they would make along the Turnpike if the new proposed toll rate schedule was implemented. Finally, traffic and revenue models were developed by CDM Smith to be sensitive to the proposed toll rate increase and other changes proposed by the Authority.

Table 6-2 from the Traffic and Revenue Study provides a summary of CDM Smith's toll transactions and revenue projections through 2050 based on the revised toll rate schedule adopted by the Authority. See "APPENDIX D – TRAFFIC AND REVENUE STUDY" herein.

The Traffic and Revenue Study concludes as follows with respect to the number of toll transactions expected to occur during the period:

- Annual transactions are projected to increase from approximately 36.9 million in 2017 to approximately 38.1 million in 2018 due to regular background growth and induced transactions from those customers who elect to enroll in the Limited Early Enrollment Option of the Single Fee Discount Program prior to December 31, 2018. See "THE WEST VIRGINIA TURNPIKE – Toll Rates" herein.

- From 2018 to 2019, annual transactions are projected to decrease from approximately 38.1 million to approximately 34.3 million as a result of the toll rate increase affecting those not participating in the Single Fee Discount Program.

- A noticeable transaction decline is expected to occur in 2022 to 33.5 million, when the Limited Early Enrollment Option of the Single Fee Discount Program ends and customers are then faced with whether to renew their participation in the Single Fee Discount Program annually at an increased rate, then in effect, of $25 per year, plus a 5% adjustment every three years (or an average of 1.6% each year).

- Over the long range forecast, transactions are projected to remain at or near 34 million until 2040 and then decline thereafter as toll rates escalate and overall growth tapers off, falling to approximately 32 million transactions in 2050.

The Traffic and Revenue Study concludes as follows with respect to the annual toll revenue growth expected to occur during the period:

- While the number of transactions is expected to decline over time, projected toll revenues are expected to increase each year from approximately $104.7 million in 2018 to approximately $181.8 million in 2050.

- Toll revenue is anticipated to increase by about 16% in 2018 due to the early enrollment option participation and by about 9% in 2019 primarily due to the toll rate increase that will take effect on January 1, 2019. Revenue will likely then increase about 1.5% in 2020 and 2021 due to regular growth, and then by about 18% in 2022 due to the end of the Limited Early Enrollment Option of the Single Fee Discount Program.

- After 2022, toll revenues are expected to increase over time due to gradually escalating toll rates, which will be increased beginning in 2022 by 1.6% every year and due to the gradually escalating Single Fee Discount Program by 5% every third year.

- From 2023 to 2030, toll revenue is expected to increase about 1.7% annually, slowing to about 1.1% growth annually through 2040, and slowing further to about 0.3% annually through 2050.

CDM Smith's report sets forth the factors and uncertainties in making any forecast or projections, noting that it does not specifically guarantee or warrant any estimate or projection contained in its report. For a more detailed discussion of the assumptions and methodology used by CDM Smith in connection with its forecast summarized above, see "APPENDIX D – TRAFFIC AND REVENUE STUDY" herein.

Projected Operating Results

The table on the following page shows estimated annual revenues, expenses and debt service coverage for the fiscal years ending 2018 through 2028. Reference is made to the Traffic and Revenue Study and the Consulting Engineer's Report for the data and assumptions on which the projections of the Authority's revenues are based. Both studies should be read in their entirety for a description of the specific and overall assumptions made in making these projections. See "OUTSTANDING BONDS AND ANNUAL DEBT SERVICE REQUIREMENTS," "APPENDIX D – TRAFFIC AND REVENUE STUDY," and "APPENDIX E – CONSULTING ENGINEER'S REPORT" herein.

West Virginia Parkways Authority
Projected Revenue, Expenditure and Debt Service Coverage
Dollars in Thousands

	2018 (Budget)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Pledged Revenues											
Flat Fee Revenues	$1,200	$20,610	$1,775	$2,485	$8,630	$14,575	$14,890	$15,310	$15,740	$16,080	$16,525
Toll Revenue	88,195	98,610	112,920	113,955	119,280	124,930	126,670	128,705	130,805	132,740	135,000
Other Operating Revenues or Other Adjustments	1,646										
Total Pledged Revenues	**91,041**	**119,220**	**114,695**	**116,440**	**127,910**	**139,505**	**141,560**	**144,015**	**146,545**	**148,820**	**151,525**
Expenses Paid from Pledged Revenues											
Maintenance	18,250	18,797	19,173	19,557	19,948	20,347	20,754	21,169	21,592	22,024	22,464
Toll Collection	12,285	14,106	14,388	14,675	14,969	15,268	15,574	15,885	16,203	16,527	16,857
Traffic Control (including State Police and Communication)	3,924	4,084	4,166	4,249	4,334	4,421	4,509	4,599	4,691	4,785	4,881
General and Administration	5,757	6,106	6,228	6,353	6,480	6,610	6,742	6,877	7,014	7,154	7,297
Total Expenses Paid from Pledged Revenues	**40,217**	**43,093**	**43,955**	**44,834**	**45,731**	**46,645**	**47,578**	**48,530**	**49,500**	**50,490**	**51,500**
Net Revenues Available for Debt Service	**50,824**	**76,127**	**70,740**	**71,606**	**82,179**	**92,860**	**93,982**	**95,485**	**97,045**	**98,330**	**100,025**
Senior Lien Debt Service Requirements											
Series 2018 A Net Debt Service	10,759	9,025	10,280	10,282	10,283	10,282	10,283	10,282	10,283	10,280	10,283
Series 2020 A Net Debt Service				12,019	14,448	14,444	14,446	14,442	14,444	14,446	14,442
Total Senior Lien Debt Service Requirements	**10,759**	**9,025**	**10,280**	**22,301**	**24,730**	**24,726**	**24,729**	**24,724**	**24,727**	**24,726**	**24,725**
Net Revenues Available after Debt Service	**40,065**	**67,102**	**60,461**	**49,305**	**57,449**	**68,134**	**69,253**	**70,761**	**72,318**	**73,604**	**75,300**
Renewal and Replacement Fund											
Projected Annual Budget Amounts	13,201	17,200	18,050	18,340	18,240	18,390	18,810	18,820	18,492	19,380	20,970
Remaining Cash Flow After Debt Service and R&R	**$26,864**	**$49,902**	**$42,411**	**$30,965**	**$39,209**	**$49,744**	**$50,443**	**$51,941**	**$53,826**	**$54,224**	**$54,330**
Capital Fund Balance - Beginning of Year		52,750	48,652	38,062	44,980	45,889	53,732	54,476	63,817	70,843	82,767
Remaining Cash Available for Capital	-	49,902	42,411	30,965	39,209	49,744	50,443	51,941	53,826	54,224	54,330
Deposit from Bond Proceeds	-			9,352							
On-Turnpike Traditional Capital Costs (PAYGO)	-	(43,000)	(32,000)	(14,300)	(11,600)	(13,600)	(21,100)	(12,700)	(18,900)	(13,200)	(13,700)
On-Turnpike Major Capital Needs (PAYGO)	-	(11,000)	(21,000)	(19,100)	(26,700)	(28,300)	(28,600)	(29,900)	(27,900)	(29,100)	(23,600)
Capital Fund Balance - End of Year	**52,750**	**48,652**	**38,062**	**44,980**	**45,889**	**53,732**	**54,476**	**63,817**	**70,843**	**82,767**	**99,797**
Debt Service Coverage Ratio											
Senior Lien Debt Service Coverage	**4.72x**	**8.43x**	**6.88x**	**3.21x**	**3.32x**	**3.76x**	**3.80x**	**3.86x**	**3.92x**	**3.98x**	**4.05x**
Senior Lien Debt Service and R&R Coverage Ratio	**2.12x**	**2.90x**	**2.50x**	**1.76x**	**1.91x**	**2.15x**	**2.16x**	**2.19x**	**2.25x**	**2.23x**	**2.19x**

*Assumes the future issuance of the Series 2020 Bonds in an amount to produce $217 million in construction fund proceeds. Assumes Series 2020 Bonds are issued for 30-year, level debt service with no capitalized interest. Revenue based on projections by CDM Smith. O&M, R&R, and Capital Cost Estimates based on projections by HNTB Corporation. See “APPENDIX D – TRAFFIC AND REVENUE STUDY” and “APPENDIX E – CONSULTING ENGINEER’S REPORT.”
Source: West Virginia Parkways Authority, Comprehensive Annual Financial Reports.

Pro-Forma Debt Service Coverage After Series 2018 Issuance

The table below provides projected debt service coverage after the issuance of the Series 2018 Senior Lien Bonds.

(In Thousands)

Year Ending June 30	Projected Gross Toll Road Revenues[1]	Projected Operating Expenses[2]	Projected Net Toll Road Revenues	Series 2018 Debt Service	Projected Series 2018 Debt Service Coverage
2019	$119,220	$43,093	$ 76,127	$ 9,025	8.4x
2020	114,695	43,955	70,740	10,280	6.9x
2021	116,440	44,834	71,606	10,282	7.0x
2022	127,910	45,731	82,179	10,283	8.0x
2023	139,505	46,645	92,860	10,282	9.0x
2024	141,560	47,578	93,982	10,283	9.1x
2025	144,015	48,530	95,485	10,282	9.3x
2026	146,545	49,500	97,045	10,283	9.4x
2027	148,820	50,490	98,330	10,280	9.6x
2028	151,525	51,500	100,025	10,283	9.7x
2029	154,305	52,530	101,775	10,282	9.9x
2030	156,810	53,581	103,229	10,282	10.0x
2031	159,080	54,652	104,428	10,281	10.2x
2032	160,730	55,745	104,985	10,279	10.2x
2033	162,075	56,860	105,215	10,281	10.2x
2034	163,835	57,998	105,837	10,281	10.3x
2035	165,650	59,157	106,493	10,283	10.4x
2036	167,160	60,341	106,819	10,283	10.4x
2037	169,085	61,547	107,538	10,283	10.5x
2038	171,065	62,778	108,287	10,279	10.5x
2039	172,745	64,034	108,711	10,279	10.6x
2040	174,835	65,315	109,520	10,282	10.7x
2041	176,190	66,621	109,569	10,279	10.7x
2042	176,445	67,953	108,492	10,283	10.6x
2043	177,055	69,312	107,743	10,279	10.5x
2044	177,705	70,699	107,006	10,280	10.4x
2045	178,070	72,113	105,957	10,282	10.3x
2046	178,765	73,555	105,210	10,279	10.2x
2047	179,495	75,026	104,469	10,283	10.2x
2048	179,960	76,526	103,434	10,282	10.1x
Total	**$4,751,295**	**$1,748,200**	**$3,003,095**	**$ 307,183**	

Source: West Virginia Parkways Authority.
(1) As projected by CDM Smith Inc. and converted to Fiscal Year.
(2) As projected by HNTB Corporation.

Actual operating results and debt service coverage may vary from the projections in the tables shown above due to several factors. These factors include, but are not limited to, fluctuating economic conditions, revised traffic and revenue projections, revisions to future debt issuance plans, and other factors which may impact future Net Toll Road Revenues and debt issuance. Accordingly, there may be material variances between the above referenced projections and actual results during the forecast periods shown.

RISK FACTORS

Purchase of the Series 2018 Senior Lien Bonds involves certain investment risks, which are discussed throughout this Official Statement. Certain of these risks are described below. Accordingly, each prospective purchaser of the Series 2018 Senior Lien Bonds must make an independent evaluation of all of the information presented in this Official Statement, including the risk factors described below, in order to make an informed investment decision. This discussion of certain risks is not intended to be comprehensive or exhaustive. The order in which these 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. These risk factors should be read in conjunction with this entire Official Statement including the Appendices hereto. There may be other risks associated with an investment in the Series 2018 Senior Lien Bonds in addition to those set forth in this Official Statement.

Traffic and Revenue Study

As the Traffic and Revenue Consultant for the Authority, CDM Smith was requested by the Authority to prepare a traffic and toll revenue projection study presenting its analyses and findings relative to projected traffic and revenues with respect to the Turnpike assuming adoption by the Authority of a revised toll rate schedule and implementation of the Single Fee Discount Program, as described in "THE WEST VIRGINIA TURNPIKE – Toll Rates" herein. See also "APPENDIX D – TRAFFIC AND REVENUE STUDY." The revenue forecasts contained in the Traffic and Revenue Study are based upon certain assumptions and limits set forth or incorporated therein which should be reviewed by potential investors to assure an understanding of some of the risks inherent in such estimates and projections. Additionally, the Single Fee Discount Program to be offered by the Authority is a unique program that has not been implemented by other tolling authorities around the country. To develop its projections, CDM Smith used Location Based Services (LBS) data available from StreetLight Data, Inc. and customer preference surveys to estimate the number of customers that are likely to enroll in the Single Fee Discount Program. While CDM Smith used currently-accepted professional practices and procedures in the development of its estimates, differences between forecasted and actual results may occur as a result of future events or circumstances beyond the control of CDM Smith. The estimates and projections in the Traffic and Revenue Study may not be indicative of actual or future values and are subject to substantial uncertainty. CDM Smith makes no guarantee or warranty of any estimate or projection contained in its study, which may be affected by future developments which cannot be predicted with certainty. Further, the estimates, projections and assumptions in the Traffic and Revenue Study 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 Traffic and Revenue Study may have a materially adverse effect upon the revenues actually realized by the Authority.

Consulting Engineer's Report

The Authority's Consulting Engineers, HNTB, prepare a report each year which contains its 10-year funding recommendations for the Authority's operating expenses, renewal and replacement requirements and future capital needs. The Consulting Engineer's projections of the Authority's future operating expenses, renewal and replacement requirements and capital needs are based on data currently available and current construction and cost of living trends. However, differences between forecasted and actual results may occur as a result of future events or circumstances beyond the control of the Authority or HNTB, including increases in labor and materials costs or changes in construction bidding methods. HNTB makes no guarantee or warranty of any estimate or projection contained in its annual report. Unexpected increases in the Authority's operating expenses could reduce its net revenues available to pay debt service on the Series 2018 Senior Lien Bonds, while increases in its renewal and replacement costs or capital costs could have a negative impact on the Authority's ability to maintain the Turnpike in good repair. See "APPENDIX E – CONSULTING ENGINEER'S REPORT."

General Factors Affecting Authority Revenues

The actual amount of future toll revenues collected by the Authority depends on a number of factors including, but not limited to, the toll rates charged by the Authority, economic conditions in West Virginia and its surrounding states, adverse weather conditions, the price and availability of motor fuel, events effecting motor vehicle travel, and the level and composition of the traffic on the Turnpike, among others. Many of these factors are beyond the control of the Authority and should they occur, could have a negative impact on its revenues. Further, some operators of bridge and toll facilities have encountered difficulty at times during recent years in obtaining adequate and affordable insurance protection for such facilities. Also, the development of any mass transportation facilities or freeways providing transportation alternatives to the Authority's facilities could have a negative impact on the Authority's revenues. Finally, although the Authority has no knowledge of any facilities contemplated to be constructed that would compete with the Authority's facilities, there can be no assurance that a bridge, tunnel or road facility competing with the Authority's facilities will not be opened in the future.

Additionally, as discussed above, the estimates and projections in the reports of both the Traffic and Revenue Consultant and the Consulting Engineers contain estimates and projections that are based largely on factors beyond the control of the Authority and such estimates and projections, if not achieved, could have a negative impact on the Authority's revenues.

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 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 Indenture to establish, charge and collect tolls for the privilege of traveling on the Turnpike at rates sufficient in each Fiscal Year to meet Operation and Maintenance Expenses and produce Net Toll Road Revenues of at least (i) 125% of the Annual Debt Service with respect to the Series 2018 Senior Lien Bonds and all other Outstanding Senior Lien Bonds issued under the Indenture, and (ii) 100% of the sum of (a) Annual Debt Service with respect to all Outstanding Bonds issued under the Indenture, (b) the amounts, if any, necessary to restore the amount on deposit in any Debt Service Reserve Fund to the applicable Series, as applicable, aggregate or composite Debt Service Reserve Requirement and (c) the Renewal and Replacement Reserve Fund Requirement, there can be no assurance that the traffic on the Turnpike will continue to be sufficient for the Authority to generate the necessary revenues to meet its obligations under the Indenture.

Forward-Looking Statements

The statements contained in this Official Statement, and in other information provided by the Authority, that are not purely historical, are forward-looking statements, including statements regarding the Authority's expectations, plans or strategies regarding the future and the projections in the reports of the Traffic and Revenue Consultant and the Consulting Engineers included in Appendices D and E, respectively, hereto. All forward-looking statements included in this Official Statement and the appendices hereto 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.

Technological and Other Risk Factors

The Authority is dependent on technology to conduct general business operations, including toll collection and customer account services which are dependent on the ability to process, record and monitor a large number of electronic transactions generated by equipment located through the Turnpike system which record transponder and license plate information on vehicles. See "THE WEST VIRGINIA TURNPIKE – Tolling Collection" herein. If the Authority's financial, accounting, or other data processing systems fail or have other significant shortcomings, the Authority could be materially adversely affected. The Authority is similarly dependent on its employees and contractors. It could be materially adversely affected if one or more of its employees/contractors cause a significant operational breakdown or failure, either as a result of human error or purposeful sabotage or fraudulent manipulation of one or more systems. In addition, as the Authority changes processes or introduces new services, the Authority may not fully appreciate or identify new operational risks that may arise from such changes. Any of these occurrences could diminish the Authority's ability to operate or result in potential liability.

The Authority may be subject to disruptions of its operating systems arising from events that are wholly or partially beyond the Authority's control, which may include, for example, security breaches; electrical or telecommunications outages; failures of computer services or other damage to the Authority's property or assets; natural disasters; or events arising from local or larger scale political events, including terrorist acts. While the Authority believes that its current resiliency plans are both sufficient and adequate, there can be no assurance that such plans will fully mitigate all potential business continuity risks. Any failures or disruptions of the Authority's systems or operations could cause reputational damage and/or give rise to losses or liability that may require the Authority to expend significant resources to correct the failure or disruption, as well as expose the Authority to litigation or losses not covered by insurance.

Computer hacking, cyber-attacks or other malicious activities could disrupt services. Further, security breaches such as leakage or loss of confidential or proprietary data and failure or distribution of information technology systems could materially and adversely affect the Authority's reputation, which could lead to significant outlays and decreased performance that insurance may not cover.

Although the Authority regularly upgrades its systems and processes that are designed to protect the security of its computer systems, software, networks and other technology assets and the confidentiality, integrity and availability of information belonging to customers, there is no assurance that all of these security measures will provide absolute security. These risks may increase in the future as the Authority continues to increase its mobile-payment and other internet-based applications both internally and externally.

In addition, the Authority is also a member of the *E-ZPass®* Group, a consortium of toll collection agencies from various states across the country that relies on technology to collect tolls, which technology is subject to similar risks. See "THE WEST VIRGINIA TURNPIKE – Tolling Collection" herein.

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

- Increased and/or unanticipated costs of operating the Turnpike;
- Complete or partial destruction or temporary closure of the Turnpike for extended periods of time; and
- Increased pension costs, unfunded healthcare and other non-pension postemployment benefits.

Ratings of the Series 2018 Senior Lien Bonds Could be Lowered or Withdrawn

S&P and Fitch credit rating agencies have assigned credit ratings to the Series 2018 Senior Lien Bonds. The ratings of the Series 2018 Senior Lien Bonds are not a recommendation to purchase, hold or sell the Series 2018 Senior Lien Bonds, and the ratings do not comment on the market price or suitability of the Series 2018 Senior Lien Bonds for a particular investor. The ratings of the Series 2018 Senior Lien Bonds may not remain for any given period of time and may be lowered or withdrawn depending on, among other things, each rating agency's assessment of the Authority's financial strength. See "RATINGS" herein.

Certain Matters Relating to Enforceability of Obligations

The remedies available to owners of the Series 2018 Senior Lien Bonds upon an event of default under the Indenture are in many respects dependent upon regulatory and judicial actions which often are subject to discretion and delay. Under existing constitutional and statutory law and judicial decisions, the remedies specified by the Indenture may not be readily available or may be limited. The various legal opinions to be delivered concurrently with the issuance of the Series 2018 Senior Lien Bonds will be qualified, as to the enforceability of the various legal instruments, by limitations imposed by bankruptcy, reorganization, insolvency or other similar laws affecting the rights of creditors generally.

Bankruptcy Risk

The rights and remedies of owners of Series 2018 Senior Lien Bonds could be limited by the provisions of the Federal Bankruptcy Code, as now or hereafter enacted (the "***Bankruptcy Code***") or by other law or legal or equitable principles which may affect the enforcement of creditors' rights. Chapter 9 of the Bankruptcy Code permits, under prescribed circumstances, a political subdivision or public agency or instrumentality of a state, such as the Authority, to commence a voluntary bankruptcy proceeding and to file a plan of adjustment in the repayment of its debts, if such entity is generally not paying its debts as they become due. Under the Bankruptcy Code, an involuntary petition cannot be filed against a political subdivision, public agency or instrumentality of a state.

In order to proceed under Chapter 9 of the Bankruptcy Code, state law must authorize the political subdivision, public agency or instrumentality to file a petition under the Bankruptcy Code. The Act currently authorizes the Authority to file a petition under the Bankruptcy Code. In any bankruptcy of the Authority, if its toll revenues are determined to be "special revenues" under the Bankruptcy Code, then such revenues collected after the date of the bankruptcy filing should be subject to the Indenture. "Special revenues" are defined to include, among other things, receipts derived from the ownership or operation of projects or systems that are intended to be primarily used to provide transportation services. While the Authority's toll revenues appear to satisfy this definition, if a court were to find otherwise, the lien on toll revenues under the Indenture would no longer be effective. If the Authority files for bankruptcy protection, the holders of the Series 2018 Senior Lien Bonds may be prohibited from taking any action to collect any amounts from the Authority or to enforce any of its obligations unless permission is granted by the court. These same restrictions may also prevent the Trustee from making payments to the holders of the Series 2018 Senior Lien Bonds from funds in its possession. The Authority, as a debtor in bankruptcy, may be able to borrow additional money that is secured by a lien on any of its property (including its toll revenues) which could have priority over the lien of the Indenture, or cause some toll revenues to be released to it, free and clear of the lien of the Indenture, in each case provide that the bankruptcy court determines that the rights of the Trustee and the holders of the Series 2018 Senior Lien Bonds will be adequately protected. The Authority may also be able, without the consent and over the objection of the Trustee and the holders of the Series 2018 Senior Lien Bonds, to alter the priority, interest rate, payment terms, collateral, maturity dates, payment sources, covenants and other terms and provisions of the Indenture and the Series 2018 Senior Lien Bonds, provided that the bankruptcy court determines that such modifications are fair and equitable.

There could be delays in payments on the Series 2018 Senior Lien Bonds while the bankruptcy court considers any of these issues. There may be other possible effects of a bankruptcy of the Authority that could result in delays or reductions in the payments on the Series 2018 Senior Lien Bonds, or result in losses to the holders thereof, or could have an adverse effect on the liquidity and value of the Series 2018 Senior Lien Bonds.

Changes in Federal Tax Law

Current and future legislative proposals, if enacted into law, could cause some or all of the interest on the Series 2018 Senior Lien Bonds to be subject, directly or indirectly, to federal income taxation, or to be subject to or not be exempted from state income taxation, or otherwise prevent the owners of the Series 2018 Senior Lien Bonds from realizing the full current benefit of the tax status of such interest. The introduction and/or enactment of any such legislative proposals may also affect the market price for, or marketability of, the Series 2018 Senior Lien Bonds. Prospective purchasers of the Series 2018 Senior Lien Bonds should consult their own tax advisors regarding any pending or proposed purchasers of the Series 2018 Senior Lien Bonds should consult their own tax advisors regarding any pending or proposed federal tax legislation, as to with Bond Counsel will express no opinion. See "TAX MATTERS" herein.

Legislative Action

Legislation is introduced from time to time in the State Legislature which, if adopted, may affect the Authority and/or the Turnpike. 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 2018 Senior Lien Bonds.

INDEPENDENT AUDITORS' REPORT

The audited financial statements of the Authority for the fiscal years ended June 30, 2017 and 2016, included in APPENDIX B to this Official Statement have been audited by Suttle & Stalnaker, PLLC, Independent Auditors, for the periods stated in their report, as stated in their report. The independent auditors have reviewed this Official Statement and have given the Authority consent to attach the general purpose financial statements of the Authority for the fiscal years ended June 30, 2017 and June 30, 2016 and the related independent auditors' reports as APPENDIX B to this Official Statement. The independent auditors performed no procedures relating to the information in this Official Statement and are therefore not associated with the issuance of the Series 2018 Senior Lien Bonds.

STATE OF WEST VIRGINIA NOT LIABLE ON THE SERIES 2018 SENIOR LIEN BONDS

THE SERIES 2018 SENIOR LIEN BONDS ARE OBLIGATIONS OF THE AUTHORITY PAYABLE SOLELY FROM THE TRUST ESTATE. THE SERIES 2018 SENIOR LIEN BONDS SHALL NOT BE DEEMED TO BE A DEBT OR LIABILITY OF THE STATE OR ANY POLITICAL SUBDIVISION THEREOF OR A PLEDGE OF THE FAITH, CREDIT OR TAXING POWER OF THE STATE OR OF ANY SUCH SUBDIVISION, AND ARE PAYABLE SOLELY FROM THE TRUST ESTATE. THE AUTHORITY HAS NO TAXING POWER.

LITIGATION

There is no pending litigation of any nature restraining or enjoining or seeking to restrain or enjoin the issuance, sale or delivery of the Series 2018 Senior Lien Bonds, or in any manner contesting or affecting the validity of the Series 2018 Senior Lien Bonds, or the proceedings taken with respect to the authorization, issuance and sale thereof.

LEGAL MATTERS

The authorization and issuance of the Series 2018 Senior Lien Bonds are subject to the approval of legality by Bowles Rice LLP, Charleston, West Virginia, Bond Counsel. Bond Counsel will render opinions in substantially the same form set forth in "APPENDIX C – FORM OF OPINION OF BOND COUNSEL" to this Official Statement. Certain legal matters will be passed upon for the Authority by its counsel, Abrams & Byron, Beckley, West Virginia, and for the Underwriters by their counsel, Jackson Kelly PLLC, Charleston, West Virginia. Certain legal matters will be passed upon by Spilman Thomas & Battle, PLLC, Charleston, West Virginia, as disclosure counsel to the Authority.

TAX MATTERS

General

The following discussion of "Tax Matters" is a brief discussion of certain income tax matters with respect to the Series 2018 Senior Lien Bonds under existing applicable law. It does not purport to deal with all aspects of taxation that may be relevant to the owner of a bond. Prospective investors, particularly those who may be subject to special rules, are advised to consult their own tax advisors regarding the tax consequences of owning and disposing of the Series 2018 Senior Lien Bonds.

Federal Income Tax Exemption of the Series 2018 Senior Lien Bonds

In the opinion of Bowles Rice LLP, Bond Counsel, under existing laws, regulations, rules and published rulings and judicial decisions of the United States of America, as presently written and applied, and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the Series 2018 Senior Lien Bonds is excludable from gross income of the owners thereof for federal income tax purposes pursuant to Section 103 of the Internal Revenue Code of 1986, as amended (the "***Code***"), and is not an item of tax preference for purposes of the federal alternative minimum tax imposed on individuals and corporations, upon the conditions and subject to the limitations set forth herein. Under the Code, however, for the taxable years that began prior to January 1, 2018, such interest is included in the adjusted current earnings of certain corporations for the purpose of computing the alternative minimum tax. A complete copy of the opinion of Bond Counsel for the Series 2018 Senior Lien Bonds is set forth in "APPENDIX C – FORM OF OPINION OF BOND COUNSEL" herein.

Assumed Compliance with Certain Covenants and Federal Tax Requirements

The Code imposes various restrictions, conditions and requirements relating to the exclusion from gross income for federal income tax purposes of interest on obligations such as the Series 2018 Senior Lien Bonds. The Authority has covenanted to comply with certain restrictions designed to ensure that interest on the Series 2018 Senior Lien Bonds will not be included in federal gross income. Failure to comply with these covenants may result in interest on the Series 2018 Senior Lien Bonds being included in gross income for federal income tax purposes, possibly from the date of original issuance of the Series 2018 Senior Lien Bonds. The opinion of Bond Counsel assumes compliance with these covenants. Bond Counsel has not undertaken to determine (or to inform any person) whether any actions taken (or not taken) or events occurring (or not occurring) after the date of issuance of the Series 2018 Senior Lien Bonds may adversely affect the value of, or the tax status of interest on, the Series 2018 Senior Lien Bonds. Further, no assurance can be given that pending or future legislation or amendments to the

Code, if enacted into law, or any proposed legislation or amendments to the Code, will not adversely affect the value of, or the tax status of interest on, the Series 2018 Senior Lien Bonds. Prospective purchasers of Series 2018 Senior Lien Bonds are urged to consult their own tax advisors with respect to proposals to restructure the federal income tax.

The tax status of the Series 2018 Senior Lien Bonds could be affected by post-issuance events. There are various requirements of the Code that must be observed or satisfied after the issuance of the Series 2018 Senior Lien Bonds in order for the Series 2018 Senior Lien Bonds to qualify for, and retain, tax-exempt status. These requirements include those relating to use of the proceeds of the Series 2018 Senior Lien Bonds, use of the facilities financed by the Series 2018 Senior Lien Bonds, investment of bond proceeds, and the rebate of so-called excess arbitrage earnings. Compliance with these requirements is the responsibility of the Authority.

The Internal Revenue Service ("***IRS***") conducts an audit program to examine compliance with the requirements regarding tax-exempt status. If the Series 2018 Senior Lien Bonds become the subject of an audit, under current IRS procedures, the Authority would be treated as the taxpayer, and the owners of the Series 2018 Senior Lien Bonds would have limited rights to participate in the audit process. The initiation of an audit with respect to the Series 2018 Senior Lien Bonds could adversely affect the market value and liquidity of the Series 2018 Senior Lien Bonds, even though no final determination about the tax-exempt status would have been made. If an audit were to result in a final determination that the Series 2018 Senior Lien Bonds do not qualify as tax-exempt obligations, such a determination could be retroactive in effect to the date of issuance of the Series 2018 Senior Lien Bonds.

Certain requirements and procedures contained or referred to in the Indenture and other relevant documents may be changed and certain actions (including, without limitation, defeasance of the Series 2018 Senior Lien Bonds) may be taken or omitted under the circumstances and subject to the terms and conditions set forth in such documents. Bond Counsel expresses no opinion as to any obligations, or the interest thereon, if any such change occurs or action is taken or omitted upon the advice or approval of bond counsel other than Bowles Rice LLP.

Amortizable Premium

Amortizable premium is determined with reference to the basis of a debt obligation with respect to the owner thereof and the amount payable at maturity or earlier redemption of such debt obligation. The amortizable bond premium in each year includes the excess of the owner's adjusted basis at the beginning of such owner's taxable year over the amount received or to be received at maturity or earlier redemption of the debt obligation. The Series 2018 Senior Lien Bonds maturing on June 1, 2019 through and including June 1, 2047 (the "***OIP Bonds***") are being sold with amortizable premium ("***Original Issue Premium***" or "***OIP***"). Under current law, the OIP for OIP Bonds must be amortized on an annual basis by the holder thereof. The amount of OIP amortized each year will not be deductible for Federal income tax purposes. Further, Section 1016 of the Code requires that the amount of annual amortization for the OIP Bonds be deducted annually from the holder's tax basis in such OIP Bonds. This reduction in a holder's tax basis will affect the amount of capital gain or loss to be recognized by the holder when the OIP Bonds are sold or redeemed.

Owners of OIP Bonds should consult their tax advisors with respect to the determination and treatment of amortizable premium for federal income tax purposes, and with respect to the state and local tax consequences of owning such OIP Bonds.

Original Issue Discount

As shown on the inside cover page of this Official Statement, the initial public offering price of the Series 2018 Senior Lien Bonds maturing on June 1, 2048 (the "***Discount Bonds***") is less than that amount payable on such Discount Bonds at maturity. The difference between the initial public offering price at which such Discount Bonds were sold and the amount payable at maturity constitutes an original issue discount ("***OID***"). In the case of any original holder of a Discount Bond, the amount of the OID which is treated as having accrued with respect to such Discount Bond is added to the cost basis of the holder in determining, for federal income tax purposes, gain or loss upon its disposition (including its sale, redemption or payment at maturity). Bond Counsel is of the opinion that amounts received upon such disposition that are attributable to accrued OID will be treated as tax-exempt interest, rather than as taxable gain for federal income tax purposes.

Interest in the form of OID is treated as compounding semiannually on days which are determined by reference to the maturity date of the Discount Bonds. The amount of OID that is treated as having accrued in respect of a Discount Bond for any particular semiannual compounding period is equal to the difference between the product of (a) one-half of the yield for the Discount Bonds (adjusted as necessary for an initial short period) and (b) the tax basis of the Discount Bond during such period. For purposes of the preceding sentence, the tax basis of the Discount Bond, if held by an original purchaser, can be determined by adding to the initial public offering price of such Discount Bond the OID that is treated as having accrued during all prior semiannual compounding periods. If a Discount Bond is sold or otherwise disposed of between semiannual compounding dates, the OID that would have accrued for that semiannual compounding period for Federal income tax purposes is to be apportioned in equal amount among the days in such compounding period.

Owners of Discount Bonds should consult their own tax advisors with respect to the determination for federal income tax purposes of OID accrued upon sale or redemption of such Discount Bonds, and with respect to the state and local tax consequences of owning such Discount Bonds.

Information Reporting and Backup Withholding

As a result of the enactment of the Tax Increase Prevention and Reconciliation Act of 2005, interest on tax-exempt obligations such as the Series 2018 Senior Lien Bonds is subject to information reporting in a manner similar to interest paid on taxable obligations. A recipient not otherwise exempt from information reporting who fails to satisfy the information reporting requirements will be subject to "backup withholding," which means that the payor is required to deduct and withhold a tax from the interest payment, calculated in the manner set forth in the Code. For the foregoing purpose, a "payor" generally refers to the person or entity from whom a recipient receives its payments of interest or who collects such payments on behalf of the recipient. In any event, backup withholding does not affect the excludability of the interest on the Series 2018 Senior Lien Bonds from gross income for federal income tax purposes. Any amounts withheld pursuant to the backup withholding should be allowed as a refund or a credit against any owner's federal income tax once the required information is furnished to the IRS.

State Income Tax Exemption

In the opinion of Bond Counsel, under the Act, as presently written and applied, the Series 2018 Senior Lien Bonds, their transfer and the income therefrom (including any profit made on the sale thereof) shall at all times be free from taxation within the State.

Individual Circumstances

Although Bond Counsel is of the opinion that interest on the Series 2018 Senior Lien Bonds is excludable from gross income for federal income tax purposes, the ownership or disposition of, or the accrual or receipt of interest on, the Series 2018 Senior Lien Bonds may otherwise affect an owner's federal liability. The nature and extent of these other tax consequences will depend upon the particular tax status of the owner or the owner's other items of income or deduction. Bond Counsel expresses no opinion regarding any such other tax consequences.

Please be advised that, except as set forth above, Bond Counsel's opinion does not address, and Bond Counsel expresses no opinion with respect to, certain collateral federal income tax consequences to certain taxpayers, including, without limitation, corporations subject to the branch profits tax, financial institutions, certain insurance companies, certain S corporations, individual recipients of Social Security or Railroad Retirement benefits and taxpayers who may be deemed to have incurred (or continued) indebtedness to purchase or carry the

Series 2018 Senior Lien Bonds. Prospective purchasers of the Series 2018 Senior Lien Bonds should consult their own tax advisors as to such consequences.

Tax Changes

Legislation has been proposed in the past, and may be proposed again in the future, to eliminate the tax-exempt status of governmental bonds issued to finance public facilities or to limit the extent of the current tax advantages available for tax exempt bonds or to limit the use of tax-exempt bonds. Any such limitation could reduce the Authority's ability to finance future capital needs of the Authority. The effect on the Authority of proposed laws and regulations and future changes in federal and state laws and policies cannot be fully or accurately determined at this time.

Current and future legislative proposals, if enacted into law, or clarification of the Code or court decisions may cause interest on the Series 2018 Senior Lien Bonds to be subject, directly or indirectly, to federal income taxation or cause the interest on the Series 2018 Senior Lien Bonds to be subject to or not exempted from state income taxation, or otherwise prevent beneficial owners from realizing the full current benefit of the tax status of such interest. The introduction or enactment of any such legislative proposals, clarification of the Code or court decisions may also affect the market price for, or marketability of the Series 2018 Senior Lien Bonds. Prospective purchasers of the Series 2018 Senior Lien Bonds should consult their own tax advisors regarding any pending or proposed federal or state tax legislation, regulations or litigation, as to which Bond Counsel expresses no opinion.

The opinion of Bond Counsel is based on current legal authority, covers certain matters not directly addressed by such authorities, and represents Bond Counsel's judgment as to the proper treatment of the Series 2018 Senior Lien Bonds for federal income tax purposes. It is not binding on the IRS or the courts. Furthermore, Bond Counsel cannot give and has not given any opinion or assurance about the future activities of the Authority or about the effect of future changes in the Code, the application or regulations, the interpretation thereof or the enforcement thereof by the IRS. The Authority has covenanted, however, to comply with the requirements of the Code.

Bond Counsel Obligations

Bond Counsel's engagement with respect to the Series 2018 Senior Lien Bonds ends with the issuance of the Series 2018 Senior Lien Bonds and, unless separately engaged, Bond Counsel is not obligated to defend the Authority or the beneficial owners regarding the tax-exempt status of the Series 2018 Senior Lien Bonds in the event of an audit examination by the IRS. Under current procedures, parties other than the Authority and its appointed counsel, including the beneficial owners, would have little, if any, right to participate in the audit examination process. Moreover, because achieving judicial review in connection with an audit examination of the Series 2018 Senior Lien Bonds would be difficult, obtaining an independent review of IRS positions with which the Authority legitimately disagrees may not be practicable. Any action of the IRS, including but not limited to selection of the Series 2018 Senior Lien Bonds for audit, or the course or result of such audit, or an audit of tax-exempt obligations presenting similar tax issues may affect the market price for, or the marketability of, the Series 2018 Senior Lien Bonds, and may cause the Authority or the beneficial owners to incur significant expense.

Bond Counsel's opinions represent its legal judgment based in part upon the representations and covenants referenced therein and its review of existing law, but are not a guarantee of result or binding on the IRS or the courts. Bond Counsel assumes no duty to update or supplement its opinions to reflect any facts or circumstances that may come to Bond Counsel's attention after the date of its opinions or to reflect any changes in law or the interpretation thereof that may occur or become effective after such date.

TRAFFIC CONSULTANT

The Authority engaged CDM Smith to conduct a study to estimate traffic statistics and toll revenues based on a proposed increase in its toll rates. Their study is attached hereto as "APPENDIX D – TRAFFIC AND REVENUE STUDY."

CONSULTING ENGINEER

The Authority engages HNTB to conduct annual studies of the physical condition and operations of the Turnpike and to prepare a report of the results of their study. The latest report of the Consulting Engineer is attached hereto as "APPENDIX E – CONSULTING ENGINEER'S REPORT."

FINANCIAL ADVISOR

Public Resources Advisory Group, New York, New York, is serving as Financial Advisor in connection with the issuance of the Series 2018 Senior Lien Bonds. The Financial Advisor is an independent advisory firm and is not engaged in the business of underwriting, trading, or distributing municipal securities or other public securities. The Financial Advisor is not obligated to undertake to make an independent verification of, or to assume responsibility for the accuracy, completeness or fairness of the information contained in the Official Statement.

UNDERWRITING

Wells Fargo Bank, National Association, on behalf of itself and the Underwriters identified on the cover page of this Official Statement have agreed to purchase the Series 2018 Senior Lien Bonds at an aggregate purchase price of $183,917,231.88 (par amount of $166,370,000 plus net original issue premium of $17,954,195.20 and less an Underwriters' discount of $406,963.32), pursuant to a bond purchase agreement between the Authority and Wells Fargo Bank, National Association, on behalf of itself and the Underwriters identified on the cover page of this Official Statement. The Underwriters may offer and sell the Series 2018 Senior Lien Bonds to certain dealers (including dealers depositing such Series 2018 Senior Lien Bonds into investment trusts) and others at prices lower than the public offering price stated on the cover page hereof. The Underwriters will purchase all the Series 2018 Senior Lien Bonds if any are purchased. The public offering price set forth on the cover page hereof may be changed after the initial offering by the Underwriters.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial 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 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 and equity 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 activated may involve securities and instruments 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 Products 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.

Wells Fargo Bank, National Association, acting through its Municipal Products Group ("***WFBNA***"), the senior underwriter of the Series 2018 Senior Lien Bonds, has entered into an agreement (the "***WFA Distribution Agreemen***t") 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 2018 Senior Lien Bonds. Pursuant to the WFA Distribution Agreement, WFBNA will share a portion of its underwriting or remarketing agent compensation, as applicable, with respect to the Series 2018 Senior Lien 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 2018 Senior Lien 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.

J.P. Morgan Securities LLC ("***JPMS***"), one of the Underwriters of the 2018 Senior Lien Bonds, has entered into negotiated dealer agreements (each, a "***Dealer Agreement***") 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 2018 Senior Lien Bonds from JPMS at the original issue price less a negotiated portion of the selling concession applicable to any 2018 Senior Lien Bonds that such firm sells.

Piper Jaffray & Co. ("***Piper***"), one of the Underwriters of the 2018 Senior Lien Bonds, has entered into a distribution agreement ("***Piper Distribution Agreement***") with CS&Co. for the retail distribution of certain securities offerings, including the 2018 Senior Lien Bonds, at the original issue prices. Pursuant to the Piper Distribution Agreement, CS&Co. will purchase 2018 Senior Lien Bonds from Piper at the original issue price less a negotiated portion of the selling concession applicable to any 2018 Senior Lien Bonds that CS&Co. sells.

RATINGS

S&P Global Ratings, a division of Standard & Poor's Financial Services LLC ("***S&P***") and Fitch Ratings, Inc. ("***Fitch***") have assigned ratings of "AA-" and "AA-", respectively, each with a stable outlook, with respect to the Series 2018 Senior Lien Bonds based on the financial strength of the Authority. Any desired explanation of the significance of such ratings should be obtained from S&P or Fitch, respectively. Certain information and materials, including information and materials not included in this Official Statement, were furnished by the Authority and the State to S&P and Fitch. Generally, S&P and Fitch base their respective rating 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 and that it will not be lowered or withdrawn entirely if, in the judgment of S&P or Fitch, as the case may be, circumstances so warrant. The Underwriters have undertaken no responsibility either to bring to the attention of the Owners of the Series 2018 Senior Lien Bonds any proposed revision or withdrawal of any rating of the Series 2018 Senior Lien Bonds or to oppose any such proposed revision or withdrawal. Any such change in or withdrawal of such rating could have an adverse effect on the market price or the marketability of the Series 2018 Senior Lien Bonds. See "RISK FACTORS" herein.

CONTINUING DISCLOSURE

To comply with the requirements of Rule 15c2-12 (the "***Rule***") promulgated by the Securities and Exchange Commission, the Authority will enter into a Disclosure Dissemination Agent Agreement (the "Continuing Disclosure Agreement") with Digital Assurance Certification, L.L.C. ("***DAC***"), as the dissemination agent on behalf of the Authority, for the benefit of the registered and beneficial owners of the Series 2018 Senior Lien Bonds, pursuant to which the Authority will covenant to provide to DAC (a) certain annual financial information of the Authority not later than December 31 of the calendar year following the end of each fiscal year of the State, commencing with the report for the fiscal year ending June 30, 2018 (which is due December 31, 2018), and (b) notice of certain events within ten (10) business days of the occurrence of any of the events. DAC will file such annual financial information and such notices with the Municipal Securities Rulemaking Board (the "***MSRB***"), which operates the Electronic Municipal Markets Access ("***EMMA***") system for municipal securities disclosures. The information to be provided on an annual basis, the events which will be noticed on an occurrence basis and the other terms of the Continuing Disclosure Agreement are set forth in "APPENDIX F – FORM OF CONTINUING DISCLOSURE AGREEMENT."

The sole remedy for a breach or default under the Continuing Disclosure Agreement is an action to compel specific performance of the parties' obligations under the Continuing Disclosure Agreement. A breach or default under the Continuing Disclosure Agreement shall not constitute a default on the Series 2018 Senior Lien Bonds, an Event of Default under the Indenture, or a default under any other document relating to the Series 2018 Senior Lien Bonds.

The Authority has failed to comply with certain of its existing annual disclosure requirements in connection with the Prior Bonds. Under the Authority's existing continuing disclosure agreement entered into in connection with its Series 2002 Bonds, the remaining maturities of which were legally defeased on July 18, 2018, the Authority was obligated to file its annual financial information within 150 days of its fiscal year end. Its annual financial information consists of its audited financial statements or its unaudited financial statements if its annual audited financial statements are not available at the time of the reporting deadline. The Authority failed to timely file its annual financial information for its fiscal years ended June 30, 2017, 2016, 2015, 2014 and 2013. The Authority filed its annual financial information for its fiscal years ended June 30, 2013 and June 30, 2014, on March 11, 2015. The Authority filed its annual financial information for its fiscal year ended June 30, 2015, on February 3, 2016. The Authority filed its annual financial information for its fiscal year ended June 30, 2016, on January 9, 2017. On March 15, 2018 the Authority filed on EMMA a notice of failure to timely file its annual financial information for the fiscal year ended June 30, 2017, and also filed its annual financial information on EMMA that same day. On July 13, 2018, the Authority filed on EMMA notices of failure to timely file its annual financial information for fiscal years 2013 through 2016.

Additionally, under its continuing disclosure agreement related to the 2002 Bonds, the Authority failed to file three notices of ratings downgrades of the insurer of its 2002 Bonds, National Public Finance Guarantee Corporation (as assignee of MBIA Inc.), which ratings were downgraded by Moody's on May 21, 2014 and by S&P on March 18, 2014 and on June 26, 2017.

The Authority was also obligated under its continuing disclosure agreement related to its Series 2008 Bonds, which were redeemed on July 18, 2018, to file a notice of termination of its obligations under such agreement upon the legal defeasance, prior redemption or payment in full of such bonds. On July 21, 2011, the Authority filed a notice on EMMA that the Series 2008 Bonds were subject to mandatory tender on July 26, 2011, due to the expiration of the liquidity facility supporting such bonds. However, the Authority failed to subsequently file a notice of termination of its obligations under the continuing disclosure agreement entered into in connection with its Series 2008 Bonds when the Series 2008 Bonds were tendered and privately placed with Wells Fargo Bank, N.A on July 26, 2011. On July 13, 2018, the Authority filed said notice of termination on EMMA.

To ensure full compliance in the future with all of its continuing disclosure undertakings, the Authority has adopted its Debt and Capital Planning Management Policy (see "THE AUTHORITY – Financial Policies and Guidelines" herein), and also expects to adopt separate written continuing disclosure compliance policies and procedures on or about August 9, 2018, which will require the Authority comply with all applicable securities laws and satisfy in a timely manner all contractual obligations undertaken pursuant to continuing disclosure agreements or otherwise. The policy will also require the Authority to identify key personnel responsible for ensuring timely and complete filings are made with EMMA and will address training and document retention related to continuing disclosure obligations.

MISCELLANEOUS

So far as any statements made in this Official Statement involve matters of opinion or estimates, whether or not expressly stated, they are set forth as such and not as representations of fact, and no representation is made that any of such statements will be realized. Neither this Official Statement nor any statement, which may have been made orally or in writing, is to be construed as a contract with the owners of the Series 2018 Senior Lien Bonds.

Copies in reasonable quantity of the Indenture and other documents referenced herein may be obtained during the offering period from the Authority at 3310 Piedmont Road, Charleston, West Virginia 25306, Attn: Finance Director, or by calling (304) 926-1900 for more information.

WEST VIRGINIA PARKWAYS AUTHORITY

By /s/ Jim Justice
Its Chairman

APPENDIX A

FORM OF MASTER TRUST INDENTURE AND FIRST SUPPLEMENTAL INDENTURE

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Master Trust Indenture

by and between

West Virginia Parkways Authority

and

United Bank,
as Trustee

authorizing and securing

Turnpike Toll Revenue Bonds

Dated as of August 1, 2018

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MASTER TRUST INDENTURE

This MASTER TRUST INDENTURE (this "***Indenture***"), dated as of August 1, 2018, by and between the West Virginia Parkways Authority (the "***Authority***"), a public body corporate and politic and instrumentality of the State of West Virginia created and existing under the Constitution and Laws of West Virginia, and United Bank (the "***Trustee***"), a Virginia banking corporation having the powers of a trust company and having a corporate trust office in Charleston, West Virginia, as Trustee, under the circumstances summarized in the following recitals. Capitalized terms used but not defined in the recitals and granting clauses shall have the meanings given to such capitalized terms in Section 101 hereof.

WHEREAS, Article 16A, Chapter 17 of the Code of West Virginia, 1931, as amended (the "***Act***"), empowers the Authority to construct, reconstruct, improve, maintain, repair, and operate parkway projects within the State and empowers the Authority to issue bonds to provide for the costs of paying all or any part of any one or more such projects;

WHEREAS, under Section 5 of the Act, "parkway projects" include existing or new projects to be constructed, reconstructed, improved, maintained, repaired, and operated by the Authority during the term of this Indenture, either on the Turnpike ("***On-Turnpike Authority Projects***") or as special Authority projects, as well as certain projects to be constructed, reconstructed, improved, maintained, repaired, and operated by the West Virginia Division of Highways, a division of the West Virginia Department of Transportation ("***WVDOH***") that are located (a) off the Turnpike and (b) in ten specific counties identified in the Act that include the four counties through which the Turnpike runs and six counties contiguous to said four counties, to the extent allowed under the Act and applicable federal laws ("***Off-Turnpike WVDOH Projects***," and collectively with On-Turnpike Authority Projects and special Authority projects, "***Parkway Projects***");

WHEREAS, this Indenture is being adopted for the purposes of: (A) providing for the issuance by the Authority of Turnpike Toll Revenue Bonds in one or more Series, from time to time, on the terms set forth herein (collectively, the "***Bonds***") for the purpose of financing Parkway Projects, to pay the costs of issuance of any such Bonds, to fund applicable reserve requirements, and to fund or pay for any other costs or expenses permitted under the Act; (B) pledging the Net Toll Road Revenues and any other such revenues as are permitted by the Act for the payment of the Bonds; (C) pledging such funds and accounts created and held pursuant to the Indenture and any supplemental indenture as are identified as being pledged for the payment of the Bonds and are subjected to the lien of this Indenture; (D) providing the manner in which such other revenues as are now or hereafter permitted by the Act to be so pledged, may be pledged for the payment of the Bonds; and (E) making other covenants and agreements and providing other details with respect to the Bonds, subject to and in accordance with the terms hereof;

WHEREAS, pursuant to the Act, the Authority on June 7, 2018 adopted a Resolution that, among other things, authorized this Authority to enter into this Indenture and to issue the initial series of Bonds under this Indenture; and

WHEREAS, additional terms of each Series of Bonds will be specified in a Supplemental Indenture adopted as provided herein in connection with the issuance of such Series.

NOW, THEREFORE, THIS INDENTURE WITNESSETH: In consideration of the premises, the acceptance by the Trustee of the trusts hereby created, and of the purchase and acceptance of each Series of Bonds by the Holders thereof, and for the purpose of fixing and declaring the general terms and conditions upon which the Bonds are to be issued, authenticated, delivered, secured and accepted by all persons who shall from time to time be or become Holders thereof, and to secure the payment of each Series of Bonds at any time issued and Outstanding hereunder and the interest and premium, if any, thereon according to their tenor, purport and effect, and to grant certain rights to the applicable Credit Providers, if any (but only if, and to the extent, provided in a Supplemental Indenture granting such rights to applicable Credit Providers) and to secure the performance and observance of all of the covenants, agreements and conditions contained therein and herein or in any Reimbursement Agreement (but only if, and to the extent, provided in a Supplemental Indenture relating to any Reimbursement Agreement), the Authority does hereby grant and confirm a security interest in, and does confirm, assign, transfer, pledge and grant and convey unto the Trustee and its successors and assigns forever, for the benefit of the Bondholders and each Credit Provider, if any (but only if, and to the extent, provided in a Supplemental Resolution granting such rights to applicable Credit Providers), until the applicable credit enhancement or liquidity support is no longer outstanding and no amounts are due under the applicable Reimbursement Agreement (but only if, and to the extent, provided in a Supplemental Indenture relating to any Reimbursement Agreement), the following property:

A. Amounts constituting Net Toll Road Revenues;

B. Amounts on deposit from time to time in the Funds and the Accounts created pursuant hereto and expressly made subject to the pledge of this Indenture under Article IV, including the earnings thereon, subject to the provisions of this Indenture permitting the application thereof for the purposes and on the terms and conditions set forth herein, provided, however, that there expressly is excluded from any pledge, assignment, lien or security interest created by this Indenture (i) amounts in the Operation and Maintenance Account within the Operation and Maintenance Fund, (ii) amounts in the Arbitrage Rebate Fund, and (iii) amounts in the General Fund (though such General Fund monies may be expended by the Authority to restore deficiencies in any funds or accounts created under the Indenture); and

C. Any and all other property of any kind from time to time hereafter by delivery or by writing of any kind specifically conveyed, pledged, assigned or transferred, as and for additional security hereunder for the Bonds, by the Authority or by anyone on its behalf or with its written consent in favor of the Trustee, which is hereby authorized to receive any and all such property at any and all times and to hold and apply the same subject to the terms hereof (collectively, the "***Trust Estate***").

TO HAVE AND TO HOLD all such properties pledged, assigned and conveyed by the Authority hereunder, including all additional property which by the terms hereof has or may become subject to the encumbrance hereof, unto the Trustee and its successors in trust and its assigns forever, subject, however, to the rights reserved hereunder.

IN TRUST NEVERTHELESS, for the equal and proportionate benefit and security of the Holders from time to time of all Bonds issued, authenticated, delivered and outstanding hereunder, without preference, priority or distinction as to lien or otherwise of any of such Bonds over any other such Bonds, except to the extent otherwise provided in Section 103.

PROVIDED, HOWEVER, that if the Authority shall pay fully and promptly when due all liabilities, obligations and sums at any time secured hereby or provide for the payment thereof in accordance with the provisions hereof, and shall promptly, faithfully and strictly keep, perform and observe or cause to be kept, performed and observed all of its covenants, warranties and agreements contained herein and in each Reimbursement Agreement, if any, then and in such event, except for the provisions of Article IX hereof, as applicable, this Indenture shall be and become void and of no further force and effect; otherwise, the same shall remain in full force and effect, and upon the trusts and subject to the covenants and conditions hereafter set forth.

THIS INDENTURE FURTHER WITNESSETH: It is expressly declared that all Bonds are to be issued, authenticated and delivered and all said property, rights, and interest, including, without limitation, the revenues and other amounts hereby assigned and pledged are to be dealt with and disposed of under, upon and subject to the terms, conditions, stipulations, covenants, agreements, trusts, uses, and purposes as hereinafter expressed, and the Authority has agreed and covenanted, and does hereby agree and covenant with the Trustee and with the respective Holders of the Bonds, and as provided herein for the benefit of applicable Credit Providers, if any (but only if, and to the extent, provided in a Supplemental Resolution granting such rights to applicable Credit Providers), and to secure further the performance and observance of all of the covenants, agreements and conditions contained therein and herein or in any Reimbursement Agreement (but only if, and to the extent, provided in a Supplemental Indenture relating to any Reimbursement Agreement), and has further agreed and covenanted, and does hereby further agree and covenant, as follows:

ARTICLE I
DEFINITIONS; RULES OF CONSTRUCTION

Section 101. Definitions.

In addition to terms elsewhere defined in this Indenture, the following terms, for all purposes of this Indenture, shall have the following meanings unless a different meaning clearly applies from the context:

"**Account**" means any account or subaccount created in any Fund created hereunder or under a Supplemental Indenture.

"**Accreted Value**" means (a) with respect to any Capital Appreciation Bonds, as of any date of calculation, the sum of the amount set forth in a Supplemental Indenture as the amount representing the initial principal amount of such Capital Appreciation Bonds plus the interest accumulated, compounded and unpaid thereon as of the most recent compounding date, the Accreted Value shall be determined in accordance with the provisions of the Supplemental Indenture authorizing the issuance of such Capital Appreciation Bonds.

"Act" means Chapter 17, Article 16A, of the Code of West Virginia, 1931, as amended.

"**Agency Obligations**" means senior debt obligations, including bonds, notes and other evidences of indebtedness, of U.S. government-sponsored agencies, corporations, and enterprises that are not backed by the full faith and credit of the U.S. government, including, but not limited to, Federal Home Loan Mortgage Corporation debt obligations, Farm Credit System consolidated system wide bonds and notes, Federal Home Loan Banks consolidated debt obligations, Federal National Mortgage Association debt obligations, Student Loan Marketing Association debt obligations, Tennessee Valley Authority debt obligations, Resolution Funding Corporation debt obligations (including principal and interest strips), and U.S. Agency for International Development guaranteed notes (including stripped securities).

"**Annual Budget**" means for any Fiscal Year the annual budget adopted by the Authority under Section 508 as may be amended from time to time as permitted by Section 508, which annual budget shall set forth, at a minimum, (a) the estimated Toll Road Revenues, (b) Operation and Maintenance Expenses, (c) the Annual Debt Service (identifying principal and interest components thereof), and (d) the Renewal and Replacement Reserve Fund Requirement, respectively, for such Fiscal Year under Section 508, **provided, however**, that, without limitation of the requirements of Section 508, such annual budget and any amended annual budget shall include and provide for amounts that, in the judgment of the Consulting Engineers, are necessary to be included in and spent on (a) Operation and Maintenance Expenses and (b) Renewal and Replacement Costs, respectively, for such Fiscal Year, which shall be memorialized in a certificate to be provided by the Consulting Engineers to the Authority as part of the annual budget-making process as required by Section 508, which certificate shall be included with and be made a part of the Annual Budget.

"Annual Debt Service" means for any Annual Period and with respect to Outstanding Bonds, or all Senior Lien Bonds or Subordinate Lien Bonds, respectively, (i) the principal amount and interest paid (except at the option of the Authority) or payable with respect to such Bonds in such Annual Period, plus (ii) Credit Facility Payment Obligations paid or payable in such Annual Period, plus (iii) the net amount (which may be negative) of (x) all Regularly Scheduled Hedge Payments in such Annual Period, less (y) all Regularly Scheduled Hedge Receipts in such Annual Period, minus (iv) all amounts that are deposited to the credit of a debt service fund or account for the payment of capitalized interest or the payment of principal due or to be due and interest due in such Annual Period on Bonds that are used or scheduled to be used to pay interest on such Bonds during any Annual Period, and minus (v) any portion or all of the interest on or principal of the Bonds that has been irrevocably committed by the Authority to be paid from funds on hand other than Toll Road Revenues, including without limitation, (A) any security deposited and pledged for such purpose by the terms of an escrow deposit agreement or similar agreement, (B) any supplemental security pledged for such purpose by the terms of a Supplemental Indenture, or (C) other supplemental security irrevocably pledged in any other manner for such purpose; provided that if there is a balance in a Series Account for a Series of Bonds, or a balance in a composite Account, within the Debt Service Reserve Fund, then in calculating Annual Debt Service as to the Annual Period in which the final maturity or maturities of such Bonds will occur, such balance shall be subtracted from such stated maturity amount(s).

The following shall be used to calculate the Annual Debt Service for any Annual Period:

(a) Except as otherwise provided below, in determining the principal amount paid or payable with respect to Bonds or Credit Facility Payment Obligations in each Annual Period, payment shall be deemed to be made in accordance with any amortization schedule established for such Obligations to which the Authority is legally committed, including amounts paid or payable pursuant to any mandatory redemption schedule for such Bonds or Credit Facility Payment Obligations;

(b) If any of the Bonds constitute Balloon Indebtedness Bonds or Short-Term/Demand Obligations, then such amounts shall be treated as if such Bonds or Short-Term/Demand Obligations, are refunded through the issuance of Long Term Obligations on the date of the earliest permitted exercise of the put feature, stepped up interest rate and call feature or similar obligation or right to refund a series of Balloon Indebtedness Bonds, or if no such feature exists, then on the final maturity date of such Balloon Indebtedness Bonds or Short-Term/Demand Obligations. Such Long-Term Obligations shall be assumed to bear interest at a fixed interest rate estimated by the Authority's Financial Advisor or underwriter to be the estimated rate of interest for a series of such Long-Term Obligations issued to accomplish such refunding if issued on such terms on the date of such estimate;

(c) Notwithstanding subsections (b) or (f) of this definition of "Annual Debt Service," to the extent required by a Supplemental Indenture, if any of the Bonds are authorized to be issued under a direct purchase note program, such amounts shall be treated as if all of the Obligations committed to be purchased under a note purchase agreement are outstanding as of the date of calculation and continuously refinanced under such note purchase agreement until the termination date of the commitment to purchase notes under a note purchase agreement, at which time it shall be assumed that the commitment shall be amortized in the manner set forth in subsection (b), above.

(d) Notwithstanding subsections (b) or (f) of this definition of "Annual Debt Service," to the extent required by a Supplemental Indenture, if any of the Bonds are authorized to be issued pursuant to a commercial paper program, Annual Debt Service shall be computed on the assumption that the principal amount shall continuously be refinanced under such program and remain outstanding until the first Annual Period for which interest on such Bonds has not been capitalized or otherwise provided for in such commercial paper program, at which time (which shall not be beyond the term of such program) it shall be assumed that the outstanding principal amount shall be amortized in the manner provided in subsection (b), above.

(e) As to any Annual Period prior to the date of any calculation, such requirements shall be calculated solely on the basis of Bonds that were Outstanding in such period, and as to any future Annual Period such requirements shall be calculated solely on the basis of Bonds Outstanding as of the date of calculation plus any Bonds then proposed to be issued;

(f) If any of the Bonds or proposed Bonds constitute Variable Rate Bonds, then, if the actual rate of interest borne thereby in any future Annual Period cannot be ascertained at the time of the calculation and subject to subsection (b) of this definition and the following proviso, interest in future Annual Periods shall be assumed to be the Assumed Variable Rate; provided, however, if the Authority has entered into a Hedge Facility with respect to a Series of Bonds constituting Variable Rate Bonds that provides for the Authority to pay a fixed interest rate thereunder and to receive a variable rate that is expected to approximate the rate of such Variable Rate Bonds during any future period, the fixed interest rate payable by the Authority under the Hedge Facility during such future period shall be assumed to be the interest rate on such Variable Rate Bonds if the notional amount under the Hedge Facility is equal to or greater than the Outstanding principal amount of the Variable Rate Obligations and reduces in the amounts and on the dates that such Bonds mature, but if such conditions are not met (for example, if the notional amount under the Hedge Facility is less than the Outstanding principal amount of the Variable Rate Obligations), then for the unhedged portion the fixed interest rate payable by the Authority on the Variable Rate Bonds during such future period shall be assumed to be the Assumed Variable Rate; and

(g) Collateral postings and termination or similar payments under a Hedge Facility shall not be taken into account in any calculation of Annual Debt Service.

(h) With respect to Outstanding Capital Appreciation Bonds, (i) in determining the amount of principal to be funded in each year payments shall (unless a different subsection of this definition applies for purposes of determining principal maturities or amortization), be assumed to be made on such Outstanding Bonds in accordance with any amortization schedule or amortization calculations established by the governing documents setting forth the terms of such Bonds, including, as a principal payment, the Accreted Value of any Capital Appreciation Bonds maturing or scheduled for redemption in such year; and (ii) in determining the amount of interest to be funded in each year (except to the extent any other subsection of this definition applies) interest payable at a fixed rate shall be assumed to be made at such fixed rate and on the required funding dates.

(i) Notwithstanding any other provision of this definition of "Annual Debt Service," with respect to any Balloon Indebtedness Bonds, any Variable Rate Bonds, any Short-

Term/Demand Obligations, any commercial paper program obligations, any Optional Tender Bonds, and any direct purchase bonds, if there is delivered to the Trustee a certificate of an Authority Authorized Officer stating (A) that the Authority intends to refinance such Bonds or obligations or any maturity thereof, (B) the probable terms of such refinancing and (C) that the debt capacity of the Authority is sufficient to successfully complete such refinancing then, upon the receipt of such certificate, such Balloon Indebtedness Bonds, Variable Rate Bonds, Short-Term/Demand Obligations, commercial paper program obligations, Optional Tender Bonds, and any direct purchase bonds, as the case may be, shall be assumed to be refinanced in accordance with the probable terms set out in such certificate and such terms shall be used for purposes of calculating Annual Debt Service; provided, that such assumption shall not result in an interest rate lower than the Assumed Variable Rate and shall be amortized over a term of not more than thirty (30) years from the expected date of refinancing.

"**Annual Period**" means a Fiscal Year or any other consecutive twelve-month period, where it shall mean either the most recent Fiscal Year or any other twelve consecutive calendar month period that ends not more than 90 days prior to the date of the then-proposed indebtedness or the date of a calculation contemplated by this Indenture or any Supplemental Indenture.

"**Arbitrage Rebate Fund**" means the Arbitrage Rebate Fund created pursuant to Section 401.

"**Assumed Variable Rate**" means the rate defined in a Supplemental Indenture authorizing the Series of Bonds in question based on a reasonable estimate of such rate, or if no such rate is defined, then "Assumed Variable Rate" shall mean:

(a) in the case of Outstanding Variable Rate Bonds, the average interest rate on such Variable Rate Bonds for the most recently completed Annual Period or if such Bonds have not been outstanding for a complete 12-month period, then an interest rate estimated by the Authority's Financial Advisor or underwriter to be the fixed rate of interest at which the Variable Rate Bonds could be refinanced and amortized over a period that corresponds with the useful life of the improvements financed with the proceeds of such Variable Rate Bonds, but not longer than thirty (30) years; or

(b) in the case of proposed Variable Rate Bonds, the interest rate estimated by the Authority's Financial Advisor or underwriter to be the fixed rate of interest at which the Variable Rate Bonds could be financed and amortized over a period that corresponds with the useful life of the improvements financed with the proceeds of such Variable Rate Bonds, but not longer than thirty (30) years.

Notwithstanding the foregoing, in no event shall the Assumed Variable Rate be in excess of the lesser of the maximum legal rate or the highest interest rate allowed by the documents pursuant to which such Variable Rate Bonds were issued.

"**Authenticating Agent**" means, with respect to each Series of Bonds, the entity or entities designated as such for such Series of Bonds in the applicable Supplemental Indenture.

"**Authority Authorized Officer**" means the Chairman, Vice Chairman, and General Manager of the Authority and, in the case of any act to be performed or duty to be discharged, any other member, officer, or employee of the Authority then authorized under then-current resolutions of the Authority to perform such act or discharge such duty, or such other person(s) as may be designated to act on behalf of the Authority by written certificate furnished to the Trustee containing the specimen signature(s) of such designated person(s) and signed on behalf of the Authority by the Chairman, Vice Chairman, or General Manager.

"**Authorized Depositary**" means any trust company or bank, or national banking association, which is eligible under the laws of the State to receive deposits of public funds, selected by the Authority as a depositary of moneys or securities, or both, qualified to do and do banking or trust business within or without the State and having an officially reported combined capital, surplus, undivided profits and reserves aggregating at least $50,000,000, if there is such an institution willing, qualified and able to accept deposits of moneys or securities, or both, upon reasonable or customary terms, and may, but need not, be the Trustee or any paying agent designated as such in any Supplemental Indenture.

"**Balloon Indebtedness Bonds**" means Bonds with 25% or more of the principal of which matures in a single Annual Period on the same date, which portion of the principal is not required by the documents governing the issuance of such Bonds to be amortized by payment or redemption prior to such date. If any issue of Bonds consists partially of Variable Rate Bonds and partially of Bonds bearing interest at a fixed rate, the portion constituting Variable Rate Bonds and the portion bearing interest at a fixed rate shall be treated as separate issues for purposes of determining whether any such Bonds constitute Balloon Indebtedness Bonds. For the avoidance of doubt, commercial paper, bond anticipation notes, Optional Tender Bonds, direct purchase notes, or other Short-Term/Demand Obligations that meet the preceding definition shall constitute and be treated as Balloon Indebtedness Bonds.

"**Beneficial Owners**" means, so long as the Bonds are registered in the name of the Securities Depository, the persons for whom the Participants acquire and hold interests in the Bonds as nominees and register such interests with the Securities Depository. At any time when there is no Securities Depository holding the Bonds, the Beneficial Owners shall be the registered owners.

"**Board**" means the governing board consisting of the members of the Authority.

"**Bond**" or "**Bonds**" means any of the Bonds to be authenticated and delivered pursuant to this Indenture or any Supplemental Indenture.

"**Bond Authorizing Resolution**" means a resolution adopted by the Authority authorizing the issuance of one or more Series of Bonds under this Indenture, authorizing the execution and delivery on behalf of the Authority of the related Supplemental Indenture or Supplemental Indentures and other related agreements and approving, or duly delegating the authority to approve on behalf of the Authority, the terms and details of such Series of Bonds. The term includes any resolution or other formal action taken on behalf of the Authority by any person, committee or other entity acting pursuant to a delegation from the Authority.

"**Bond Counsel**" means an attorney or firm or firms of attorneys of national recognition experienced in the field of municipal bonds whose opinions are generally accepted by purchasers of municipal bonds selected or employed by the Authority and reasonably acceptable to the Trustee.

"**Bond Fund**" means any Senior Lien Bond Fund and any bond fund established pursuant to any Supplemental Indenture.

"**Bond Payment Date**" means, with respect to each Series of Bonds, each date set forth in the applicable Supplemental Indenture with respect to such Series of Bonds on which interest is payable.

"**Bond Purchase Contract**" means the contract of purchase, with respect to a Series of Bonds, between the Authority and the Original Purchaser pertaining to the sale of such Series of Bonds.

"**Bondholder**" or "**Holder**" means the registered owner of any Senior Lien Bond or Subordinate Lien Bond.

"**Business Day**" means any day of the week other than Saturday, Sunday or a day which shall be, in the State of West Virginia, the State of New York or in the jurisdiction in which the Designated Office of the Trustee or the Registrar is located, a legal holiday or a day on which banking corporations are authorized or obligated by law or executive order to close.

"**Capital Appreciation Bonds**" means Bonds with all or a portion of the interest on which is compounded and accumulated at the Accreted Value and on the dates set forth in a Supplemental Indenture and is payable only upon redemption of such Bonds, the conversion date of such Bonds (if such Bonds are convertible), or on the maturity date of such Bonds.

"**Capital Costs**" means costs that are capitalized under the Authority's internal policies and procedures governing capital expenditures and are incurred for or in connection with the (a) acquisition or construction of assets of the Authority having an anticipated useful life of greater than one year, or (b) improvements that extend the anticipated useful life of assets by more than one year.

"**Chair**" means the Chair, or the Chair's designee, of the Board of the Authority.

"**Code**" means the Internal Revenue Code of 1986, as amended, including applicable Treasury Regulations, rulings and procedures promulgated thereunder or under the Internal Revenue Code of 1954, as amended.

"**Consulting Engineers**" means an independent engineer or engineering firm or corporation having a nationwide and favorable reputation for skill and experience in performing and carrying out the duties imposed on the Consulting Engineers by this Indenture and selected by the Authority for the purpose of performing and carrying out such duties.

"**Credit Facility**" or "**Credit Facilities**" means, with respect to a Series of Bonds, the letter of credit, line of credit, standby bond purchase agreement or other similar form of credit enhancement and/or liquidity support, if any, and may, without limitation, include direct purchase obligations, for such Series of Bonds, provided for in the applicable Supplemental

Indenture, including (i) any alternate Credit Facility with respect to such Series of Bonds delivered in accordance with provisions of the Supplemental Indenture providing for the issuance of such Series of Bonds and (ii) any related reimbursement agreement entered into with a Credit Provider, unless provided otherwise in the applicable Supplemental Indenture.

"**Credit Facility Payment Obligations**" means for any Annual Period the amounts of any payments the Authority is required to make to Credit Providers pursuant to Reimbursement Agreements with Credit Providers to reimburse such Credit Providers for debt service payments made, and to pay credit enhancement or liquidity support fees, in each case to the extent secured by this Indenture as specifically provided by a Supplemental Indenture, scheduled to come due within such Annual Period.

"**Credit Provider**" means, with respect to a Series of Bonds, the provider of a Credit Facility, including letter of credit, line of credit, standby bond purchase agreement or other form of credit enhancement and/or liquidity support, if any, for such Series of Bonds specified in the applicable Supplemental Indenture or Reimbursement Agreement.

"**Debt Service Reserve Fund**" means the Debt Service Reserve Fund for a given Series or lien level of Bonds, and therefore means, for Senior Lien Bonds, the Senior Lien Debt Service Reserve Fund created pursuant to Section 401, and means, for Subordinate Lien Bonds, such Debt Service Reserve Fund as may be created with respect to Bonds issued pursuant to a Supplemental Indenture.

"**Debt Service Reserve Requirement**" means the amount, if any, required to be on deposit in a Series or composite Account in the Senior Lien Debt Service Reserve Fund, Subordinate Lien Debt Service Reserve Fund, or any other Debt Service Reserve Fund, as applicable, which amount may be provided by means of a DSRF Credit Facility, all as specified in the Supplemental Indenture governing the issuance of and securing the related Series of Bonds.

"**DSRF Credit Facility**" means a letter of credit, surety bond or similar credit enhancement facility acquired by the Authority from, or reimbursement agreement entered into by the Authority with, a financial institution (including, without limitation, any bank, trust company, insurance company, or broker-dealer) with a long-term credit rating at the time of issuance of such facility in the third highest rating category or higher by any Rating Agency, to substitute for cash or investments required to be held in a Debt Service Reserve Fund for any Series of Bonds pursuant to the Supplemental Indenture relating to and governing the issuance of such Series of Bonds.

"**DSRF Credit Provider**" means the financial institution providing, and qualified under the definition of, a DSRF Credit Facility.

"**DTC**" means The Depository Trust Company, New York, New York.

"**Event of Default**" means any one or more of those events set forth in Section 601.

"**Financial Advisor**" means a firm experienced in, and having a favorable national reputation for, providing financial advisory services to issuers of tax-exempt municipal bonds, that has been engaged by the Authority to provide independent financial advisory services to the Authority and serve as an independent advisor.

"**Fiscal Year**" means the fiscal year of the Authority ending as of June 30 of each year or such other date as may be designated from time to time in writing by the Authority to the Trustee.

"**Fitch**" means Fitch Ratings, Inc., a corporation organized and existing under the laws of the State of Delaware, its successors and assigns, and if such corporation shall no longer perform the functions of a municipal securities rating agency, "Fitch" means any other nationally recognized municipal securities rating agency designated by the Authority.

"**Fund**" means any fund created hereunder or under a Supplemental Indenture.

"**Funding Date**" means the last Business Day immediately preceding any Interest Payment Date or Principal Payment Date.

"**General Manager**" means the General Manager of the Authority.

"**Government Obligations**" means direct, general obligations of, or obligations the timely payment of principal and interest on which are unconditionally guaranteed by, the United States of America.

"**Hedge Facility**" means any rate swap transaction, basis swap transaction, cap transaction, floor transaction, collar transaction, currency swap transaction, forward payment conversion agreement, or similar transaction, which is intended to convert or limit the interest rate payable with respect to any Bonds, and which (a) is designated in writing to the Trustee by an Authority Authorized Officer as a Hedge Facility to relate to all or part of one or more Series of Bonds; (b) is with a Qualified Hedge Provider or an entity that has been a Qualified Hedge Provider, in either instance identified in writing to the Trustee, within the 60 day period preceding the date on which the calculation of Annual Debt Service or Maximum Annual Debt Service is being made; and (c) has a term not greater than the term of the designated Bonds or a specified date for mandatory tender or redemption of such designated Bonds.

"**Hedge Termination Payment**" means an amount payable by the Authority or a Qualified Hedge Provider, in accordance with a Hedge Facility, to compensate the other party to the Hedge Facility for any losses and costs that such other party may incur as a result of an event of default or the early termination of the obligations, in whole or in part, of the parties under such Hedge Facility.

"**Indenture**" means this Master Trust Indenture, and when amended or supplemented, such Indenture, as amended or supplemented from time to time.

"**Interest Account**" means any interest account for a Series of Bonds created in the Senior Lien Bond Fund pursuant to Section 401 or other Series of Bonds created pursuant to any Supplemental Indenture.

"**Long-Term Obligations**" means Bonds or other indebtedness that is amortized over a 30-year period, or such other period for level annual payments of principal and interest or such other period and payment structure as set forth in a Supplemental Indenture, not to exceed in any case the maximum period permitted by law.

"**Maximum Annual Debt Service**" means (a) when used with reference to a Series of Bonds, the maximum Annual Debt Service with respect to the specified Series of Bonds for any Annual Period during the term of such indebtedness, and (b) when used with reference to all Outstanding Bonds, or all Outstanding Bonds of a particular lien position, the maximum Annual Debt Service with respect to all the applicable Outstanding Bonds.

"**Memorandum of Understanding**" means a Memorandum of Understanding referenced, and further defined, in a Supplemental Indenture authorizing a Series of Bonds, that is entered into by and between the Authority, the Trustee, the Treasurer of the State of West Virginia, and WVDOH, establishing procedures for the Authority's use of (and the ultimate expenditure by WVDOH of) proceeds of such Series of Bonds that are proceeds designated by the Authority (with input of WVDOH) to be deposited into that certain special revenue account in the State Treasury (which special revenue account is not part of the State's General Revenue Fund) known as the "State Road Construction Account" created pursuant to Section 17-16A-11 of the Act and held in the State Treasury to be expended ultimately by WVDOH for the construction, maintenance and repair of Off-Turnpike WVDOH Projects as provided in the Act.

"**Moody's**" means Moody's Investors Service, Inc., a corporation existing under the laws of the State of Delaware, its successors and assigns, and, if such corporation shall no longer perform the functions of a municipal securities rating agency, "Moody's" shall mean any other nationally recognized municipal securities rating agency designated by the Authority.

"**Net Toll Road Revenues**" means Toll Road Revenues less Operation and Maintenance Expenses.

"**Operation and Maintenance Account"** means the Operation and Maintenance Account created, within the Operation and Maintenance Fund, under Section 401(a) to be used and administered as provided in Section 405 and to be funded as further provided in Article IV including without limitation Section 414.

"Operation and Maintenance Expenses" means expenses for operation, maintenance, repairs, ordinary acquisition of equipment, and any other current expenses or obligations required to be paid by the Authority under or pursuant to the provisions of this Indenture, any Supplemental Indenture, or by law, all to the extent properly and directly attributable to the operation of the Turnpike, but not any costs or expenses for new construction or any allowance for depreciation. Operation and Maintenance Expenses may include, without limitation (but subject to the preceding sentence, including but not limited to the condition that such expenses are properly and directly attributable to the operation of the Turnpike): (a) salaries, supplies, equipment, utilities, labor, travel and rent; (b) fees and expenses for data processing, policing, insurance, legal, accounting, engineering, consulting and banking services; and (c) payments to pension, retirement, health and hospitalization funds for Authority employees. Without limitation of the foregoing, Operation and Maintenance Expenses shall include costs of toll collection and enforcement, including without limitation the costs of purchasing transponders for use in the toll collection system for the Turnpike and the costs of issuing transponders to customers of the Turnpike.

"Operation and Maintenance Fund" means the Operation and Maintenance Fund created under Section 401(a) to be used and administered as provided in Section 405 and to be funded as provided in Article IV including without limitation Section 414.

"**Operation and Maintenance Reserve Account"** means the Operation and Maintenance Reserve Account created, within the Operation and Maintenance Fund, under Section 401(a) to be used and administered as provided in Section 405 and to be funded as provided in Article IV including without limitation Section 414.

"**Operation and Maintenance Reserve Account Requirement"** means one-sixth (1/6th) of the Operation and Maintenance Expenses for the Turnpike set forth in the Authority's current Fiscal Year budget.

"**Opinion of Bond Counsel**" means a written opinion of Bond Counsel.

"**Opinion of Counsel**" means a written opinion of an attorney or firm or firms of attorneys acceptable to the Trustee and the Authority, and who (except as otherwise expressly provided herein) may be either counsel for the Authority or for the Trustee.

"**Optional Tender Bonds**" means any Bond required to be purchased or redeemed at the option of its owner if the purchase or redemption price thereof is payable from the Toll Road Revenues or by a Credit Facility Provider or by a liquidity facility provider.

"**Original Issue Discount Bonds**" means Bonds which are sold at an initial public offering price of less than face value and which are specifically designated as Original Issue Discount Bonds by the Supplemental Indenture under which such Bonds are issued.

"**Original Purchaser**" means the person or entity designated in each Bond Purchase Contract as the initial purchaser or purchasers of a Series of Bonds or, if so designated in such Bond Purchase Contract, the representatives or lead or managing underwriters of such initial purchasers.

"**Outstanding**" when used with reference to a Series of Bonds means, as of any date of determination, all Bonds of such Series theretofore authenticated and delivered except: (a) Bonds of such Series theretofore cancelled by the Trustee or delivered to the Trustee for cancellation; (b) Bonds of such Series which are deemed paid and no longer Outstanding as provided in this Indenture; (c) Bonds of such Series in lieu of which other Bonds of such Series have been issued pursuant to the provisions of this Indenture relating to Bonds destroyed, stolen or lost, unless evidence satisfactory to the Trustee has been received that any such Bond is held by a bona fide purchaser; (d) after any tender date as may be provided for in the applicable Supplemental Indenture, any Bond of such Series held by a Bondholder who has given a tender notice or was required to tender such Bond in accordance with the provisions of the applicable Supplemental Indenture and which was not so tendered and for which sufficient funds for the payment of the purchase price of which have been deposited with the Trustee or the Paying Agent, if any, or any tender agent appointed under such Supplemental Indenture; and (e) for purposes of any consent or other action to be taken under this Indenture by the Holders of a specified percentage of principal amount of Bonds of a Series or all Series, Bonds held by or for the account of the Authority.

"**Parkway Projects**" has the meaning provided in the Act.

"**Parkway Projects Fund**" means the Parkway Project Fund created pursuant to Section 401.

"**Participant**" or "**Participants**" means the participating underwriters, securities brokers or dealers, banks, trust companies, closing corporations or other persons for which the Securities Depository holds the Bonds.

"**Paying Agent**" means, with respect to each Series of Bonds, the banks or trust companies, if any, and their successors designated in the applicable Supplemental Indenture as the paying agent for such Series of Bonds.

"**Paying Agent Agreement**" means the agreement entered into by and between the Trustee and the Paying Agent pursuant to Section 713.

"**Payment of a Series of Bonds**" means payment in full of all principal of, purchase price of, if applicable, premium, if any, and interest on a Series of Bonds.

"**Permitted Investments**" means and includes any of the following, if and to the extent, the same are at the time legal for the investment of the Authority's money:

(a) Government Obligations, including (in the case of direct, general obligations) evidences of ownership of proportionate interests in future interest or principal payments of such obligations. Investments in such proportionate interests must be limited to circumstances wherein (i) a bank or trust company acts as custodian and holds the underlying Government Obligations; (ii) the owner of the investment is the real party in interest and has the right to proceed directly and individually against the obligor of the underlying Government Obligations; and (iii) the underlying Government Obligations are held in a special subaccount, segregated from the custodian's general assets, and are not available to satisfy any claim of the custodian, any person claiming through the custodian, or any person to whom the custodian may be obligated;

(b) Agency Obligations;

(c) Bonds, notes and other evidences of indebtedness of the State of West Virginia and securities unconditionally guaranteed as to the timely payment of principal and interest by the State of West Virginia;

(d) Bonds, notes and other evidences of indebtedness that are direct general obligations of any county, city, town, district, authority or other public body of the State of West Virginia upon which there is no default, and revenue bonds issued by agencies or authorities of the State of West Virginia or its political subdivisions upon which there is no default, which in either case are rated “Aaa” by Moody’s, “AAA” by Standard & Poor’s or “AAA” by Fitch;

(e) Time deposits, certificates of deposit or other interest-bearing accounts of any commercial bank within the State of West Virginia that is approved for the deposit of funds of the State of West Virginia or any political subdivision thereof, provided that such investments are fully insured by the Federal Deposit Insurance Corporation or any successor Federal agency;

(f) Savings accounts and certificates of savings and loan associations which are under the supervision of the State of West Virginia and are approved for the deposit of funds of the State of West Virginia or any political subdivision thereof, or Federal associations organized under the laws of the United States of America which are under Federal supervision that are approved for deposit of funds of the State of West Virginia or any political subdivision thereof, provided that such investments are fully insured by the Savings Association Insurance Fund of the Federal Deposit Insurance Corporation or any successor Federal agency;

(g) Investments in the West Virginia Board of Treasury Investments investment pool, provided that such fund is rated, at the time of purchase in the highest two rating categories by S&P, Moody’s or Fitch ratings;

(h) Investments in a money market fund rated “Aaa” by Moody’s or “AAAm” or “AAAm-G” or better by S&P, including those for which the Trustee or an affiliate receives and retains a fee for services provided to the fund, whether as a custodian, transfer agent, investment advisor or otherwise; and

(i) Any other investment authorized for investment of public sinking funds under the laws of the State.

Any investments described in subsections (a) and (b) of this definition may be held directly or in the form of securities of any open-end or closed-end management company or investment trust registered under the Investment Company Act of 1940, as amended, provided that the portfolio of such investment company or investment trust is limited to evidences of such types of investments.

“**Person**” or “**person**” means and includes an association, an unincorporated organization, a corporation, a partnership, a joint venture, a business trust, a government or an agency or a political subdivision thereof, or any other public or private entity, or a natural person.

“**Principal Account**” means any principal account for a Series of Bonds created in the Senior Lien Bond Fund pursuant to Section 401 or other Series of Bonds created pursuant to any Supplemental Indenture.

“**Projected Toll Rate Schedule**” means the projection of future Tolls used by the Traffic and Revenue Consultant to develop an estimate of Toll Road Revenues, which Tolls have been presented to the Board for review and approval.

"**Purchase Fund**" means, with respect to a Series of Bonds, the Fund of that name as may be created in the related Supplemental Indenture as provided in Section 418.

"**Qualified Hedge Provider**" means an entity whose senior long-term debt obligations, or whose obligations under any Hedge Facility are (a) guaranteed by a financial institution, or subsidiary of a financial institution, whose senior long-term debt obligations, at the time the Hedge Facility is first placed into effect, are rated at least in the third highest rating category or higher by any Rating Agency, or (b) fully secured by obligations described in items (a) or (b) of the definition of Permitted Investments which are (i) valued not less frequently than monthly and have a fair market value, exclusive of accrued interest, at all times at least equal to 105% (or such lower percentage as shall be acceptable to the Rating Agencies) of the "notional amount" as defined in the Hedge Facility, together with the interest accrued and unpaid thereon, (ii) held by the Trustee (who shall not be the provider of the collateral) or by any Federal Reserve Bank or a depository acceptable to the Trustee, (iii) subject to a perfected first lien on behalf of the Trustee, and (iv) free and clear from all third-party liens.

"**Toll Rate Covenant**" means the covenant of the Authority to set and adjust Tolls to satisfy the requirements set forth in Section 512(a).

"**Rating Agency**" or "**Rating Agencies**" means, with respect to a Series of Bonds, Fitch, Moody's or Standard & Poor's (or, if such entities are no long in existence, by comparable services) or any other nationally-recognized credit rating agencies specified in the related Supplemental Indenture; provided, that any such rating agency shall, at the time in question, be maintaining a rating on such Series of Bonds at the request of the Authority.

"**Rebate Requirement**" has the meaning assigned to it in the Tax Certificate.

"**Record Date**" means fifteen days prior to each Bond Payment Date, or, if a different record date is provided in a Supplemental Indenture with respect to a particular Series of Bonds, then the record date for such particular Series of Bonds shall be the record date set forth in such Supplemental Indenture.

"**Redemption Account**" means any redemption account for a Series of Bonds created in the Senior Lien Bond Fund pursuant to Section 401 or other Series of Bonds created pursuant to any Supplemental Indenture.

"**Register**" means, with respect to each Series of Bonds, the registration books of the Authority kept to evidence the registration and registration of transfer of such Series of Bonds.

"**Registrar**" means the entity set forth with respect to a Series of Bonds in the applicable Supplemental Indenture, serving as keeper of the Register for such Series of Bonds.

"**Regularly Scheduled Hedge Receipts**" means for any Annual Period the aggregate regularly scheduled amounts payable to the Authority in such Annual Period under the terms of a Hedge Facility, which are due absent any termination, default or dispute in connection with such Hedge Facility (excluding collateral postings, Hedge Termination Payments, and similar payments).

“**Regularly Scheduled Hedge Payments**” means, for any Annual Period, the aggregate regularly scheduled payments due or paid by the Authority under the terms of a Hedge Facility which are due absent any termination, default or dispute in connection with such Hedge Facility (excluding collateral postings, Hedge Termination Payments, and similar payments).

“**Reimbursement Agreement**” means, with respect to a Series of Bonds, any agreement or agreements in each case between a Credit Provider or Credit Providers and the Authority under or pursuant to which a Credit Facility for such Series of Bonds is issued, and any agreement that replaces such original agreement that sets forth the obligations of the Authority to such Credit Provider or Credit Providers and the obligations of such Credit Provider or Credit Providers to the Authority.

“**Remarketing Agent**” means, with respect to a Series of Bonds, the placement or remarketing agent or agents, if any, at the time serving as such under the Remarketing Agreement and designated in a Supplemental Indenture as the Remarketing Agent with respect to such Series of Bonds for purposes of this Indenture.

“**Remarketing Agreement**” means the remarketing agreement, if any, with respect to a Series of Bonds, between the Authority and the Remarketing Agent as from time to time amended and supplemented, or if such remarketing agreement shall be terminated, then such other agreement which may from time to time be entered into with any Remarketing Agent with respect to the remarketing or placement of such Series of Bonds.

“**Renewal and Replacement Costs**” means all costs and expenses that, in the judgment of the Consulting Engineers, are necessary or appropriate to be expended by the Authority in an Annual Period that are not incurred on any annual or seasonal basis and are necessary in keeping the Turnpike open to public travel or use, but shall not include any cost which, in the judgment of the Consulting Engineers is to be treated as Operation and Maintenance Expenses in the current Annual Period and, in reliance on such judgment, have been included in the Authority’s Annual Budget for such Annual Period. The judgment of the Consulting Engineers as to the costs and expenses that are to be included in (a) “Renewal and Replacement Costs” and (b) “Operation and Maintenance Expenses”, respectively, shall be memorialized in a certificate to be provided by the Consulting Engineers to the Authority as part of the annual budget-making process as required by Section 508.

“**Renewal and Replacement Reserve Fund**” means the Renewal and Replacement Reserve Fund created pursuant to Section 401.

“Renewal and Replacement Reserve Fund Requirement” means the amount recommended by the Consulting Engineers as the Renewal and Replacement Costs for a Fiscal Year, which shall be included in the Annual Budget and shall be memorialized in a certificate to be provided by the Consulting Engineers to the Authority during the annual budget-making process, which certificate is to be included in the Annual Budget, as required by Section 508.

“**Responsible Officer**” means an officer of the Trustee assigned to the Trustee’s corporate trust department, including, without limitation, any Vice-President, any Assistant Vice-President, any Trust Officer, or any other officer performing functions similar to those performed by the persons who at the time shall be such officers and also means any other officer of the Trustee to whom any corporate trust matter is referred because of his knowledge of and familiarity with the particular subject.

“**Revenue Fund**” means the Revenue Fund created pursuant to Section 401.

“**Secretary**” means the Secretary of the Board of the Authority.

“**Securities Depository**” means DTC or its successor, if any, appointed pursuant to Section 217.

“**Senior Lien Bonds**” means the Authority’s revenue bonds or other indebtedness or obligations secured by the Senior Lien Bond Fund. The term “Senior Lien Bonds” may include bonds, notes, bond anticipation notes, commercial paper, Optional Tender Bonds, and other Short-Term/Demand Obligations, Regularly Scheduled Hedge Payments and other securities, contracts or obligations incurred through lease, installment purchase or other agreements or certificates of participation therein, in each case to the extent secured by the Senior Lien Bond Fund pursuant to a Supplemental Indenture.

“**Senior Lien Bond Fund**” means the Senior Lien Bond Fund created pursuant to Section 401.

“**Senior Lien Debt Service Reserve Fund**” means the Senior Lien Debt Service Reserve Fund created pursuant to Section 401.

“**Series**” or “**Series of Bonds**” or “**Bonds of a Series**” means a series of Bonds issued pursuant to this Indenture and the terms of a Supplemental Indenture.

“**Short-Term/Demand Obligations**” means each Series of Bonds issued pursuant to this Indenture, the payment of principal of which is either (a) payable on demand by or at the option of the Holder at a time sooner than a date on which such principal is deemed to be payable for purposes of computing Annual Debt Service, or (b) scheduled to be payable within one year from the date of issuance and is contemplated to be refinanced for a specified period or term either (i) through the issuance of additional Short-Term/Demand Obligations, or (ii) through the issuance of Long-Term Obligations.

“**Special Project**” or “**Special Projects**” means any property, improvement or project owned and/or operated by the Authority (or by the Authority’s lessees, contractual operators, and/or concessionaires), or to be acquired, constructed, owned and/or operated, by the Authority (or by the Authority’s lessees, contractual operators, and/or concessionaires) (A) under legal authority provided in the Act and (B) for any new Special Project created on or after the date of this Indenture, as to which the Authority, by adoption of a resolution, as to which the Authority has determined that such property, improvement or project is not part of the Turnpike for travel by motor vehicles, including air rights, if any. Existing Special Projects include, without limitation, (i) the service plazas adjacent to the Turnpike, and the operations selling fuel, food and other products and services at those service plazas, (ii) the facility known as Tamarack located in Beckley, Raleigh County, West Virginia, located at Exit 45 of the Turnpike, including without limitation the Caperton Center at such facility, and (iii) the Tourist Information Center located in Princeton, West Virginia near Exit 9 on Interstate 77 in Mercer County, West Virginia.

"**Special Project Bonds**" means bonds, notes, loans or other obligations or arrangements that are not issued pursuant to this Indenture, but are issued or entered into in connection with Special Projects. Special Project Bonds are not Bonds.

"**Standard & Poor's**" or "**S&P**" means Standard & Poor's Corporation, a corporation organized and existing under the laws of the State of New York, and its successors and assigns and, if such corporation shall no longer perform the functions of a municipal securities rating agency, Standard & Poor's shall mean any other nationally recognized municipal securities rating agency designated by the Authority.

"**State**" means the State of West Virginia.

"**State Road Construction Account**" means that certain special revenue account in the State Treasury (which special revenue account is not part of the State's General Revenue Fund) created pursuant to Section 17-16A-11 of the Act and held in the State Treasury to be expended ultimately by WVDOH for the construction, maintenance and repair of Off-Turnpike WVDOH Projects as provided in the Act and in the Memorandum of Understanding.

"**Subordinate Lien Bond Fund**" means the Subordinate Lien Bond Fund created pursuant to Section 401.

"**Subordinate Lien Bonds**" means the Authority's revenue bonds or other indebtedness or obligations with a priority below Senior, including, without limitation refunding bonds or obligations, which are secured by the Subordinate Lien Bond Fund. The term "Subordinate Lien Bonds" shall include bonds, notes, bond anticipation notes, commercial paper and other Short-Term/Demand Obligations, Regularly Scheduled Hedge Payments and other securities, contracts or obligations incurred through lease, installment purchase or other agreements or certificates of participation therein, in each case to the extent secured by the Subordinate Lien Bond Fund pursuant to a Supplemental Indenture.

"**Subordinate Lien Debt Service Reserve Fund**" means the Subordinate Lien Debt Service Reserve Fund created pursuant to Section 401.

"**Supplemental Indenture**" means an indenture supplemental to or amendatory of this Indenture entered into by the Authority and the Trustee in accordance with Article VIII.

"**Tax Certificate**" means a Tax Certificate concerning certain matters pertaining to the use of proceeds of the Bonds and other tax matters as may be required by Bond Counsel, executed and delivered by the Authority, including any and all exhibits attached thereto.

"**Tax-Exempt Bonds**" means any Bond, the interest on which is excludable from gross income of the holder for purposes of federal income tax.

"**Toll Rate Schedule**" means the schedule of Tolls approved by the Authority as part of the regulatory process established for setting Tolls.

“**Toll Road Consultant**” means a firm or firms of national recognition with expertise and experience regarding the operation, management and financing of, and the collection of revenues from, toll roads, selected and employed by the Authority from time to time.

“**Toll Road Revenues**” means the sum of (a) Tolls, (b) any interest income on, and any profit realized from, the investment of moneys in any Fund or Account, excluding, however, any interest income on, and any profit realized from, the investment of moneys in the Arbitrage Rebate Fund, (c) all proceeds of insurance payable to or received by the Authority with respect to the Turnpike (whether by way of claims, return of premiums, ex gratia settlements or otherwise), including proceeds from business interruption insurance and loss of advance profits insurance, except for proceeds of fire and other casualty insurance, (d) the proceeds of any condemnation awards with respect to the Turnpike and (e) all other amounts derived from or with respect to the operation of the Turnpike, plus (f) any additional revenues added to the Turnpike as provided in Section 216, ***but excluding, however***, any concession revenues, and other revenues derived from the operation or use of service plazas and tourist and information centers, including without limitation Tamarack, the proceeds of any sale of land, buildings or equipment; and any other amounts which are not deemed to be revenues in accordance with generally accepted accounting principles or which are restricted as to their use. Unless otherwise provided in a Supplemental Indenture, there also shall be excluded from the term “Toll Road Revenues” any Hedge Termination Payments received by the Authority. To the extent that the Authority shall adopt a resolution and enter into a Supplemental Indenture that identify a new source of revenues and pledge such new source of revenues for the repayment of, and as security for, Senior Lien Bonds issued under and secured by this Indenture, then such revenues shall also be included in “Toll Road Revenues”.

“**Tolls**” means all tolls, fares, incomes, receipts, and charges and all returns or moneys of an income nature derived by or for the benefit of the Authority from motor vehicle travelers of any part of the Turnpike, including without limitation any moneys received in consideration of issuing EZ-Pass® transponders to travelers who establish an EZ-Pass® account with the Authority, but *excluding, however*, any concession revenues, and other revenues derived from the operation or use of service plazas and tourist and information centers, including without limitation Tamarack.

“**Traffic and Revenue Consultant**” means an independent firm or corporation having a nationwide and favorable reputation for skill and experience in performing and carrying out the duties imposed on the Traffic and Revenue Consultant by this Indenture and selected by the Authority for the purpose of performing and carrying out such duties.

“**Treasurer**” means the Treasurer of the Board of the Authority.

“**Tripartite Agreement**” means the Agreement, dated December 13, 1988, between the Authority, as successor to the West Virginia Turnpike Commission, WVDOT, as successor to WVDOH, and the Federal Highway Administration, as amended by the Amended and Restated Agreement, dated June 1, 2018, and as the same may be further amended from time to time, but only if the Authority has provided written notification of such further amendment to the Trustee and to any Rating Agency then rating the Bonds prior to the effective date therefor pursuant to its terms.

"**Trustee**" means United Bank, a Virginia banking corporation, and any successor to its duties under this Indenture.

"**Turnpike**" means the West Virginia Turnpike as currently administered by the Authority from Charleston, West Virginia to the intersection of Interstate 77 and U.S. Route 460 near Princeton, West Virginia and any extensions, additions, removals, or enhancements thereto permitted pursuant to the Act and the Tripartite Agreement, and may include any Parkway Project, but shall exclude Special Projects except to the extent that the Authority has made such Special Projects part of the West Virginia Turnpike as provided in Section 216.

"**Turnpike Capital Improvement Fund**" means the Turnpike Capital Improvement Fund created pursuant to Section 401.

"**Variable Rate Bond**" means any Bond the interest rate on which is not established at a single numerical rate for the entire remaining term of the Bond.

"**Vice Chairman**" means the Vice Chairman of the Board of the Authority.

"**WVDOH**" means the State of West Virginia Department of Transportation, Division of Highways.

Section 102. Rules of Construction.

Unless the context clearly indicates to the contrary, the following rules shall apply to the construction of this Indenture:

(a) Any reference herein to the Authority, the Board thereof or any officer thereof shall include any persons or entities succeeding to their functions, duties or responsibilities pursuant to or by operation of law or who are lawfully performing their functions.

(b) The use of the neuter, masculine or feminine gender is for convenience only and shall be deemed to mean and include the neuter, masculine and feminine gender.

(c) Words importing the singular number shall include the plural number and vice versa.

(d) Words importing the redemption or calling for redemption of Bonds shall not be deemed to refer to or connote the payment of Bonds at their stated maturity.

(e) All references herein to particular articles or sections are references to articles or sections of this Indenture.

(f) The headings and Table of Contents herein are solely for convenience of reference and shall not constitute a part of this Indenture nor shall they affect its meaning, construction or effect.

(g) All references to terms such as herein, hereunder, hereto, etc. refer to this Indenture, as amended or supplemented.

(h) All references herein to payment of Bonds are references to payment of principal of, purchase price of, if applicable, premium, if any, and interest on Bonds.

(i) All references herein to the time of day shall mean Charleston, West Virginia time.

Section 103. Parity as to Net Toll Road Revenues; Bonds of a Series Equally and Ratably Secured.

(a) All Bonds issued hereunder and at any time Outstanding that are of the same lien priority level shall be equally and ratably secured, with the same right, lien and preference with respect to the Trust Estate, including the Net Toll Road Revenues, with all other outstanding Bonds of the same lien priority level, without preference, priority or distinction on account of the date or dates or the actual time or times of the issuance or maturity of the Bonds. The Subordinate Lien Bonds shall in all respects be junior and subordinate to the Senior Lien Bonds, and, if and to the extent provided in the Supplemental Indenture providing for the issuance of a Series of Subordinate Lien Bonds may also be, if and as so provided, subordinate to the Senior Lien Bonds and to one or more Series of Subordinate Lien Bonds.

(b) All Bonds of a particular Series shall in all respects be equally and ratably secured and shall have the same right, lien and preference hereunder established for the benefit of such Series of Bonds, including, without limitation, any related Series Account in the applicable Bond Fund and any related Series Account in the applicable Debt Service Reserve Fund; provided that nothing herein shall be construed to preclude the creation of separate reserve funds or the obtaining of separate surety bonds, insurance policies and other Credit Facilities for any Series of Bonds, which may or may not be pledged toward the payment of other Series of Bonds. Amounts drawn under a Credit Facility with respect to a particular Series and all other amounts held in accounts or funds established with respect to such Series pursuant to the provisions of Article IV hereof and the Supplemental Indenture providing for the terms of such Series shall be applied solely to make payments on such Series of Bonds.

Section 104. Priority of Lien.

There is hereby created an irrevocable lien upon the Trust Estate for the benefit of holders of the Bonds authorized herein. The pledge hereby made shall be valid and binding from and after the time of the delivery of the first Bond authenticated and delivered under this Indenture. Pursuant to the Act, the security so pledged and then or thereafter received by the Authority shall immediately be subject to the lien of such pledge and the obligation to perform the contractual provisions hereby made shall have priority over any or all other obligations and liabilities of the Authority with regard to the Trust Estate, to the extent provided herein, and the lien of such pledge shall be valid and binding as against all parties having claims of any kind in tort, contract or otherwise against the Authority irrespective of whether such parties have notice thereof.

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ARTICLE II
TERMS OF BONDS

Section 201. Issuance.

The Authority may issue Bonds from time to time in one or more Series as hereinafter provided, and as permitted by the Act, without limitation as to amount, except as may be limited by the Bond Authorizing Resolution or the Act. Unless otherwise provided in the Supplemental Indenture providing for the issuance of a Series of Bonds, the Bonds shall be designated "Turnpike Toll Revenue Bonds" and shall bear an appropriate lien (Senior Lien or Subordinate Lien, as appropriate) and Series designation.

Section 202. Terms.

Each Series of Bonds shall bear the terms provided herein and in the Supplemental Indenture providing for the issuance thereof.

Section 203. Medium and Place of Payment.

(a) The principal of, purchase price of, if applicable, premium, if any, and interest on the Bonds shall be payable in currency of the United States of America which, at the respective dates of payment thereof, is legal tender for the payment of public and private debts. The principal of, purchase price of, if applicable, premium, if any, and interest on a Series of Bonds shall be payable in the manner and at the place specified in the Supplemental Indenture providing for the issuance of such Series of Bonds.

(b) In the event of a default by the Authority in the payment of interest due on a Bond on any Bond Payment Date, such defaulted interest will be payable to the person in whose name such Bond is registered at the close of business on a special record date for the payment of such defaulted interest established by notice mailed by the Registrar for such Bond to the registered owner thereof not less than 10 days preceding such special record date.

(c) So long as the registered owner of any Bond is the Securities Depository or a nominee therefor, the Securities Depository shall disburse any payments received, through its Participants or otherwise, to the Beneficial Owners. Neither the Authority nor the Paying Agent shall have any responsibility or obligation for the payment to any Participant, any Beneficial Owner or any other person or entity (except a registered owner of Bonds) of the principal of, purchase price of, if applicable, premium, if any, and interest on the Bonds. Notwithstanding any other provision of this Indenture to the contrary, so long as the Bonds are registered in the name of Cede & Co., as nominee for the Securities Depository, all payments with respect to principal of, purchase price of, if applicable, premium, if any, and interest on the Bonds shall be made in the manner provided in the Authority's letter of representations to DTC.

(d) Subject to the foregoing provisions of this Section 203, each Bond delivered under this Indenture upon transfer of or exchange for or in lieu of any other Bond shall carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Bond.

Section 204. Mutilated, Destroyed, Lost and Stolen Bonds.

(a) If any Bond shall become mutilated, lost, stolen, or destroyed, the affected Bondholder shall be entitled to the issuance of a substitute Bond only as follows:

(i) in the case of a destroyed, lost, or stolen Bond, the Bondholder shall provide notice of the loss to the Authority within a reasonable time after the Bondholder receives notice of the loss;

(ii) in the case of a destroyed, lost or stolen Bond, the Bondholder shall request the issuance of a substitute Bond before the Authority receives notice of the transfer of the original Bond to a bona fide purchaser for value without notice;

(iii) in all cases, the Bondholder shall provide indemnity against any and all claims arising out of or otherwise related to the issuance of substitute Bonds pursuant to this Section satisfactory to the Trustee and the Authority;

(iv) in the case of a mutilated Bond, the Bondholder shall surrender the Bond to the Trustee for cancellation; and

(v) in the case of a destroyed, lost or stolen Bond, the Bondholder shall provide evidence, satisfactory to the Authority and the Trustee, of the ownership and the destruction, loss or theft of the affected Bond.

Upon compliance with the foregoing, a new Bond of like tenor and denomination, executed by the Authority, shall be authenticated by the Trustee and delivered to the Bondholder, all at the expense of the Bondholder to whom the substitute Bond is delivered. Notwithstanding the foregoing, the Trustee shall not be required to authenticate and deliver any substitute for a Bond which has been called for redemption or which has matured or is about to mature and, in any such case, the principal or redemption price then due or becoming due shall be paid by the Trustee in accordance with the terms of the mutilated, destroyed, lost or stolen Bond without substitution therefor.

(b) Every substituted Bond issued pursuant to this Section 204 shall constitute an additional contractual obligation of the Authority and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Bonds duly issued hereunder unless the Bond alleged to have been mutilated, destroyed, lost, or stolen shall be at any time enforceable by a bona fide purchaser for value without notice. In the event the Bond alleged to have been destroyed, lost, or stolen shall be enforceable by anyone, the Authority may recover the substitute Bond from the Bondholder to whom it was issued or from anyone taking under the Bondholder except a bona fide purchaser for value without notice.

(c) All Bonds shall be held and owned upon the express condition that the foregoing provisions are exclusive with respect to the replacement or payment of mutilated, destroyed, lost, or stolen Bonds, and shall preclude any and all other rights or remedies, notwithstanding any law or statute existing or hereafter enacted to the contrary with respect to the replacement or payment of negotiable instruments or investment or other securities without their surrender.

Section 205. Execution and Authentication of Bonds.

All Bonds shall be executed for and on behalf of the Authority by the Chair and attested by the Secretary and Treasurer. The signatures of the Chair, the Secretary and the Treasurer may be mechanically or photographically reproduced on the Bonds. If any officer of the Authority whose signature appears on any Bond ceases to be such officer before delivery thereof, such signature shall remain valid and sufficient for all purposes as if such officer had remained in office until such delivery. Each Bond shall be authenticated manually by an authorized officer of the Authenticating Agent, without which authentication no Bond shall be entitled to the benefits hereof.

Section 206. Exchange of Bonds.

Bonds, upon presentation and surrender thereof to the Registrar together with written instructions satisfactory to the Registrar, duly executed by the registered Holder or his attorney duly authorized in writing, may be exchanged for an equal aggregate principal amount of fully registered Bonds of the same Series and tenor.

Section 207. Negotiability and Transfer of Bonds; Book-Entry System.

(a) All Bonds issued under this Indenture shall be negotiable, subject to the provisions for registration and registration of transfer thereof contained herein or in the Bonds.

(b) The Authority shall cause the Register, with respect to each Series of Bonds, to be maintained at the offices of the Registrar therefor and shall provide for the registration and registration of transfer of any Bond of such Series under such reasonable regulations as the Authority or the Registrar may prescribe. The Registrar with respect to each Series of Bonds shall maintain the Register for purposes of exchanging and registering Bonds in accordance with the provisions hereof.

(c) Each Bond of a Series shall be registered or registered for transfer only upon the Register maintained by the Registrar, by the Holder thereof in person or by his attorney duly authorized in writing, upon presentation and surrender thereof together with a written instrument of transfer satisfactory to the Registrar duly executed by the registered Holder or his duly authorized attorney. Upon surrender for registration of transfer of any such Bond, the Authority shall cause to be executed and the Authenticating Agent shall authenticate and deliver, in the name of the transferee, one or more new Bonds of the same Series, interest rate, maturity, principal amount and date as the surrendered Bond, as fully registered Bonds only.

(d) The Trustee, as Registrar, hereby designates its principal corporate trust office as the location where it will maintain the Register for the Bonds. If the Registrar is replaced, the Authority shall cause any replacement Registrar to designate, by a written notification to the Trustee, a specific office location (which may be changed from time to time, upon similar notification) at which the Register will be kept.

(e) The Registrar for the Bonds shall, in any case where it is not also the Trustee in respect of the Bonds, forthwith following each Record Date in respect of the Bonds and at any other time as reasonably requested by the Trustee for the Bonds, certify and furnish to the

Trustee, and to any Paying Agent for the Bonds as the Trustee shall specify, the names, addresses, and holdings of Bondholders and any other relevant information reflected in the Bond Register, and the Trustee and any such Paying Agent shall for all purposes be fully entitled to rely upon the information so furnished to it and shall have no liability or responsibility in connection with the preparation thereof.

(f) The Bonds shall be registered upon original issuance and upon subsequent transfer or exchange as provided in this Indenture. Unless otherwise provided in a Supplemental Indenture, each Bond shall be registered in the name of the Securities Depository or a nominee therefor. Purchases by Beneficial Owners of the Bonds shall be made in book-entry form, and the Beneficial Owners shall not receive certificates evidencing their interests in the Bonds. Except as hereinafter provided, all of the Bonds shall continue to be registered in the name of the Securities Depository or a nominee therefor. To the extent that printed Bonds, rather than typewritten Bonds, are to be delivered, such modifications to the form of Bond as may be necessary or desirable in such case are hereby authorized and approved.

(g) A single certificate shall be issued and delivered to the Securities Depository for each maturity of the Bonds. The actual purchasers of the Bonds, herein referred to as the Beneficial Owners, will not receive physical delivery of Bond certificates except as may be provided in a Supplemental Indenture. So long as there exists a Securities Depository as provided herein, all transfers of beneficial ownership interests in the Bonds shall be made by book-entry only, and no person purchasing, selling or otherwise transferring beneficial ownership interests in the Bonds will be permitted to receive, hold, or deliver any Bond certificate. The Authority and the Trustee shall treat the Securities Depository or its nominee as the sole and exclusive Bondholder for all purposes, including payments of principal of, purchase price of, if applicable, premium, if any, and interest on the Bonds, notices and voting.

(h) With respect to Bonds registered in the name of Cede & Co., the Authority and the Trustee shall have no responsibility or obligation to any Participant or to any Beneficial Owner. Without limiting the immediately preceding sentence, the Authority and the Trustee shall have no responsibility or obligation with respect to (i) the accuracy of the records of DTC, Cede & Co. or any Participant with respect to any beneficial ownership interest in the Bonds, (ii) the delivery to any Participant, Beneficial Owner or other person, other than DTC, of any notice with respect to the Bonds, including any notice of redemption, (iii) the payment to any Participant, Beneficial Owner or other person, other than DTC, of any amount with respect to the principal, purchase price or redemption price of, or any interest on, the Bonds, or (iv) any consent given or other action taken by DTC as owner of the Bonds. The Trustee shall pay the principal, purchase price or redemption price of, and interest on, all Bonds only to or upon the order of DTC, and all such payments shall be valid and effective to fully satisfy and discharge the Authority's obligations with respect to such principal or redemption price, and interest, to the extent of the sum or sums so paid.

(i) The Authority and the Trustee covenant and agree, so long as DTC shall continue to serve as Securities Depository for the Bonds, to meet the requirements of DTC with respect to required notices and other provisions of the Authority's letter of representations to DTC. Whenever Bonds remain Outstanding and the beneficial ownership thereof must be determined by the books of the Securities Depository, the requirements in this Indenture for holding, delivering, tendering, or transferring Bonds shall be deemed modified to require the appropriate person to meet the requirements of the Securities Depository with respect to such actions to produce the same effect. Any provision hereof permitting or requiring delivery of Bonds shall, while the Bonds are in the Book-Entry System, be satisfied by notation on the books of the Securities Depository in accordance with state law.

(j) The Trustee and the Authority may from time to time appoint a successor Securities Depository pursuant to Section 217 and enter into any agreement with such Securities Depository to establish procedures with respect to the Bonds not inconsistent with the provisions of this Indenture.

(k) The Authority and the Trustee may conclusively rely upon (i) a certificate of the Securities Depository as to the identity of the Participants in the Book-Entry System with respect to the Bonds and (ii) a certificate of any such Participant as to the identity of, and the respective principal amount of Bonds beneficially owned by, the Beneficial Owners.

(l) Neither the Authority nor the Trustee shall have any responsibility or obligation to any Securities Depository, any Participant in the Book-Entry System or the Beneficial Owners with respect to: (i) the accuracy of any records maintained by the Securities Depository or any Participant; (ii) the payment by the Securities Depository or by any Participant of any amount due to any Beneficial Owner in respect of the principal amount (including premium) or redemption or purchase price of, or interest on, any Bonds; (iii) the delivery of any notice by the Securities Depository or any Participant; (iv) the selection of the Beneficial Owners to receive payment in the event of any partial redemption of the Bonds; or (v) any other action taken by the Securities Depository or any Participant in connection with the Bonds.

(m) Unless otherwise provided in a Supplemental Indenture, Bond certificates shall be delivered to and registered in the name of Beneficial Owners only under the following circumstances:

(i) The Securities Depository determines to discontinue providing its service with respect to the Bonds and no successor Securities Depository is appointed as described in Section 217. Such a determination may be made at any time by the Securities Depository's giving reasonable notice to the Authority or the Trustee and discharging its responsibilities with respect thereto under applicable law.

(ii) The Authority determines not to continue the Book-Entry System through any Securities Depository.

Section 208. Persons Deemed Owners.

Except as provided in the applicable Supplemental Indenture, as to any Bond, the person in whose name such Bond shall be registered shall be deemed and regarded as the absolute owner thereof for all purposes, and payment of principal of, purchase price of, if applicable, premium, if any, and interest on any Bond shall be made, as provided in the applicable Supplemental Indenture, only to or upon the written order of the registered Holder thereof. Such payments shall be valid and effectual to satisfy and discharge the liability upon such Bond to the extent of the amount so paid.

Section 209. Provisions with Respect to Transfers and Exchanges.

(a) All Bonds surrendered in any exchange or registration of transfer of Bonds shall forthwith be cancelled by the Registrar.

(b) In connection with any such exchange or registration of transfer of Bonds, the Holder requesting such exchange or registration of transfer shall as a condition precedent to the exercise of the privilege of making such exchange or registration of transfer remit to the Registrar an amount sufficient to pay any service charge, tax or other governmental charge required to be paid with respect to such exchange or registration of transfer.

(c) Except with respect to Bonds of a Series that are subject to optional tender or are purchased, paid or held by a Credit Provider, neither the Authority nor the Registrar shall be obligated to register the transfer or exchange of any Bond which has been or is being called for redemption in whole or in part.

(d) Upon surrender for transfer of any Bond at the office of the Registrar, the Authority shall execute and the Trustee (or Authenticating Agent) shall authenticate and deliver in the name of the designated transferee or transferees one or more new Bonds of any authorized denomination of a like aggregate principal amount.

(e) At the option of the Beneficial Owner, Bonds may be exchanged for other Bonds of any authorized denomination, of a like Series, maturity, interest rate and aggregate principal amount, upon surrender of the Bonds to be exchanged at any such office. Whenever any Bonds are so surrendered for exchange, the Authority shall execute, and the Trustee (or Authenticating Agent) shall authenticate and deliver in the name of the Beneficial Owner requesting such exchange, one or more new Bonds of any authorized denomination of a like Series, maturity, interest rate and aggregate principal amount.

(f) All Bonds presented for transfer, exchange, redemption, or payment (if so required by the Authority, the Registrar or the Trustee), shall be accompanied by a written instrument or instruments of transfer or authorization for exchange, in form and with guaranty of signature reasonably satisfactory to the Trustee, duly executed by the Beneficial Owner or by his duly authorized attorney in fact.

(g) New Bonds delivered upon any transfer or exchange shall be valid obligations of the Authority, evidencing the same debt as the Bonds surrendered, shall be secured by this Indenture and entitled to all of the rights, remedies and security hereunder to the same extent as the Bonds surrendered.

(h) Neither the Authority nor the Registrar shall have any responsibility or obligation with respect to the accuracy of the records of the Securities Depository or a nominee therefor or any Participant regarding any ownership interest in the Bonds or transfers thereof, or the delivery to any Participant, Beneficial Owner or any other person (except a registered owner of Bonds) of any notice with respect to the Bonds.

Section 210. Conditions for Delivery of Bonds.

Upon the execution and delivery of a Supplemental Indenture providing for the issuance of a Series of Bonds, the Authority shall execute and deliver such Series of Bonds to the Trustee, the Trustee shall deliver such Series of Bonds to the Authenticating Agent for authentication and delivery to or for the account of the Original Purchaser as directed by the Authority Authorized Officer, and the Authenticating Agent shall authenticate such Series of Bonds; provided, however, that, prior to delivery by the Trustee of such Series of Bonds, there shall be delivered to the Trustee the following:

(a) A certified copy of the applicable Bond Authorizing Resolution.

(b) Executed or true counterparts of this Indenture, such Supplemental Indenture, such Bond Purchase Contract, such Hedge Facility, if any, such Reimbursement Agreement, if any, and the executed Credit Facility issued pursuant thereto and such Remarketing Agreement, if any.

(c) A request and authorization by the Authority to the Authenticating Agent to authenticate and deliver the Series of Bonds, describing such Bonds, designating the Original Purchaser to whom such Bonds are to be delivered upon payment therefor and stating the amount to be paid therefor to the Trustee for the account of the Authority.

(d) The amounts specified in the Supplemental Indenture for deposit to the credit of the applicable Funds and Accounts created hereunder.

(e) A certificate of the Consulting Engineers setting forth its opinions as to (i) the Turnpike's being in good repair, and, except with respect to refunding Bonds, (ii) the estimated amount of Operation and Maintenance Expenses for each of the Annual Periods through the next five (5) years or, if such Bonds are being issued to construct a new Parkway Project, then at least five (5) years of operation after completion of such Parkway Project.

(f) Except with respect to refunding Bonds, a certificate of the Traffic and Revenue Consultant setting forth its opinion as to the aggregate estimated amount of Toll Road Revenues which the Authority should derive from the operation of the Turnpike under the Toll Rate Schedule or the Projected Toll Rate Schedule referred to, set forth in, or attached to, the certificate, for each of the Annual Periods through the repayment of all Outstanding Bonds and all other obligations issued by the Authority and payable from Toll Road Revenues including the additional non-refunding Bonds proposed to be issued.

(g) Any other items required by the Supplemental Indenture pursuant to which such Series of Bonds is being issued.

(h) Such other closing documents as the Authority or the Trustee reasonably may specify.

(i) If the Series of Bonds are additional Bonds, the documents and certificates required by Section 213.

Section 211. Form of Bonds.

The definitive Bonds of each Series shall be in substantially the form set forth as an exhibit to the Supplemental Indenture providing for the issuance of such Series of Bonds.

Section 212. Temporary Bonds.

(a) Until definitive Bonds are prepared, the Authority may execute and, upon request by the Authority, the Authenticating Agent shall authenticate and deliver temporary Bonds which may be typewritten, printed or otherwise reproduced in lieu of definitive Bonds subject to the same provisions, limitations and conditions as definitive Bonds. The temporary Bonds shall be dated as provided in the applicable Supplemental Indenture, shall be in such denomination or denominations and shall be numbered as prepared and executed by the Authority, shall be substantially of the tenor of the definitive Bonds of such Series, but with such omissions, insertions and variations as the Authority Authorized Officers executing the same may determine, may only be issued in fully registered form, and may be issued in the form of a single Bond.

(b) Without unreasonable delay after the issuance of temporary Bonds, if any, the Authority shall cause the definitive Bonds to be prepared, executed and delivered to the Authenticating Agent. The definitive Bonds of such Series shall be prepared in such fashion as is acceptable to the Original Purchaser. Any temporary Bonds issued shall be exchangeable for definitive Bonds of such Series upon surrender to the Registrar at its principal corporate trust office (or such other location as may be designated by it) of any such temporary Bond or Bonds, and, upon such surrender, the Authority shall execute and, upon delivery of a certificate of an Authority Authorized Officer, the Authenticating Agent shall authenticate and deliver to the Holder of the temporary Bond or Bonds, in exchange therefor, a like face amount of definitive Bonds of such Series in authorized denominations. Until so exchanged, the temporary Bonds shall in all respects be entitled to the same benefits as definitive Bonds of such Series authenticated and issued pursuant hereto.

(c) Interest on temporary Bonds, when and as payable, shall be paid to the Holders thereof.

(d) All temporary Bonds surrendered in exchange for a definitive Bond or Bonds shall forthwith be cancelled by the Registrar.

Section 213. Additional Bonds.

The Authority may issue one or more Series of additional Bonds to pay costs of the Parkway Projects, to refund all or a portion of a Series of Bonds, to pay costs of issuance, or for any combination of such purposes. Each Series of additional Bonds shall be issued pursuant to a Supplemental Indenture. If such Series of additional Bonds are Senior Lien Bonds, they shall be equally and ratably secured under this Indenture with all other Senior Lien Bonds, without preference, priority or distinction of any Senior Lien Bonds over any other Senior Lien Bonds. If such Series of additional Bonds are Subordinate Lien Bonds, they shall be equally and ratably secured under this Indenture with all other Subordinate Lien Bonds, without preference, priority or distinction of any Subordinate Lien Bonds over any other Subordinate Lien Bonds, except that, to the extent provided in the Supplemental Indenture providing for the issuance of a particular Series of Subordinate Lien Bonds, a Series of Subordinate Lien Bonds may be subordinate to both Senior Lien Bonds and to one or more Series of Subordinate Lien Bonds. If such Series of additional Bonds are Subordinate Lien Bonds having a particular degree of subordination and priority, they shall be equally and ratably secured under this Indenture with all other Subordinate Lien Bonds having the same degree of subordination and priority, without preference, priority or distinction of any such Subordinate Lien Bonds over any other such Subordinate Lien Bonds.

The Trustee shall authenticate and deliver such additional Bonds, but only upon receipt by the Trustee of, among other things, the following:

(a) A certificate of the Authority, dated as of the date of delivery of such additional Bonds, stating that, as of the date of such certificate, no event or condition has happened or existed, or is happening or existing, that continues, or that, with notice or lapse of time or both, would constitute an Event of Default by the Authority under this Indenture;

(b) A certificate of the Authority, dated as of the date of delivery of such additional Bonds, stating that, with respect to all then Outstanding Bonds, all applicable Toll Rate Covenants were met in the prior Annual Period and the Authority is current in all deposits into the various Funds and Accounts and in all payments theretofore required to have been deposited or made by it under the provisions of the Indenture as to all Senior Lien Bonds;

(c) If such additional Bonds are Senior Lien Bonds:

(i) and such additional Bonds are being issued to provide funding for Parkway Projects, then either:

(A) a certificate of an Authority Authorized Officer certifying that the Net Toll Road Revenues (adjusted to reflect any authorized and to be implemented within six months adjustment in tolls, fees and charges, as if such adjustment had been in effect since the beginning of the period described herein) for (1) the most recent Annual Period for which audited statements are available or (2) a 12-consecutive-month period in the immediately prior 18 months were at least 125% of the Maximum Annual Debt Service for all then Outstanding Senior Lien Bonds (excluding any Senior Lien Bonds being refunded) and the additional Senior Lien Bonds proposed to be issued; or

(B) a certificate of the Authority stating that, based upon the report of the Consulting Engineers and Traffic and Revenue Consultant, the projected Net Toll Road Revenues (adjusted to reflect any authorized adjustment in tolls, fees and charges, provided that such adjustment is to be implemented within six months, as if such adjustment had been in effect since the beginning of the period described herein) for the current and each of the Annual Periods through the fifth Annual Period following the issuance of the additional Senior Lien Bonds are at least 135% of

Annual Debt Service for each such year and projected Net Toll Road Revenues in the fifth such year equaled or exceeded 135% of the Maximum Annual Debt Service for all then Outstanding Senior Lien Bonds (excluding any Senior Lien Bonds being refunded) and the additional Senior Lien Bonds proposed to be issued.

(ii) and such additional Senior Lien Bonds are refunding Bonds, a certificate demonstrating compliance with clause (i), clause (ii) or clause (iii) of Section 213(d).

(d) If additional Bonds are being issued for the purpose of refunding all or a portion of one or more Series of Bonds, a certificate of the Authority certifying that either (i) the Maximum Annual Debt Service for all then Outstanding Senior and Subordinate Lien Bonds, after giving effect to such refunding, would not be more than the Maximum Annual Debt Service for all then Outstanding Senior and Subordinate Lien Bonds immediately prior to the issuance of such additional Bonds, (ii) as a result of the proposed refunding, savings in the aggregate Annual Debt Service savings for all then Outstanding Senior and Subordinate Lien Bonds will be achieved in each Annual Period, or (iii) if the additional Bonds are Senior Lien Bonds that are refunding Senior Lien Bonds, then, as an alternative to (i) or (ii) above, a certificate demonstrating compliance with either of the two coverage tests set forth in subsection 213(c)(i).

(e) If such additional Bonds are Subordinate Lien Bonds, then the Trustee shall authenticate and deliver such additional Bonds, upon compliance with the applicable requirements of this Section 213(a) and (b) and upon such further terms and subject to such further conditions as are provided in a Supplemental Indenture authorizing such Bonds.

Section 214. Non-Presentment of Bonds; Unclaimed Moneys.

(a) If any Bond is not presented for payment when the principal thereof becomes due (whether at maturity or call for redemption or otherwise), all liability of the Authority to the Holder thereof for the payment of such Bond shall be completely discharged if funds sufficient to pay such Bond and the interest due thereon shall be held by the Trustee for the benefit of such Bondholder, and thereupon it shall be the duty of the Trustee to hold such funds subject to subsection (b) below, without liability for interest thereon, for the benefit of such Bondholder, who shall thereafter be restricted exclusively to such funds for any claim of whatever nature under this Indenture or on, or with respect to, such Bond.

(b) Notwithstanding any provision of this Indenture to the contrary, if any Bond is not presented for payment of principal of, purchase price of, if applicable, premium, if any, and interest on the Bonds within two (2) years after delivery of such funds to the Trustee, and absent knowledge of the Trustee of any continuing Event of Default, the moneys shall, upon request in writing by the Authority, be paid to the Authority free of any trust or lien and thereafter the Holder of such Bond shall look only to the General Fund of the Authority and then only to the extent of the amounts so received by the Authority without any interest thereon. Prior to the transfer of any moneys, the Trustee shall give notice of such transfer to each affected Holder, and, while the Bonds are in the Book-Entry System, to the Securities Depository in lieu of the

Holders, and publish such notice in a newspaper of general circulation in the Charleston, West Virginia area. The Trustee shall have no further responsibility with respect to such moneys or payment of principal of, purchase price of, if applicable, premium, if any, and interest on the Bonds.

Section 215. Subordinate Lien Obligations.

(a) The Authority shall not issue additional obligations payable from Toll Road Revenues with a lien thereon prior and superior to the Senior Lien Bonds.

(b) The Authority has the power and the right to issue or enter into other bonds, notes, loans or other obligations or arrangements that are payable from and secured by the Toll Road Revenues on a basis that is junior and subordinate to the use of and the lien on the Toll Road Revenues granted to the Trustee for the benefit of the Holders of any Senior Lien Bonds. Any such subordinate obligation, and any funds or accounts established in connection therewith, may be authorized and designated as such by resolution of the Authority, by Supplemental Indenture or any other agreement or instrument of the Authority.

Section 216. Revenue Derived from Special Projects Not Included in Toll Road Revenues; Right of Authority to Add Special Projects to the Turnpike; Definitions of Certain Terms.

(a) Revenue derived from Special Projects is not included in Toll Road Revenues and shall not be subject to the lien of this Indenture, unless the Authority takes action to include such Special Projects in the Turnpike as provided in Section 216(b) below. If the Authority satisfies the requirements of Section 216(b), then the revenues from and the operation and maintenance expenses and renewal and replacement costs of Special Projects shall become Turnpike Toll Road Revenues, Operation and Maintenance Expenses, Renewal and Replacement Costs, respectively. The following capitalized terms shall have the following meanings when used in this Section 216:

(i) "Special Projects Operation and Maintenance Expenses" means, with respect to a Special Project or Special Projects, as applicable, expenses for operation, maintenance, and repairs of a Special Project or Special Projects, ordinary acquisition of equipment, and any other current expenses or obligations required to be paid by the Authority under or pursuant to the provisions of this Indenture, any Supplemental Indenture, or by law, all to the extent properly and directly attributable to the operation of the Special Project or Special Projects, but not any costs or expenses for new construction or any allowance for depreciation. Special Project Operation and Maintenance Expenses shall be further defined as provided in the applicable indenture of trust, Supplemental Indenture, and resolution of the Authority, as applicable to such Special Project or Special Projects

(ii) "Special Project Renewal and Replacement Costs" means, with respect to a Special Project or Special Projects, as applicable, all costs and expenses necessary or appropriate to be incurred by the Authority on other than an annual or seasonal basis in keeping the Special Project or Special Projects open to public travel or use, but shall not include any cost which the Authority has budgeted as Special Project Operation and Maintenance Expenses in the current Annual Period.

(iii) "Special Project Revenues" means, with respect to a Special Project or Special Projects, as applicable, the sum of (a) all rents, fees, sales revenues, commissions, concession revenues and other charges paid to the Authority by, and collected by the Authority from, users of the Special Project and by vendors and concessionaires (or any other persons) who engage in activities at the Special Project or Special Projects that generate revenue of any sort and shall be further defined as provided in the applicable indenture of trust, Supplemental Indenture, and resolution of the Authority, as applicable to such Special Project or Special Projects.

(b) The Authority shall have the right to add one or more Special Project or Special Projects to, and, by adoption of a specific resolution of the Authority, to designate such Special Project or Special Projects as a part of, the Turnpike; provided, that the Authority has complied with the following conditions, as applicable:

(1) An Authority Authorized Officer certificate is delivered to the Trustee certifying that (A) no Event of Default exists; (B) the Authority is current in all deposits into the various Funds and Accounts and in all payments theretofore required to have been deposited or made by it under the provisions of the Indenture as to all Senior Lien Bonds; (C) the Authority is either in compliance with the covenants of the Indenture by which it or its assets are bound, or, upon the inclusion of such Special Project or Special Projects, will be in compliance with all such covenants; and (D) a true and correct copy of the Authority's resolution designating such Special Project or Special Projects as part of the Turnpike is attached to such certificate.

(2) An Authority Authorized Officer certificate is delivered to the Trustee certifying that:

(A) if the Special Project has been generating Special Project Revenues for at least one year, the actual annual Special Project Revenues generated by such Special Project or Special Projects for the most recently completed 12-month period (that is, using actual historical revenues therefrom), equaled or exceeded the sum of (i) Special Projects Operation and Maintenance Expenses for such 12-month period as certified for this purpose by the Consulting Engineers, (ii) to the extent there are Outstanding Special Project Bonds, the debt service due on such Outstanding Special Project Bonds in the prior year, and (iii) Special Projects Renewal and Replacement Costs, as certified for this purpose by the Consulting Engineers; and

(B) Special Project Revenues estimated by the Traffic and Revenue Consultant to be generated by such Special Project or Special Projects in the next five (5) years after addition of such Special Project or Special Projects (taking into account any available historical revenues therefrom, and the reasonably anticipated effects of any new or increased charges, tolls, rents or the like for such Special Project or Special Projects, shall equal or exceed the sum of (i) the Special Projects Operation and Maintenance Expenses for each such Annual Period as certified for this purpose by the Consulting Engineers, (ii) to the extent there are Outstanding Special Project Bonds, the debt service due for each of such five (5) years, and in the fifth (5th) such year, the maximum annual debt service for any Annual Period during the term of such indebtedness, and (iii) Special Projects Renewal and Replacement Costs for each such Annual Period as certified for this purpose by the Consulting Engineers.

(3) If Special Project Bonds are Outstanding, such Special Project Bonds may only be transferred into this Indenture if the applicable Special Project or Special Projects for which such Special Project Bonds were issued is transferred to the Turnpike; provided, that if such Outstanding Special Project Bonds are to be transferred into this Indenture and are to become Senior Bonds secured hereby, then such Special Project Bonds may be so transferred if there also is delivered to the Trustee an Authority Authorized Officer certificate certifying that either:

(A) the sum of Net Special Project Revenues and Net Toll Road Revenues (adjusted to reflect any authorized and to be implemented within six months adjustment in tolls, fees and charges, as if such adjustment had been in effect since the beginning of the period described herein) for (1) the most recent Annual Period for which audited statements are available or (2) a 12-consecutive-month period in the immediately prior 18 months was at least 125% of the Maximum Annual Debt Service for all then Outstanding Bonds (excluding any Senior Lien Bonds being refunded), then Outstanding Special Project Bonds associated with such Special Project or Special Projects being designated as part of the Turnpike, and additional Bonds and Special Project Bonds, if any, then proposed to be issued; **or**

(B) based upon the report of the Consulting Engineers and Traffic and Revenue Consultant, the sum of the projected Net Toll Road Revenues and the projected Net Special Project Revenues (adjusted to reflect any authorized and to be implemented within six months adjustment in tolls, fees and charges, as if such adjustment had been in effect since the beginning of the period described herein) for the current and each of the Annual Periods through the fifth Annual Period following the designation of such Special Project or Special Projects as part of the Turnpike is at least 135% of Annual Debt Service for each such year and projected Net Toll Road Revenues and projected net Special Project Revenues in the fifth such year equaled or exceeded 135% of the Maximum Annual Debt

Service for all then Outstanding Senior Lien Bonds (excluding any Senior Lien Bonds being refunded) any additional Senior Lien Bonds proposed to be issued, and the Special Project Bonds to be transferred into this Indenture.

(c) The Authority may contribute, to the extent available for such purpose, Toll Road Revenues to support Special Projects and/or to pay debt service on Special Project Bonds.

Section 217. Resignation or Removal of Securities Depository.

(a) The Authority may remove the Securities Depository and the Securities Depository may resign by giving 60 days' prior written notice to the other of such removal or resignation. Additionally, the Securities Depository shall be removed 60 days after receipt by the Authority of written notice from the Securities Depository to the effect that the Securities Depository has received written notice from Participants having interests, as shown in the records of the Securities Depository, in an aggregate principal amount of not less than 50% of the aggregate principal amount of the then Outstanding Bonds to the effect that the Securities Depository is unable or unwilling to discharge its responsibilities or a continuation of the requirement that all of the Outstanding Bonds be registered in the name of the Securities Depository or a nominee therefor is not in the best interests of the Beneficial Owners. Upon the removal or resignation of the Securities Depository, the Securities Depository shall take such action as may be necessary to assure the orderly transfer of the computerized book-entry system with respect to the Bonds to a successor Securities Depository or, if no successor Securities Depository is appointed as herein provided, the transfer of the Bonds in certificate form to the Beneficial Owners or their designees. Upon the giving of notice by the Authority of the removal of the Securities Depository, the giving of notice by the Securities Depository of its resignation or the receipt by the Authority of notice with respect to the written notice of Participants referred to herein, the Authority may, within 60 days after the giving of such notice, appoint a successor Securities Depository upon such terms and conditions as the Authority shall impose.

(b) Any such successor Securities Depository shall at all times be a registered "clearing agency" under the Securities and Exchange Act of 1934, as amended, or other applicable statute or regulation, and in good standing thereunder.

(c) If the Authority fails to appoint a successor Securities Depository within such time period, the Bonds shall no longer be restricted to being registered in the name of the Securities Depository or a nominee therefor, but may be registered in whatever name or names owners transferring or exchanging bonds shall designate.

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ARTICLE III
REDEMPTION OF BONDS

Section 301. Right to Redeem.

The Bonds of a Series shall be subject to redemption prior to maturity at such times, to the extent and in the manner provided herein and in the applicable Supplemental Indenture.

Section 302. Sinking Fund Redemption.

Bonds of a Series shall be subject to mandatory sinking fund redemption and shall be redeemed in the amounts and on the dates and in the years set forth in the Supplemental Indenture providing for the issuance of such Bonds.

Section 303. Purchase or Cancellation in Lieu of Redemption.

Except as may be provided in the applicable Supplemental Indenture, on or before the forty-fifth (45th) day next preceding any applicable sinking fund redemption date, the Authority has the option to: (i) cause to be paid to the Trustee for deposit in the applicable subaccount of the relevant Series Redemption Account such amount, or direct the Trustee to use moneys in the applicable sinking fund account in such amount, as the Authority may determine, accompanied by a certificate signed by the Authority Authorized Officer directing the Trustee to apply such amount to the purchase of the applicable Series of Bonds, and the Trustee shall use all reasonable efforts to expend such funds as nearly as may be practicable in the purchase of such Series of Bonds, at a price not exceeding the principal amount thereof plus accrued interest to such sinking fund redemption date; or (ii) receive a credit against the sinking fund redemption obligation for the applicable Series of Bonds to the extent such Series of Bonds have been purchased by the Authority and presented to the Trustee for cancellation or redeemed (other than pursuant to the above-mentioned sinking fund requirements) and cancelled by the Trustee.

Each Series of Bonds so purchased, delivered or previously redeemed shall be credited by the Trustee as provided above at 100% of the principal amount thereof against the obligation of the Authority on the applicable sinking fund redemption date. Any excess over such obligation shall be credited as directed by the Authority against applicable future sinking fund redemption obligations, or deposits with respect thereto, and the principal amount of such Series of Bonds to be redeemed by operation of the sinking fund shall be accordingly reduced. Any funds received by the Trustee pursuant to clause (i) of the preceding paragraph, but not expended as provided therein for the purchase of a Series of Bonds on or before said forty-fifth (45th) day shall be retained in the relevant Series Redemption Account and shall thereafter be used only for the purchase of such Series of Bonds, as a credit as directed by the Authority, against future sinking fund obligations, or deposits with respect thereto as directed by the Authority.

Section 304. Notice of Redemption.

Except as may be provided otherwise in the applicable Supplemental Indenture:

(a) If less than all Bonds of a Series are to be redeemed, and subject to the provisions of subsection (b) hereof, the Bonds to be redeemed shall be identified by reference to the Series designation, date of issue, serial numbers and maturity date. Each notice of redemption shall specify: (i) the date fixed for redemption, (ii) the principal amount of Bonds or portions thereof to be redeemed, (iii) the applicable redemption price, (iv) the place or places of payment, (v) that payment of the principal amount and premium, if any, will be made upon presentation and surrender to the Trustee or Paying Agent, as applicable, of the Bonds to be redeemed, unless provided otherwise in the applicable Supplemental Indenture, (vi) that interest accrued to the date fixed for redemption will be paid as specified in such notice, (vii) that on and after such date interest on Bonds which have been redeemed will cease to accrue, and (viii) the designation, including Series, and the CUSIP and serial numbers, if any, of the Bonds to be redeemed and, if less than the face amount of any such Bond is to be redeemed, the principal amount to be redeemed. Notice of redemption of any Bonds shall be mailed at the times and in the manner set forth in subsection (b) of this Section.

(b) Except as may be provided otherwise in the applicable Supplemental Indenture, any notice of redemption shall be sent by the Trustee not less than 20 nor more than 60 days prior to the date set for redemption by first-class mail (i) to the Holder of each such Bond to be redeemed in whole or in part at his address as it appears on the Register, or while the Bonds are held in book-entry form, to the Securities Depository, (ii) to all organizations registered with the Securities and Exchange Commission as securities depositories, and (iii) to the Municipal Securities Rulemaking Board. During such period, the Trustee shall not be responsible for mailing notices of redemption to anyone other than such Securities Depository or its nominee. In preparing such notice, the Trustee shall take into account, to the extent applicable, the prevailing tax-exempt securities industry standards and any regulatory statement of any federal or state administrative body having jurisdiction over the Authority, or the tax-exempt securities industry. Failure to give any notice specified in (i), or any defect therein, shall not affect the validity of any proceedings for the redemption of any Bonds with respect to which no such failure has occurred and failure to give any notice specified in (ii), (iii) or (iv), or any defect therein, shall not affect the validity of any proceedings for the redemption of any Bonds with respect to which the notice specified in (i) is given correctly.

(c) If at the time of notice of any optional redemption of a Series of Bonds there has not been deposited with the Trustee moneys available for payment sufficient to redeem all of such Series of Bonds called for redemption, the notice shall state that it is conditional in that it is subject to the deposit of sufficient moneys by not later than the redemption date, and if the deposit is not timely made the notice shall be of no effect.

Section 305. Selection of Bonds to be Redeemed.

(a) Bonds of any Series to be called for redemption shall be selected as provided in the applicable Supplemental Indenture. Except as provided otherwise in the applicable Supplemental Indenture: (i) If less than all of the Bonds of a Series are called for mandatory sinking fund redemptions required under the terms of any Supplemental Indenture, the Authority will select the maturities of the serial bonds and portions of the amortization of the term bonds to be redeemed and will designate such selection in an Authority Authorized Officer's certificate; (ii) if less than all Bonds of a serial maturity are called for redemption, the particular Bonds of a Series of such maturity to be redeemed will be selected by DTC or any successor securities depository pursuant to its rules and procedures or, if the book entry system is discontinued, will be selected by the Trustee by lot in such manner as the Trustee at its discretion may determine; and (iii) the portion of any Bond to be redeemed shall be in the principal amount of $1,000 or some multiple thereof. In selecting Bonds for redemption, each Bond shall be considered as representing that number of Bonds which is obtained by dividing the principal amount of such Bond by $1,000. If a portion of a Bond shall be called for redemption, a new Bond in principal amount equal to the unredeemed portion thereof shall be issued to the registered owner upon the surrender thereof.

(b) The Trustee shall treat each Bond of a denomination greater than the minimum denomination authorized in the applicable Supplemental Indenture as representing the number of separate Bonds that can be obtained by dividing the Bond's actual principal amount by such minimum denominations.

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ARTICLE IV
REVENUES AND FUNDS

Section 401. Creation of Funds and Accounts.

(a) The Authority hereby establishes and creates for the Bonds the following Funds and Accounts:

(i) Parkway Projects Fund, which shall contain the following Accounts with respect to each Series of Bonds:

(A) Parkway Projects Account; and

(B) Costs of Issuance Account.

(ii) Revenue Fund.

(iii) Operation and Maintenance Fund, which shall contain the following Accounts:

(A) Operation and Maintenance Account; and

(B) Operation and Maintenance Reserve Account.

(iv) Senior Lien Bond Fund, which shall contain the following Accounts with respect to each Series of Senior Lien Bonds:

(A) Interest Account;

(B) Principal Account; and

(C) Redemption Account.

(v) Senior Lien Debt Service Reserve Fund, which shall contain an Account with respect to each Series of Senior Lien Bonds, or may have a composite Account for two or more Series of Senior Lien Bonds, as further provided in any related Supplemental Indenture(s).

(vi) Subordinate Lien Bond Fund, which shall contain the following Accounts with respect to each Series of Subordinate Lien Bonds:

(A) Interest Account;

(B) Principal Account; and

(C) Redemption Account.

(vii) Subordinate Lien Debt Service Reserve Fund, which shall contain an Account with respect to each Series of Subordinate Lien Bonds, or may have a composite

Account for two or more Series of Subordinate Lien Bonds, as further provided in any related Supplemental Indenture(s).

(viii) Arbitrage Rebate Fund, which shall contain the Accounts with respect to each Series of Bonds as set forth in the applicable Supplemental Indenture.

(ix) Renewal and Replacement Reserve Fund.

(x) Turnpike Capital Improvement Fund.

(xi) General Fund.

(b) The Funds and Accounts created hereby shall constitute trust funds and accounts for the purposes provided in this Indenture, and shall be separately accounted for by the Authority with an Authorized Depositary. The Senior Lien Bond Fund and the Accounts therein (the Principal Account, the Interest Account, and the Redemption Account), the Senior Lien Debt Service Reserve Fund, the Subordinate Lien Bond Fund and the Accounts therein (the Principal Account, the Interest Account, and the Redemption Account), the Subordinate Lien Debt Service Reserve Fund, and the Arbitrage Rebate Fund shall be held pursuant to this Indenture by the Trustee. The Parkway Projects Fund and the Accounts therein (the Parkway Projects Account and the Costs of Issuance Account), the Revenue Fund, and the Operation and Maintenance Fund and the Accounts therein (the Operation and Maintenance Account and the Operation and Maintenance Reserve Account) shall be held pursuant to this Indenture by the Authority with an Authorized Depositary.

(c) There has been created, or is being created (simultaneously with the issuance of the first Series of Bonds under this Indenture), in the Treasury of the State of West Virginia, pursuant to the Memorandum of Understanding and the Act, the State Road Construction Account.

Section 402. Application of Bond Proceeds.

All proceeds of the sale of each Series of Bonds shall be paid to the Trustee, against receipt therefor, at or prior to the delivery of such Series of Bonds and shall be deposited or delivered by the Trustee as provided by the Supplemental Indenture providing for the issuance of such Bonds. The preceding sentence shall not be construed to prohibit the Authority from having net proceeds (that is, gross proceeds less underwriters' discount) paid to the Trustee, in the Authority's discretion, and such payments and proceeds are expressly permitted. Without limitation of the preceding sentence, it is anticipated that the Supplemental Indenture for the initial Series of Bonds to be issued under this Indenture shall require that, immediately upon receipt of such proceeds, the portion of the proceeds of such Bonds relating to the Off-Turnpike WVDOH Projects shall be transferred by the Trustee to the State Road Construction Account as further provided in the Memorandum of Understanding.

Section 403. Parkway Projects Fund.

(a) All proceeds of the Bonds relating to the Parkway Projects (excluding amounts transferred by the Trustee to the State Road Construction Account pursuant to Section 402) shall be deposited into the Parkway Projects Fund, and the Costs of Issuance Account, as provided in the Supplemental Indenture relating to a Series of Bonds

(b) There also may be deposited to the credit of the Parkway Projects Fund any other moneys (including all obligations held as investments thereof and the proceeds of such investments) received from any other source for paying costs of the Parkway Projects, or for any other purpose or project authorized by law. Amounts in the Parkway Projects Fund shall be pledged to the Bondholders.

(c) Moneys in the Parkway Projects Fund shall be applied to the payment of (i) costs of issuance (from the applicable Costs of Issuance Account therein), and (ii) the cost of the On-Turnpike Authority Projects or for other projects and purposes then authorized by law (from the applicable Parkway Projects Account therein). The Authority covenants that the funds in the Parkway Projects Fund shall be applied in accordance with the provisions of this Section and the covenants contained in Section 510.

(d) Moneys, instruments and securities in the Parkway Projects Fund shall be held by the Authority, as secured party for the Holders of the Bonds. The Authority shall maintain the Parkway Projects Fund, which shall be separately accounted for, with and by an Authorized Depositary and shall execute and deliver to the Trustee an account control agreement or similar agreement with the Trustee and such Authorized Depositary reasonably sufficient, as confirmed in an Opinion of Bond Counsel, to perfect the pledge of, and security interest in, amounts in the Parkway Projects Fund under this Indenture.

(e) After payments of, and reimbursements with respect to, the Parkway Projects financed by the related Series of Bonds are completed, as certified by the Authority, and **provided that** no Event of Default has occurred and is continuing in the payment of principal of or interest on any Bonds, and **provided further** that the Authority shall have received an Opinion of Bond Counsel that such use will not affect adversely the exclusion of interest on such Bonds from gross income for federal income tax purposes and, if applicable, the non-tax preference status of such interest for federal alternative minimum income tax purposes, and the qualification of earnings on any Funds or Accounts for treatment pursuant to Section 148(f)(4)(B) of the Code as meeting the requirement of Section 148(f)(2) to rebate amounts to the United States, excess funds in the Parkway Projects Fund shall be applied (i) to eliminate any deficiency in the applicable Series Account, if any, in the Debt Service Reserve Fund, (ii) at the earliest date such Bonds are subject to optional redemption without premium or for the purchase of such Bonds, to the applicable Redemption Account for the optional redemption, if applicable, of such Bonds, or (iii) to the applicable Account in the relevant Bond Fund.

Section 404. Revenue Fund.

(a) Commencing immediately after the issuance of the first Series of Bonds pursuant to this Indenture, the Authority shall deposit all Toll Road Revenues upon receipt, and may deposit amounts from any available source, to the Revenue Fund. Amounts in the Revenue Fund shall be pledged to the Holders of such Bonds.

(b) Moneys, instruments and securities in the Revenue Fund shall be separately accounted for by the Authority with an Authorized Depositary. The Authority shall maintain the Revenue Fund, which shall be separately accounted for, with and by an Authorized Depositary and shall execute and deliver to the Trustee an account control agreement or similar agreement with the Trustee and such Authorized Depositary reasonably sufficient, as confirmed in an Opinion of Bond Counsel, to perfect the pledge of, and security interest in, amounts in the Revenue Fund under this Indenture.

Section 405. Operation and Maintenance Fund.

Amounts in the Operation and Maintenance Fund shall be separately accounted for by the Authority and shall be maintained with and by an Authorized Depositary and shall be used by the Authority to pay Operation and Maintenance Expenses.

(a) Operation and Maintenance Account. Amounts in the Operation and Maintenance Account in the Operation and Maintenance Fund shall be used by the Authority solely to pay Operation and Maintenance Expenses. The amount deposited in the Operation and Maintenance Account shall equal one-twelfth (1/12th) of the Operation and Maintenance Expenses for the current Fiscal Year, provided that the payment due for the last month of each Fiscal Year shall equal the difference between budgeted and actual expenses so that the total deposits to the Operation and Maintenance Account shall equal the actual expenses for such Fiscal Year. The monthly payments shall be increased or decreased, as necessary, to reflect amendments to the Annual Budget. Amounts in the Operation and Maintenance Account within the Operation and Maintenance Fund shall not be pledged to Bondholders.

(b) Operation and Maintenance Reserve Account. Amounts in the Operation and Maintenance Reserve Account in the Operation and Maintenance Fund shall be used by the Authority to pay Operation and Maintenance Expenses in the event that amounts on deposit in the Operation and Maintenance Account are insufficient to pay all Operation and Maintenance Expenses when due. The amount deposited in the Operation and Maintenance Reserve Account shall equal one-sixth (1/6th) of the Operation and Maintenance Expenses for the Turnpike set forth in the Authority's current Fiscal Year budget. The Authority shall execute and deliver to the Trustee an account control agreement or similar agreement with the Trustee and such Authorized Depositary reasonably sufficient, as confirmed in an Opinion of Bond Counsel, to perfect the pledge of, and security interest in, amounts in the Operation and Maintenance Reserve Account under this Indenture. Amounts in the Operation and Maintenance Reserve Account shall be pledged to Holders of the applicable Senior Lien Bonds or all Senior Lien Bonds.

Section 406. Senior Lien Bond Fund.

(a) Amounts in each Account in the Senior Lien Bond Fund shall be used by the Trustee to pay the principal of and interest on the related Series of Senior Lien Bonds when due in accordance with the terms of the Supplemental Indenture creating each Series of Senior Lien Bonds; provided, however, that while there is a Credit Facility in effect with respect to any Series of Senior Lien Bonds, amounts in the related Series Interest, Principal or Redemption Account in the Senior Lien Bond Fund may be used to reimburse the Credit Provider with respect to such Credit Facility for interest, principal or redemption payments, respectively, made to Holders of such Senior Lien Bonds with funds provided by such Credit Provider in accordance with the provisions of the applicable Supplemental Indenture with respect to such Series of Senior Lien Bonds to the extent that such reimbursement obligations of the Authority are secured by this Indenture. Amounts in the Senior Lien Bond Fund shall be pledged to Holders of such Senior Lien Bonds.

(b) In the event that on the Business Day preceding any interest payment date the amount in any Account of the Senior Lien Bond Fund shall be less than the amount required for payment of the interest on and the principal of the related Outstanding Senior Lien Bonds, and any related parity obligation due and payable on such interest payment date, the Trustee shall withdraw the amount necessary to increase the amount on deposit in such Account in the applicable Senior Lien Bond Fund to the requirement therefor from the applicable Senior Lien Debt Service Reserve Fund.

(c) When Senior Lien Bonds are redeemed or purchased, the amount, if any, in the applicable Account of the Senior Lien Bond Fund representing interest thereon shall be applied to the payment of accrued interest in connection with such redemption or purchase. Whenever the amount in an Account of the Senior Lien Bond Fund is sufficient to redeem all of the Outstanding Senior Lien Bonds of the applicable Series and to pay interest accrued to the redemption date, the Authority will cause the Trustee to redeem all such Senior Lien Bonds on the applicable redemption date specified by the Authority. Any amounts remaining in the Senior Lien Bond Fund after payment in full of the principal or redemption price, premium, if any, and interest on the applicable Senior Lien Bonds (or provision for payment thereof) and the fees, charges and expenses of the Authority, including all amounts owed to the Credit Providers, if any, the Trustee and any paying agents, shall be paid to the Authority.

(d) Moneys delivered to the Trustee in contemplation of optional or mandatory redemption or maturity of the Senior Lien Bonds shall be deposited in the related Redemption Account and shall be used by the Trustee to redeem or pay the principal of and interest on such Senior Lien Bonds (including any redemption premium thereon) in accordance with the provisions hereof. If any Series of Senior Lien Bonds is to be paid or redeemed in full, any balance in the Redemption Account for such Series may, at the option of the Authority, be applied in whole or in part to the payment or redemption of such Series or transferred to the applicable Senior Lien Bond Fund.

Section 407. Senior Lien Debt Service Reserve Fund.

(a) Subject to the provisions of Section 406, amounts in the Senior Lien Debt Service Reserve Account shall be used to pay debt service on the applicable Senior Lien Bonds or all Senior Lien Bonds, as appropriate, on the date such debt service is due when insufficient funds for that purpose are available in the applicable Accounts relating to such Outstanding Senior Lien Bonds. Amounts in the Senior Lien Debt Service Reserve Account shall be pledged to Holders of the applicable Senior Lien Bonds or all Senior Lien Bonds.

(b) In lieu of or in addition to cash or investments, at any time the Authority may cause to be deposited to the credit of the Senior Lien Debt Service Reserve Account any form of

DSRF Credit Facility, in the amount of the Senior Lien Debt Service Reserve Requirement, irrevocably payable to the Trustee as beneficiary for the Holders of the Senior Lien Bonds, provided that the Trustee has received evidence satisfactory to it that (i) at the time of issuance of such DSRF Credit Facility, the DSRF Credit Provider has a credit rating with a long-term credit rating in the third highest rating category or higher by any Rating Agency, (ii) except as provided in the next sentence of this subsection, the only condition to a drawing under the DSRF Credit Facility is insufficient amounts in the applicable Funds and Accounts held by the Trustee with respect to the Senior Lien Bonds when needed to pay debt service on such Senior Lien Bonds or the expiration of the DSRF Credit Facility, and (iii) the Authority shall notify the Trustee at least 90 days prior to expiration of the DSRF Credit Facility. If (a) the Authority receives such expiration notice and the DSRF Credit Provider does not extend the expiration date of the DSRF Credit Facility or (b) the Authority receives notice of the termination of the DSRF Credit Facility, the Authority shall (x) provide a substitute DSRF Credit Facility that meets the requirements set forth in the foregoing sentences, (y) deposit in the Senior Lien Debt Service Reserve Account, in 36 equal monthly installments the total amount needed to restore the balance in the Senior Lien Debt Service Reserve Account to, the Senior Lien Debt Service Reserve Requirement within 36 months of the termination date in the case of receipt of a termination notice, or (z) instruct the Trustee to draw on such DSRF Credit Facility in the amount necessary to meet the Senior Lien Debt Service Reserve Requirement prior to the termination date in the case of receipt of a termination notice, and deposit such drawing to the Senior Lien Debt Service Reserve Account. Amounts, if any, released from the Senior Lien Debt Service Reserve Account, upon deposit to the credit of such Senior Lien Debt Service Reserve Account of a DSRF Credit Facility pursuant to subsection (b) of this Section shall, upon designation by an Authority Authorized Officer, accompanied by an Opinion of Bond Counsel that such use will not adversely affect the exclusion from gross income of interest on the Senior Lien Bonds for federal income tax purposes and, if applicable, the non-tax preference status of such interest for federal alternative minimum income tax purposes, be transferred to the Senior Lien Principal Account or the Senior Lien Redemption Account and used to pay principal of or to redeem such Senior Lien Bonds.

(c) In the event that the Trustee shall have withdrawn moneys in the Senior Lien Debt Service Reserve Account for the purpose of paying principal and interest on such Senior Lien Bonds when due, the Trustee shall promptly notify the Authority of such withdrawal. Upon receipt of such notification, the Authority shall, on or prior to the first Business Day of each month, commencing the month after receipt of the notification from the Trustee, transfer to the Trustee for deposit in the Senior Lien Debt Service Reserve Account an amount equal to one-twelfth (1/12th) of the aggregate amount of each unreplenished withdrawal until the amount on deposit in the Senior Lien Debt Service Reserve Account is equal to the Senior Lien Debt Service Reserve Requirement.

(d) Notwithstanding anything contained herein to the contrary, the Authority may elect, by resolution adopted prior to the issuance of any Series of Bonds, to fully fund the Debt Service Reserve Account applicable to any such Series of Bonds over a period specified in such resolution not to exceed the period during which capitalized debt service and an amount sufficient to pay all principal and interest due on such Series of Bonds has been deposited with the Trustee, during which period the Authority shall make substantially equal monthly installments in order that the amounts on deposit therein and available amounts under any DSRF

Credit Facility at the end of such period shall equal the Debt Service Reserve Requirement. If the Debt Service Reserve Account applicable to any such Series of Bonds is to be funded in installments as provided in this paragraph, the deposits required to be made to the Debt Service Reserve Account applicable to any such Series of Bonds pursuant to the foregoing may be limited to the amount which will be sufficient to pay the required monthly installments specified in such resolution, plus an additional amount necessary to make up any deficiencies caused by withdrawals or resulting from valuation of investments of funds on deposit therein.

Section 408. Subordinate Lien Bond Fund.

(a) Amounts in each Account in the Subordinate Lien Bond Fund shall be used by the Trustee to pay the principal of and interest on the related Series of Subordinate Lien Bonds when due in accordance with the terms of the Supplemental Indenture creating each Series of Subordinate Lien Bonds; provided, however, that while there is a Credit Facility in effect with respect to any Series of Subordinate Lien Bonds, amounts in the related Series Interest, Principal or Redemption Account in the Subordinate Lien Bond Fund may be used to reimburse the Credit Provider with respect to such Credit Facility for interest, principal or redemption payments, respectively, made to Holders of such Subordinate Lien Bonds with funds provided by such Credit Provider in accordance with the provisions of the applicable Supplemental Indenture with respect to such Series of Subordinate Lien Bonds to the extent that such reimbursement obligations of the Authority are secured by this Indenture. Amounts in the Subordinate Lien Bond Fund shall be pledged to Holders of such Subordinate Lien Bonds.

(b) In the event that on the Business Day preceding any interest payment date the amount in any Account of the Subordinate Lien Bond Fund shall be less than the amount required for payment of the interest on and the principal of the related Outstanding Subordinate Lien Bonds, and any related parity obligation due and payable on such interest payment date, the Trustee shall withdraw the amount necessary to increase the amount on deposit in such Account in the applicable Subordinate Lien Bond Fund to the requirement therefor from the applicable Subordinate Lien Debt Service Reserve Fund.

(c) When Subordinate Lien Bonds are redeemed or purchased, the amount, if any, in the applicable Account of the Subordinate Lien Bond Fund representing interest thereon shall be applied to the payment of accrued interest in connection with such redemption or purchase. Whenever the amount in an Account of the Subordinate Lien Bond Fund is sufficient to redeem all of the Outstanding Subordinate Lien Bonds of the applicable Series and to pay interest accrued to the redemption date, the Authority will cause the Trustee to redeem all such Subordinate Lien Bonds on the applicable redemption date specified by the Authority. Any amounts remaining in the Subordinate Lien Bond Fund after payment in full of the principal or redemption price, premium, if any, and interest on the applicable Subordinate Lien Bonds (or provision for payment thereof) and the fees, charges and expenses of the Authority, including all amounts owed to the Credit Providers, if any, the Trustee and any paying agents, shall be paid to the Authority.

(d) Moneys delivered to the Trustee in contemplation of optional or mandatory redemption or maturity of the Subordinate Lien Bonds shall be deposited in the related Redemption Account and shall be used by the Trustee to redeem or pay the principal of such

Subordinate Lien Bonds (including any redemption premium thereon) in accordance with the provisions hereof. If any Series of Subordinate Lien Bonds is to be paid or redeemed in full, any balance in the Redemption Account for such Series may, at the option of the Authority, be applied in whole or in part to the payment or redemption of such Series or transferred to the applicable Subordinate Lien Bond Fund.

Section 409. Subordinate Lien Debt Service Reserve Fund.

(a) Subject to the provisions of Section 408, amounts in the Subordinate Lien Debt Service Reserve Account shall be used to pay debt service on all Outstanding Subordinate Lien Bonds on the date such debt service is due when insufficient funds for that purpose are available in the applicable Accounts relating to such Outstanding Subordinate Lien Bonds. Amounts in the Subordinate Lien Debt Service Reserve Account shall be pledged to Holders of Subordinate Lien Bonds.

(b) In lieu of or in addition to cash or investments, at any time the Authority may cause to be deposited to the credit of the Subordinate Lien Debt Service Reserve Account any form of DSRF Credit Facility, in the amount of the Subordinate Lien Debt Service Reserve Requirement, irrevocably payable to the Trustee as beneficiary for the Holders of the Subordinate Lien Bonds, provided that the Trustee has received evidence satisfactory to it that (i) at the time of issuance of such DSRF Credit Facility, the DSRF Credit Provider has a credit rating with a long-term credit rating in the third highest rating category or higher by any Rating Agency, (ii) except as provided in the next sentence of this subsection, the only condition to a drawing under the DSRF Credit Facility is insufficient amounts in the applicable Funds and Accounts held by the Trustee with respect to the Subordinate Lien Bonds when needed to pay debt service on such Subordinate Lien Bonds or the expiration of the DSRF Credit Facility, and (iii) the Authority shall notify the Trustee at least 90 days prior to expiration of the DSRF Credit Facility. If (a) the Authority receives such expiration notice and the DSRF Credit Provider does not extend the expiration date of the DSRF Credit Facility or (b) the Authority receives notice of the termination of the DSRF Credit Facility, the Authority shall (x) provide a substitute DSRF Credit Facility that meets the requirements set forth in the foregoing sentences, (y) deposit in the Subordinate Lien Debt Service Reserve Account, in 36 equal monthly instalments the total amount needed to restore the balance in the Senior Lien Debt Service Account to, the Senior Lien Debt Service Reserve Requirement within 36 months of the termination date in the case of receipt of a termination notice, or (z) instruct the Trustee to draw on such DSRF Credit Facility in the amount necessary to meet the Subordinate Lien Debt Service Reserve Requirement prior to the termination date in the case of receipt of a termination notice, and deposit such drawing to the Subordinate Lien Debt Service Reserve Account. Amounts, if any, released from the Subordinate Lien Debt Service Reserve Account, upon deposit to the credit of such Subordinate Lien Debt Service Reserve Account of a DSRF Credit Facility pursuant to subsection (b) of this Section shall, upon designation by an Authority Authorized Officer, accompanied by an Opinion of Bond Counsel that such use will not adversely affect the exclusion from gross income of interest on the Subordinate Lien Bonds for federal income tax purposes and, if applicable, the non-tax preference status of such interest for federal alternative minimum income tax purposes, be transferred to the Subordinate Lien Principal Account or the Subordinate Lien Redemption Account and used to pay principal of or to redeem such Subordinate Lien Bonds.

(c) In the event that the Trustee shall have withdrawn moneys in the Subordinate Lien Debt Service Reserve Account for the purpose of paying principal and interest on such Subordinate Lien Bonds when due, the Trustee shall promptly notify the Authority of such withdrawal. Upon receipt of such notification, the Authority shall, on or prior to the first Business Day of each month, commencing the month after receipt of the notification from the Trustee, transfer to the Trustee for deposit in the Subordinate Lien Debt Service Reserve Account an amount equal to one-twelfth (1/12th) of the aggregate amount of each unreplenished withdrawal until the amount on deposit in the Subordinate Lien Debt Service Reserve Account is equal to the Subordinate Lien Debt Service Reserve Requirement.

(d) Notwithstanding anything contained herein to the contrary, the Authority may elect, by resolution adopted prior to the issuance of any Subordinate Lien Bonds, to fully fund the Debt Service Reserve Account applicable to any such Series of Bonds over a period specified in such resolution not to exceed the period during which capitalized debt service and an amount sufficient to pay all principal and interest due on such Series of Bonds has been deposited with the Trustee, during which period the Authority shall make substantially equal monthly installments in order that the amounts on deposit therein and available amounts under any DSRF Credit Facility at the end of such period shall equal the Debt Service Reserve Requirement. If the Debt Service Reserve Account applicable to any such Series of Bonds is to be funded in installments as provided in this paragraph, the deposits required to be made to the Debt Service Reserve Account applicable to any such Series of Bonds pursuant to the foregoing may be limited to the amount which will be sufficient to pay the required monthly installments specified in such resolution, plus an additional amount necessary to make up any deficiencies caused by withdrawals or resulting from valuation of investments of funds on deposit therein.

Section 410. Arbitrage Rebate Fund.

(a) The Arbitrage Rebate Fund shall be maintained by the Trustee as a fund separate from any other fund established and maintained hereunder. Within the Arbitrage Rebate Fund, the Trustee shall maintain such accounts as shall be required by the Authority in order to comply with the terms and requirements of the Tax Certificate. All money at any time deposited in the Arbitrage Rebate Fund shall be held by the Trustee in trust, to the extent required to satisfy the Rebate Requirement (as defined in the Tax Certificate), for payment to the Treasury Department of the United States of America. The Authority or the owner of any Bonds shall not have any rights in or claim to such money. All amounts deposited into or on deposit in the Arbitrage Rebate Fund shall be governed by this Section 408 and the Tax Certificate (which is incorporated herein by reference). Amounts in the Arbitrage Rebate Fund shall not be pledged to Bondholders.

(b) The Trustee shall be deemed conclusively to have complied with this Section 410 and the Tax Certificate if it follows the directions of an Authority Authorized Officer, including supplying all necessary written information in the manner provided in the Tax Certificate, and shall have no liability or responsibility for compliance (except as specifically set forth herein or in the Tax Certificate) or to enforce compliance by the Authority with the terms of the Tax Certificate.

(c) Upon the written direction of the Authority, the Trustee shall deposit in the Arbitrage Rebate Fund amounts received from the Authority, so that the balance on deposit thereto shall be equal to the Rebate Requirement. Computations of the Rebate Requirement shall be furnished by or on behalf of the Authority in accordance with the Tax Certificate. The Trustee shall have no obligation to rebate any amounts required to be rebated pursuant to this Section 410, other than from moneys held in the Funds and Accounts created under this Indenture or from other moneys provided to it by the Authority.

(d) The Trustee shall invest all amounts held in the Arbitrage Rebate Fund as provided in written directions of the Authority. In issuing such directions, the Authority shall comply with the restrictions and instructions set forth in the Tax Certificate. Moneys from the Arbitrage Rebate Fund may only be applied as provided in this Section 410.

(e) Upon receipt of written instructions and certification of the Rebate Requirement from an Authority Authorized Officer, the Trustee shall pay the amount of such Rebate Requirement to the Treasury Department of the United States of America, out of amounts in the Arbitrage Rebate Fund, as so directed. Notwithstanding any other provisions of this Indenture, the obligation to remit the Rebate Requirement to the United States of America and to comply with all other requirements of this Section 410 and the Tax Certificate shall survive the defeasance or payment in full of the Bonds.

Section 411. Renewal and Replacement Reserve Fund.

(a) Amounts in the Renewal and Replacement Reserve Fund shall be used exclusively for funding new Renewal and Replacement Costs, as certified for such Fiscal Year by the Consulting Engineers, in accordance with the Authority's Annual Budget, except as permitted otherwise by the first sentence of Section 411(c). Amounts in the Renewal and Replacement Reserve Fund shall be pledged to Bondholders.

(b) Amounts to be deposited in the Renewal and Replacement Reserve Fund in a Fiscal Year shall equal, in the aggregate (and subject to the monthly deposit required under Section 414) the Renewal and Replacement Reserve Fund Requirement for such Fiscal Year, as recommended and certified by the Consulting Engineers, and which Renewal and Replacement Reserve Fund Requirement shall be included in the Authority's Annual Budget.

(c) After a provision has been made for funding of all Renewal and Replacement Costs and for all of the other major maintenance expenditures budgeted by the Authority for any given Fiscal Year, the Authority may, at its discretion, at any point during the Fiscal Year, transfer any funds remaining in the Renewal and Replacement Reserve Fund to the Turnpike Capital Improvement Fund. Except as permitted otherwise by the preceding sentence, the amount deposited in the Renewal and Replacement Fund shall equal the amount in the Annual Budget to be deposited to the credit of such Renewal and Replacement Fund for such month.

(d) The Authority shall maintain the Renewal and Replacement Reserve Fund in a segregated account with an Authorized Depositary and shall execute and deliver to the Trustee an account control agreement or similar agreement with the Trustee and such Authorized Depositary reasonably sufficient, as confirmed in an Opinion of Bond Counsel, to perfect the pledge of, and security interest in, amounts in the Renewal and Replacement Reserve Fund under this Indenture.

Section 412. Turnpike Capital Improvement Fund.

(a) The Turnpike Capital Improvement Fund shall be separately accounted for by the Authority and shall be maintained with and by an Authorized Depositary. Amounts in the Turnpike Capital Improvement Fund may, from time to time, be disbursed or transferred by the Authority for the purposes of providing funds to pay Capital Costs on the Turnpike that are not included in the Renewal and Replacement Costs budgeted by the Authority in its then current Annual Budget. Amounts in the Turnpike Capital Improvement Fund shall be pledged to Bondholders.

(b) Amounts to be deposited in the Turnpike Capital Improvement Fund shall be the aggregate of the amounts specified at the discretion of the Authority from time to time in resolutions of the Authority as the total estimated amounts that will need to be deposited therein to fund on Capital Costs on the Turnpike that are not included in the Renewal and Replacement Costs budgeted by the Authority in its then current Annual Budget. Such amounts, once specified, at the discretion of the Authority, shall be reflected in the Authority's five-year capital improvement program for the Turnpike. That five-year capital improvement program shall include and separately identify (i) such Capital Costs of such capital improvements on the Turnpike and (ii) the Renewal and Replacement Reserve Fund Requirement, for each of the five years covered by such program all as further provided in Section 508. As the Authority makes expenditures on such Capital Costs from the Turnpike Capital Improvement Fund, an appropriate credit and reduction (in the amount of such expenditures) shall be made to the aggregate amounts required to be on deposit in such Fund.

(c) Upon the determination of the Authority in its sole discretion that funds in the Turnpike Capital Improvement Fund are not needed for such Capital Costs, and after satisfying any deficiencies in any Debt Service Fund, any Debt Service Reserve Fund, and Renewal and Replacement Fund, respectively, created under this Indenture, the Authority may transfer such amounts to the General Fund or any other Fund or Account created under this Indenture.

Section 413. General Fund.

(a) The Authority shall maintain the General Fund in a segregated account with an Authorized Depositary.

(b) As provided in Subsection 414(n), after first having made the deposits required by Subsections 414(a) through 414(m), and while any Bonds are Outstanding, the Authority shall transfer monthly from the Revenue Fund to the credit of the General Fund any funds remaining in the Revenue Fund. Moneys in the General Fund may be expended by the Authority to restore deficiencies in any Funds or Accounts created under this Indenture, and absent any such deficiency, for any of the following purposes, but for no other purposes, with no one item having priority over any of the others:

(i) to purchase or redeem Bonds;

(ii) to secure and pay the principal or redemption price of and interest on, any Senior Lien Bonds;

(iii) to secure and pay the principal or redemption price of and interest on, any Subordinate Lien Bonds;

(iii) to make payments into the Parkway Projects Fund or any other Fund or Account created under this Indenture;

(iv) to fund improvements, extensions and replacements of the Turnpike; or

(v) to further any corporate purpose of the Authority that involves expenditures on assets, operations and/or employees of the Authority and is in furtherance of the acquisition, operation, maintenance, improvement, enhancement and/or preservation of assets, operations and/or employees of the Authority.

(c) Amounts in the General Fund shall be not be pledged to Bondholders; **provided**, that moneys in the General Fund may be expended by the Authority as provided in Subsection 413(b) to restore deficiencies in any Funds or Accounts created under this Indenture.

Section 414. Flow of Funds.

The amounts in the Revenue Fund shall be withdrawn and deposited or transferred no later than the fifth day of each month in the amounts and order of priority set forth below:

(a) To the Operation and Maintenance Account in the Operation and Maintenance Fund, one-twelfth (1/12th) of the Operation and Maintenance Expenses set forth in the Authority's current Annual Budget.

(b) To the Operation and Maintenance Reserve Account in the Operation and Maintenance Fund, an amount, if any, necessary to maintain a balance therein equal to the Operation and Maintenance Reserve Account Requirement set forth in the Authority's current Annual Budget.

(c) An amount equal to one-twelfth (1/12th) of the installment of principal due on the next succeeding Bond Payment Date that is a principal payment date with respect to all Senior Lien Bonds or such lesser amount that, in each case, together with amounts already on deposit in the applicable Principal Account, will be sufficient to pay principal on all Senior Lien Bonds coming due on the next succeeding Bond Payment Date that is a principal payment date; **provided, however**, that if the first installment of principal on a Series of Bonds will be due on a date that is either less than or greater than twelve months from the date of issuance of such Series of Bonds, then the fractional amount to be deposited in the Principal Account in respect of such Series of Bonds shall be adjusted to a larger (or smaller) fraction, proportionally, based on the actual time less than (or greater than) twelve months that actually will elapse until the Bond Payment Date on which such first installment of principal will come due.

(d) An amount equal to one-twelfth (1/12th) of the amount of any sinking fund installment due on the next succeeding Bond Payment Date with respect to all Senior Lien Bonds or such lesser amount that, in each case, together with amounts already on deposit in the applicable Redemption Account, will be sufficient to pay any sinking fund installment on all Senior Lien Bonds coming due on the next succeeding Bond Payment Date; **provided, however**, that if the first sinking fund installment on a Series of Bonds will be due on a date that is either less than or greater than twelve months from the date of issuance of such Series of Bonds, then the fractional amount to be deposited in the Redemption Account in respect of such Series of Bonds shall be adjusted to a larger (or smaller) fraction, proportionally, based on the actual time less than (or greater than) twelve months that actually will elapse until the Bond Payment Date on which such first sinking fund installment will come due.

(e) An amount equal to one-sixth (1/6th) of the installment of interest due on the next succeeding Bond Payment Date with respect to all Senior Lien Bonds or such lesser amount that, in each case, together with amounts already on deposit in the applicable Interest Account, will be sufficient to pay interest on all Senior Lien Bonds coming due on the next succeeding Bond Payment Date; **provided, however**, that if the first installment of interest coming due on a Series of Bonds will be due a Bond Payment Date that is either less than or greater than six months from the date of issuance of such Series of Bonds, then the fractional amount to be deposited in the Interest Account in respect of such Series of Bonds shall be adjusted to a larger (or smaller) fraction, proportionally, based on the actual time less than (or greater than) six months that actually will elapse until the Bond Payment Date on which such first installment of interest will come due.

(f) To the applicable Account in the Senior Lien Debt Service Reserve Fund with respect to each Series of Senior Lien Bonds (or, as applicable, to any aggregate or composite Account in the Senior Lien Debt Service Reserve Fund for any Senior Lien Bonds) an amount, if any, which, together with the funds on deposit therein and the available amounts under any DSRF Credit Facility, will be sufficient to make the amounts on deposit therein equal to the Debt Service Reserve Requirement within the applicable time frame and making the applicable monthly replenishment installments, as provided under Section 407(b) or Section 407(c), as applicable, or if the Authority has exercised its option under Section 407(d) to fund the Debt Service Reserve Account in installments, the amount then required to be on deposit in the Debt Service Reserve Account in accordance with such election.

(g) To the applicable Principal Account, an amount equal to one-twelfth (1/12th) of the installment of principal due on the next succeeding Bond Payment Date that is a principal payment date with respect to all Subordinate Lien Bonds or such lesser amount that, in each case, together with amounts already on deposit in the applicable Principal Account, will be sufficient to pay principal on all Subordinate Lien Bonds coming due on the next succeeding Bond Payment Date that is a principal payment date; **provided, however**, that if the first installment of principal coming due on a Series of Bonds will be due a Bond Payment Date that is either less than or greater than twelve months from the date of issuance of such Series of Bonds, then the fractional amount to be deposited in the Principal Account in respect of such Series of Bonds shall be adjusted to a larger (or smaller) fraction, proportionally, based on the actual time less than (or greater than) twelve months that actually will elapse until the Bond Payment Date on which such first installment of principal will come due.

(h) An amount equal to one-twelfth (1/12th) of the amount of any sinking fund installment due on the next succeeding Bond Payment Date with respect to all Subordinate Lien Bonds or such lesser amount that, in each case, together with amounts already on deposit in the applicable Redemption Account, will be sufficient to pay any sinking fund installment on all Subordinate Lien Bonds coming due on the next succeeding Bond Payment Date; **provided, however**, that if the first sinking fund installment on a Series of Bonds will be due on a date that is either less than or greater than twelve months from the date of issuance of such Series of Bonds, then the fractional amount to be deposited in the Redemption Account in respect of such Series of Bonds shall be adjusted to a larger (or smaller) fraction, proportionally, based on the actual time less than (or greater than) twelve months that actually will elapse until the Bond Payment Date on which such first sinking fund installment will come due.

(i) An amount equal to one-sixth (1/6th) of the installment of interest due on the next succeeding Bond Payment Date with respect to all Subordinate Lien Bonds or such lesser amount that, in each case, together with amounts already on deposit in the applicable Interest Account, will be sufficient to pay interest on all Subordinate Lien Bonds coming due on the next succeeding Bond Payment Date; **provided, however**, that if the first installment of interest coming due on a Series of Bonds will be due a Bond Payment Date that is either less than or greater than six months from the date of issuance of such Series of Bonds, then the fractional amount to be deposited in the Interest Account in respect of such Series of Bonds shall be adjusted to a larger (or smaller) fraction, proportionally, based on the actual time less than (or greater than) six months that actually will elapse until the Bond Payment Date on which such first installment of interest will come due.

(j) To the applicable Account in the Subordinate Lien Debt Service Reserve Fund with respect to each Series of Subordinate Lien Bonds (or, as applicable, to any aggregate or composite Account in the Subordinate Lien Debt Service Reserve Fund for any Subordinate Lien Bonds) an amount, if any, which, together with the funds on deposit therein and the available amounts under any DSRF Credit Facility, will be sufficient to make the amounts on deposit therein equal to the Debt Service Reserve Requirement within the applicable time frame and making the applicable monthly replenishment installments, as provided under Section 409(b) or Section 409(c), as applicable, or if the Authority has exercised its option under Section 409(d) to fund the Debt Service Reserve Account in installments, the amount then required to be on deposit in the Debt Service Reserve Account in accordance with such election.

(k) As directed in the applicable Tax Certificate, to the Arbitrage Rebate Fund and any accounts established therein an amount, if any, necessary to maintain a balance therein equal to the Rebate Requirement.

(l) To the Renewal and Replacement Reserve Fund an amount equal to a minimum of one-twelfth of the Renewal and Replacement Reserve Fund Requirement as set forth in the Annual Budget; **provided, however**, that nothing in this Section 414(l) shall be construed as preventing the Authority in its sole discretion from depositing amounts in excess of such minimum deposit in any one month, and **provided further**, that if the Authority previously has deposited amounts in the Renewal and Replacement Reserve Fund in excess of such minimum amount, then, in its discretion, the Authority shall have the right to elect to credit, against such minimum monthly deposit, some or all of such cumulative excess deposits during the Fiscal Year to date.

(m) From time to time, to the Turnpike Capital Improvement Fund, such sums as shall be certified by the Authority in its sole discretion as necessary to be deposited therein in order to finance Capital Costs on the Turnpike that are not included in Renewal and Replacement Costs budgeted by the Authority in its then current Annual Budget, taking into account (i) funding for such Capital Costs that has been carried over in such Fund from the prior Fiscal Year and (ii) prior expenditures from such Fund for Capital Costs of capital improvement projects on the Turnpike.

(n) To the General Fund, such sums as shall be remaining in the Revenue Fund (if any) not already deposited or transferred at the times and in the amounts pursuant to subsections (a) through (m) of this Section 414 set forth above.

Section 415. Investment of Moneys.

(a) Moneys in all Funds and Accounts held by the Authority shall be invested as soon as practicable upon receipt in Permitted Investments by the Authority, and in the case of Funds and Accounts held by the Trustee, by the Trustee, as directed in writing by an Authority Authorized Officer, or, in the absence of direction by the Authority, as selected by the Trustee; provided that (i) the maturity date or the date on which such Permitted Investments may be redeemed at the option of the holder thereof shall coincide as nearly as practicable with (but in no event shall be later than) the date or dates on which moneys in the Funds or Accounts for which the investments were made will be required for the purposes thereof, and (ii) subject to subsection (h) of this Section, in the absence of direction from an Authority Authorized Officer, the Trustee, shall invest moneys in all Funds and Accounts held by the Trustee overnight in money market funds described in clause (h) of the definition of Permitted Investments.

(b) For purposes of subsection (a) of this Section, moneys in the following Funds or Accounts shall be invested in Permitted Investments maturing or redeemable at the option of the holder, including the Trustee, of such Permitted Investments not later than the respective following dates: (i) Principal Account, the last Business Day of the then current Bond year with respect to each applicable Series of Bonds set forth in the applicable Supplemental Indenture; (ii) Interest Account, the Business Day preceding the next Bond Payment Date with respect to the applicable Series of Bonds set forth in the applicable Supplemental Indenture; and (iii) Redemption Account, the Business Day preceding the next date on which Bonds of the applicable Series of Bonds set forth in the applicable Supplemental Indenture are to be redeemed.

(c) Investment of amounts in any Fund or Account shall be made in the name of such Fund or Account.

(d) Amounts credited to a Fund or Account may be invested, together with amounts credited to one or more other Funds or Accounts, in the same Permitted Investment; provided, however, that (i) each such investment complies in all respects with the provisions of subsection (a) of this Section as they apply to each Fund or Account for which the joint investment is made, and (ii) separate records are maintained for each Fund and Account and such investments are accurately reflected therein.

(e) The Trustee may make any investment permitted by this Section through or with its own commercial banking or investment departments, unless otherwise directed by the Authority.

(f) Except as otherwise specifically provided herein, in computing the amount in any Fund or Account, Permitted Investments purchased as an investment of moneys therein shall be valued at the current market value thereof or at the redemption price thereof, if then redeemable at the option of the holder, in either event inclusive of accrued interest.

(g) The holder of an investment shall sell at the market price, or present for redemption, any Permitted Investment whenever it shall be necessary to provide moneys to meet any payment or transfer from the Fund or Account for which such investment was made.

(h) The Authority shall not knowingly use or direct or permit the use of any moneys of the Authority in its possession or control in any manner which would cause any Bond to be an "arbitrage bond" within the meaning ascribed to such term in Section 148 of the Code, or any successor section of the Code.

(i) Any transfer to or deposit in any Fund or Account required by this Indenture may be satisfied by transferring or depositing an investment with a market value equal to the required transfer or deposit in lieu of transferring or depositing cash.

(j) Notwithstanding any provision of this Indenture, the Trustee shall observe its covenants and agreements contained herein, to the extent that and for so long as such covenants and agreements are required by law.

Section 416. Liability of Trustee for Investments.

The Trustee shall not be liable for making any investment authorized by the provisions of this Article in the manner provided in this Article or for any loss resulting from any such investment so made, except for its own negligence, willful misconduct or self-dealing constituting a breach of trust under applicable law.

Section 417. Investment Income or Losses.

(a) Unless otherwise specified herein or in the applicable Supplemental Indenture, all investment income or losses on all Funds and Accounts shall be credited to the Fund or Account on which such amount was earned or lost; provided, however, that earnings on amounts in Accounts in the Bond Fund with respect to a Series of Bonds shall be transferred to the Interest Account with respect to such Series. The Authority shall keep records of all such investment income or losses and the applicable Fund or Account which is the source of the income or losses for purposes of determining any rebate amount with respect to each Series.

(b) Investments in each Fund and Account shall be valued by the Authority at current market value as of June 1 and December 1 of each Fiscal Year, or, if those dates do not fall on a

Business Day, on the first Business Day thereafter. Immediately after each such valuation by the Authority, any excess in each Account in the Debt Service Reserve Funds shall be transferred to the Revenue Fund.

Section 418. Purchase Fund.

The Trustee shall establish a separate Purchase Fund for any Series of Bonds that, pursuant to the Supplemental Indenture providing for issuance of such Bonds, is or may be subject to redemption for purchase at the option of the Holders or mandatory tender for purchase. The Purchase Fund for a Series and the amounts deposited therein shall not be subject to the lien and pledge created by this Indenture but shall be held by the Trustee or Paying Agent, as applicable, for the benefit of tendering Holders of Bonds of such Series. Amounts in each Series Purchase Fund shall be held and disbursed as provided in the applicable Supplemental Indenture.

Section 419. Transfer of Excess Funds to the Authority.

Any amounts remaining in any Account of any Bond Fund or any Debt Service Reserve Fund, after payment of all Bonds and reimbursement of the Credit Provider for any drawings on or payments under any Credit Facility which were used to pay principal, premium, if any, or interest on the Bonds and all other obligations owed to the Credit Providers under any Reimbursement Agreements, the fees and expenses of the Trustee, the Paying Agent, and all other amounts required to be paid hereunder, shall be transferred to the General Fund.

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ARTICLE V

COVENANTS OF THE AUTHORITY

Section 501. Maintenance of Corporate Existence

The Authority covenants and agrees that it will maintain its corporate existence and will not merge with or into any other entity in a manner that will materially and adversely affect its ability to comply with its obligations under this Indenture and all Supplemental Indentures and provided that any successor entity must assume all of the obligations of the Authority under this Indenture, all Supplemental Indentures and all other applicable agreements.

Section 502. Payment of Principal and Interest; Pledge of the Toll Road Revenues; Negative Pledge; Annual No Default Certificate.

(a) The Authority covenants and agrees that it will pay or cause to be paid as and when due the principal of, premium, if any, interest on, and other payments with respect to each Bond issued hereunder at the place, on the dates and in the manner provided herein and in the applicable Supplemental Indenture and in such Fund according to the terms thereof but solely from the sources pledged to such payment or from such other sources or revenues as may be used for such payment. Except as expressly pledged hereunder or in any Supplemental Indenture, the Authority has no obligation to make any payment of principal of or interest on any Bond from any assets used in or revenues derived from the operation of the Turnpike or any other funds of the Authority.

(b) Without limiting the generality of the granting clauses set forth above, as security for the payment of the principal of, interest, any premium on and other payments due with respect to the Bonds, the Authority hereby grants to the Trustee a pledge of and lien on the Net Toll Road Revenues, subject only to application as provided herein and in any Supplemental Indenture. To the fullest extent provided by the Act and other applicable law, such pledge shall be valid and binding from and after the date hereof and all Net Toll Road Revenues so pledged and thereafter received by the Authority shall immediately be subject to the lien of such pledge without any physical delivery thereof or further act, and the lien of any such pledge shall be valid and binding as against all parties having claims of any kind in tort, contract or otherwise against the Authority irrespective of whether such parties have notice thereof. Neither the Bond Authorizing Resolution nor this Indenture by which the pledge is created need to be filed or recorded except in the records of the Authority.

(c) The Authority covenants and agrees that it will not create any pledge, lien or encumbrance upon, or permit any pledge, lien or encumbrance to be created on, Toll Road Revenues except for a pledge, lien or encumbrance subordinate to the pledge and lien granted hereby for the benefit of the Senior Lien Bonds or as otherwise permitted hereby or by any Supplemental Indenture.

(d) Neither the State nor the Authority shall be obligated to pay the principal of or interest on the Bonds and neither the faith and credit nor the taxing power of the State or any political subdivision thereof nor the Authority is pledged to the payment of the principal of or interest on the Bonds. The Authority's obligations under this Indenture and the Bonds shall be limited to payment from Net Toll Road Revenues. The Authority has no taxing power.

(e) The Authority shall deliver to the Trustee within 90 days after the close of each Fiscal Year, a certificate signed by an Authority Authorized Officer stating that during such Fiscal Year, and as of the date of such certificate, no event or condition has happened or existed, or is happening or existing, which constitutes, or which, with notice or lapse of time or both, would constitute an Event of Default under this Indenture, or if such an event or condition has happened or existed, or is happening or existing, specifying the nature and period of such event or condition and what action the Authority has taken, is taking or proposes to take with respect thereto, and directing, if necessary, the Trustee to take actions in provided in Section 603.

Section 503. Operation and Maintenance of Turnpike in Good Repair; Appointments of Consulting Engineers and Traffic and Revenue Consultant; Annual Inspection and Report of Consulting Engineers on Condition of Turnpike; Role of Consulting Engineers in Annual Budget-Making Process.

(a) The Authority will at all times operate the Turnpike, or cause the Turnpike to be operated, in an efficient manner and at reasonable cost; will maintain, preserve and keep, or cause to be maintained, preserved and kept, the properties of the Turnpike and all additions and betterments thereto and thereof, and every part and parcel thereof, in good repair, working order and condition; and to that end will from time to time make, or cause to be made, all necessary and proper repairs, renewals, replacements, additions, extensions and betterments thereto.

(b) The Authority covenants that it will, for the purpose of performing and carrying out the duties imposed on the Consulting Engineers by this Indenture, employ an independent engineer or engineering firm or corporation having a nationwide and favorable reputation or skill and experience in such work. The Authority shall file copies of its appointments of the Consulting Engineers with the Trustee and provide copies thereof to any Bondholder who shall make request therefor.

(c) The Consulting Engineers shall make a physical examination and inspection of the Turnpike once a year and shall submit to the Authority a written annual report on the condition of the Turnpike prior to the end of each Fiscal Year. Each such report shall be in sufficient detail to show whether the Authority in operating the Turnpike has maintained it in good repair, working order and condition, and whether the Authority has complied with the covenants set forth in this Indenture with respect to the efficient management of the Turnpike, the proper maintenance of the properties of the Turnpike, and the making of necessary repairs, renewals and replacements thereto and thereof and the necessity for capital replacements and improvements, and recommendations therefor made by the Consulting Engineers. If the Authority shall have in any way failed to perform or comply with the covenants and agreements mentioned in the previous sentence, such report shall specify the detail of such failure. The Consulting Engineers shall annually certify to the Authority and include in their reports their recommendations as to the amounts that are necessary to be expended for the Renewal and Replacement Reserve Fund Requirement for the Turnpike for not less than each of the five (5) next succeeding Fiscal Years. The Authority covenants to include such estimates of the Renewal and Replacement Reserve Fund Requirement in its five-year capital program for the Turnpike that the Authority is required to include with and as part of its Annual Budget.

Copies of all such reports shall be filed with the Authority, the Trustee and any Bondholder who shall make request therefor.

Section 504. Instruments of Further Assurance.

The Authority covenants and agrees that it will do, execute, acknowledge and deliver or cause to be done, executed, acknowledged and delivered, such instruments supplemental hereto and such further acts, instruments and transfers as the Trustee reasonably may require for the better assuring, transferring, conveying, pledging, assigning and confirming unto the Trustee the Authority's interest in and to the Toll Road Revenues as a perfected security interest, subject to application as provided herein and in any Supplemental Indenture, and all other property that is conveyed, pledged or assigned to secure or provide for the payment of the principal, premium, if any, and interest on the Bonds in the manner and to the extent contemplated herein or therein, including the filing of any required financing statements and continuation statements and/or other filings or recordings under the Uniform Commercial Code or other laws.

Section 505. Performance of Covenants.

The Authority covenants that it faithfully will perform at all times any and all covenants, undertakings, stipulations and provisions on its part to be performed as provided herein and in any Supplemental Indenture, in each and every Bond executed, authenticated and delivered hereunder, in each Credit Facility and in all proceedings of the Authority pertaining thereto; provided, that the Authority's payment obligations under this Indenture and the Bonds shall be solely from Toll Road Revenues.

Section 506. Compliance with Laws, Rules and Regulations; Tripartite Agreement.

The Authority will comply with all valid and material requirements, including the Act and any rules, regulations, orders and directives of any governmental, legislative, executive, administrative or judicial body applicable to the Turnpike and to the Authority's operation of the Turnpike, unless the same shall be contested in good faith. The Authority covenants that it will comply with the terms, provisions, and conditions of the Tripartite Agreement.

Section 507. Notice of Events of Default and Termination Events.

The Authority covenants and agrees that it will promptly notify the Trustee of any event that constitutes an Event of Default under this Indenture or any Supplemental Indenture, or a default under any Credit Facility.

Section 508. Annual Budget.

(a) The Authority shall adopt its Annual Budget for the succeeding Fiscal Year prior to the first day of each Fiscal Year, and shall file the same with the Trustee promptly after each such Annual Budget is adopted but in any event prior to the first day of the then succeeding Fiscal Year. The certificate of the Consulting Engineers setting forth the Consulting Engineers' judgment as to the amounts necessary to be expended in such Fiscal Year for Operation and Maintenance Expenses and for the Renewal and Replacement Reserve Fund Requirement shall be included with and constitute part of the Annual Budget. In addition, the Authority shall include as part of its Annual Budget, the estimated costs to be incurred in the current Fiscal Year under its five-year capital program (which program shall include the Consulting Engineers' certified estimates for Renewal and Replacement Reserve Fund Requirements for each Fiscal Year covered by the Authority's five-year capital program).

(b) The Authority covenants that it will include in its Annual Budget sufficient amounts to fulfill the Authority's obligations under this Indenture and any Supplemental Indentures, including its obligations to pay debt service on the Bonds, to fund the Funds and Accounts in the amounts required by this Indenture and its other agreements, and to operate and maintain the Turnpike.

(c) If, for any reason, the Authority is prevented or precluded from adopting an Annual Budget, the Authority covenants that it shall continue to operate under the Annual Budget for the previous Fiscal Year, provided, however, that the Authority nonetheless shall take such action as may be required to permit it to obligate and expend moneys for (i) debt service on previously authorized obligations including, without limitation, all Annual Debt Service on Outstanding Bonds, and (ii) all other required deposits to Funds and Accounts created under this Indenture.

(d) The Authority may at any time adopt and file with the Trustee an amended Annual Budget for the remainder of the then current Fiscal Year, provided that a copy of any adopted amendment to its then current Annual Budget shall be provided to the Trustee prior to the effective date of such amendment, and the amended Annual Budget shall meet all the other requirements for an Annual Budget under this Indenture.

Section 509. Financial Records and Statements.

The Authority covenants to maintain proper books of record and accounts, in which full and correct entries shall be made in accordance with generally accepted accounting principles, of all its business and affairs. It covenants to have an annual audit made by independent certified public accountants of recognized standing and shall by December 31 after the end of each of its Fiscal Years furnish to the Trustee copies of the balance sheet of the Authority as of the end of such Fiscal Year and complete audited financial statements of the Authority for such Fiscal Year, all in reasonable detail.

Section 510. Tax Covenants.

(a) The Authority covenants that it shall not take any action, or fail to take any action, or permit any action to be taken on its behalf or cause or permit any circumstance within its control to arise or continue, if any such action or inaction would adversely affect the exclusion from gross income for federal income tax purposes of the interest on the Bonds under Section 103 of the Code. Without limiting the generality of the foregoing, the Authority covenants that it will comply with the instructions and requirements of the applicable Tax Certificate, which is incorporated herein as if fully set forth herein. This covenant shall survive payment in full or defeasance of the Bonds.

(b) In the event that at any time the Authority is of the opinion that for purposes of this Section it is necessary or helpful to restrict or limit the yield on the investment of any moneys held by the Trustee under this Indenture, the Authority shall so instruct the Trustee under this Indenture in writing, and the Trustee shall take such action as may be necessary in accordance with such instructions.

(c) Notwithstanding any provisions of this Section, if the Authority shall provide to the Trustee an opinion of Bond Counsel that any specified action required under this Section is no longer required or that some further or different action is required to maintain the exclusion from federal income tax of interest on the Bonds, the Trustee may conclusively rely on such opinion in complying with the requirements of this Section and of the applicable Tax Certificate, and the covenants hereunder shall be deemed to be modified to that extent.

Section 511. Establishment of Tolls and Free Passage.

(a) The Authority covenants and agrees that it has and shall maintain so long as any Bonds remain Outstanding and until all other obligations under this Indenture have been satisfied, the exclusive right and lawful power to establish, charge and collect Tolls, user fees and other charges for the use of the Turnpike. The Authority further covenants and agrees that it will take all reasonable measures permitted by law to enforce prompt payment to it of such Tolls, user fees and other charges when and as due.

(b) The Authority covenants that it will not allow or permit any free use of the toll facilities of the Turnpike except to officials or employees of the Authority and/or WVDOH engaged in official business of the Authority and/or WVDOH, or law enforcement officers or emergency vehicles while in the discharge of their official duties, or in the event of an emergency which is temporary, free passage is required in order to assure the health, safety, and security of customers on the Turnpike.

(c) The Authority covenants and agrees that at no time will it subject its exclusive right to establish, charge and collect Tolls and other user fees and charges for the use of the Turnpike to the approval or consent of any other individual or entity, governmental or otherwise. None of the State or any other individual or entity, governmental or otherwise, shall have any rights or responsibilities pursuant to this Indenture.

Section 512. Toll Rate Covenant.

(a) The Authority shall establish, charge, and collect Tolls for the privilege of traveling on the Turnpike at rates sufficient to meet Operation and Maintenance Expenses and produce Net Toll Road Revenues in such Fiscal Year and in each Fiscal Year thereafter that are at least:

(i) 125% of the Annual Debt Service with respect to all Outstanding Senior Lien Bonds, if any, for such Fiscal Year; and

(ii) 100% of the sum of (A) Annual Debt Service with respect to all Outstanding Bonds, (B) the amounts, if any, necessary to restore the amount on deposit in any Debt Service Reserve Fund to the applicable aggregate or composite Debt Service Reserve Requirement in accordance with this Indenture, and (C) the Renewal and Replacement Reserve Fund Requirement.

(b) All such Tolls and charges shall be established and maintained in accordance with all laws, rules, and regulations of the State or of the United States of America applicable thereto. Nothing herein shall require, however, that the Authority make any payment with respect to the Bonds which are not general obligations of the Authority except from the sources and in the manner expressly provided for such Bonds by the Authority.

(c) Prior to the first day of each Fiscal Year while any Series of Bonds are Outstanding, the Authority shall prepare its Annual Budget and deliver to the Trustee a statement in which it sets forth its conclusion as to whether Toll Road Revenues for such budgeted Fiscal Year will be sufficient to satisfy the Toll Rate Covenant set forth in subsection (a) of this Section.

(d) If either (i) the Annual Budget adopted by the Authority under Section 508 for any Fiscal Year shows that Toll Road Revenues will be inadequate to meet the Toll Rate Covenant for such Fiscal Year or (ii) the audited financial reports regarding the Turnpike prepared by the Authority show that the Authority did not satisfy the Toll Rate Covenant for a Fiscal Year, then, the Authority shall:

(i) within 30 days of the date such Annual Budget is adopted or such audit is final, whichever occurs first (and without requiring two studies for the same Fiscal Year), engage a Toll Road Consultant to conduct a study and, within 90 days of such engagement, the Toll Road Consultant shall deliver a written report to the Authority containing the results of such study and the recommendations of the Toll Road Consultant as to the actions required with respect to the operation of the Turnpike and Tolls, fees and charges for the privilege of traveling on the Turnpike in order to provide sufficient Toll Road Revenues in each subsequent Fiscal Year to comply with the Toll Rate Covenant; and

(ii) take the actions recommended by the Toll Road Consultant in such report no later than 60 days after the receipt of such report; provided, however, that if the procedural requirements for a toll increase as provided by the Act (including, without limitation, the requirements for giving public notice, holding public meetings and providing opportunities for public comment) cannot reasonably be complied with in such 60 days, and if the Authority within such 60-day period has commenced and is diligently pursuing the steps necessary to be completed to approve a toll increase, then the Authority shall have an additional 180 days to take such recommended actions; provided, further, that the Authority may take such further actions as it reasonably determines are likely to produce results similar to those recommended by the Toll Road Consultant, as certified by an Authority Authorized Officer; and provided, further, that if the Toll Road Consultant reasonably believes that such further actions as are described in such certificate are not reasonably likely to produce results similar to those recommended by the Toll Road Consultant, then the Toll Road Consultant shall so notify the Authority in writing and provide a copy of such notification to the Trustee within 30 days after receiving the Authority Authorized Officer certificate.

(e) Failure to comply with the Toll Rate Covenant shall not constitute an Event of Default if (i) the Authority complies with the covenants described in subsections (c) and/or (d) of this Section and (ii) the Toll Road Consultant provides a written opinion stating that the actions required in order to produce the required Toll Road Revenues are impracticable at that time and the Authority has commenced the necessary steps to enact increased tolls and charges within the 60-day period as provided under Section 512(d)(ii), and has been diligently pursuing the completion of such steps and enactment of such toll increase and charges to comply as nearly as possible with the recommendation of the Toll Road Consultant, but still is unable to comply with subsection (a) of this Section. For purposes of this subsection, "***impracticable***" means (A) such actions would not result in an increase in Toll Road Revenues that is sufficient to comply with the Toll Rate Covenant, (B) the economic cost of taking such actions exceeds the economic benefit resulting from such actions or (C) the Authority does not have sufficient available funds to pay the cost of taking such actions.

(f) If any study conducted pursuant to subsection (d) of this Section concludes that actions with respect to the operation of the Turnpike and Tolls, fees and charges for the privilege of traveling on the Turnpike will not provide sufficient Toll Road Revenues in each subsequent Fiscal Year to comply with Toll Rate Covenant, the Authority shall use its best efforts to collect revenues from other sources that will enable it to comply with the Toll Rate Covenant.

(g) The Authority shall not reduce tolls unless and until the Toll Road Consultant certifies that the Toll Rate Covenant will be achieved, after the application of such reduction, in the current Fiscal Year and all future Fiscal Years Bonds are then Outstanding.

(h) If the Authority shall adopt a new or revised Toll Rate Schedule, in accordance with the procedures and requirements under the Act, the Authority shall provide a certified copy of such new or revised Toll Rate Schedule to the Trustee.

Section 513. Operation and Maintenance of Turnpike – Additional Covenants.

(a) The Authority covenants and agrees that it has taken, and, so long as any Bonds are Outstanding, that it will take, all steps necessary to ensure that it will continue to have lawful right and lawful power to operate and maintain the Turnpike as a revenue-producing facility consistent with its obligations under the Act.

(b) The Authority covenants and agrees that it will pay all Operation and Maintenance Expenses in accordance with customary business practices.

(c) The Authority covenants that it will, from time to time, duly pay and discharge, or cause to be paid and discharged, any taxes, assessments or other governmental charges lawfully imposed upon the Turnpike or upon any part thereof, or upon the Toll Road Revenues, when the same shall become due, as well as any lawful claim for labor, materials, or supplies which, if unpaid, might by law become a lien or charge upon the Turnpike or the Toll Road Revenues, or which might impair the security of the Bonds.

Section 514. Retention of Assets.

The Authority covenants and agrees that it will not dispose of assets necessary to operate the Turnpike in the manner and at the levels of activity required to enable it to perform its covenants contained herein, including, without limitation, the covenants contained in Section 511.

Section 515. Insurance.

(a) The Authority shall at all times cause to be maintained, to the extent reasonably obtainable, the following kinds of insurance with responsible insurance and/or reinsurance companies authorized and qualified to do business in (or with companies duly authorized and qualified to do business with companies that are authorized and qualified to do business in) the State, in such amounts as recommended by the Consulting Engineers as provided below or as determined by the Authority:

(i) multi-risk insurance on the facilities of the Turnpike which are of an insurable nature and of the character usually insured by those operating similar facilities, covering direct physical loss or damage thereto from causes customarily insured against, in such amounts recommended by the Consulting Engineers to provide against such loss or damage and to protect the interest of the Authority;

(ii) use and occupancy insurance covering loss of Toll Road Revenues by reason of necessary interruption, total or partial, in the use of the facilities of the Turnpike, due to loss or damage to any such facility on which multi-risk insurance is maintained as provided in this Section, in such amount as recommended by the Consulting Engineers to provide income during the period of interruption, but in no event less than 12 months, in the event of the occurrence or any such loss or damage, equal to the amount of the loss of Toll Road Revenues, computed on the basis of Toll Road Revenues for the corresponding period during the preceding calendar year, or if such facility was not in operation during the preceding calendar year, then computed on the basis of the Consulting Engineers' estimate, attributable to such loss or damage;

(iii) public liability insurance covering injuries to persons or property, in such amount as recommended by the Consulting Engineers;

(iv) war risk insurance, if obtainable from the United States Government or any agency thereof, covering direct physical loss or damage, and loss of Toll Road Revenues attributable thereto, on the facilities of the Turnpike which are insurable thereunder;

(v) during the period of construction or reconstruction of any material portion of the facilities of the Turnpike, such insurance as is customarily carried by others with respect to similar structures used for similar purposes, **provided, however**, that the Authority shall not be required to maintain any such insurance to the extent that such insurance is carried for the benefit of the Authority by contractors, and **provided, further,** that the Authority shall require contractors constructing any such portion of the facilities of the System to file bonds or undertakings for the full performance of such contracts, and under which all risks from any cause whatsoever, without any exceptions, during the period of such construction, shall be assumed by such contractors; and

(vi) any additional or other insurance as the Authority in its discretion may determine;

provided, however, that the Authority may self-insure, in whole or in part, with the approval of the Consulting Engineers, against public liability for bodily injury and property damage, loss of Toll Revenues normally covered by use and occupancy insurance and other risks not enumerated above to the extent permitted by law and up to the levels recommended by the Consulting Engineers or a recognized, independent insurance consultant. The adequacy of any self-insurance reserve, or other insurance reserve, established by the Authority shall be evaluated annually by the Authority in consultation with the Consulting Engineers (or a recognized, independent insurance consultant). Deficiencies, if any, in any such self-insurance reserve, or other insurance reserve, shall be made up in accordance with the recommendations of the Consulting Engineers. Except to the extent such coverage is provided by the Authority, such policies shall be taken in the names of the Authority and the Trustee for the benefit of the Holders.

(b) The proceeds of such insurance policies covering loss or damage shall at the direction of the Authority either (i) be applied to the redemption of Bonds or (ii) be paid to the Authority and held by the Authority in a special trust account for the sole purpose of reconstructing or replacing the facility or reimbursing the Authority if the Authority has advanced funds for such reconstruction or replacement. If such proceeds are insufficient to reconstruct or replace the damaged facilities, any deficiency thereof shall be provided by the Authority from lawfully available funds. Any proceeds of use and occupancy insurance paid to the Authority shall be deposited promptly by the Authority into the applicable Debt Service Fund if necessary to prevent a default in payment thereon.

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ARTICLE VI
DEFAULT AND REMEDIES

Section 601. Events of Default.

Subject to the limitation that nonpayment alone of principal of, premium, if any, or interest on any Subordinate Lien Bond shall not constitute an Event of Default with respect to Senior Lien Bonds, each of the following is hereby declared an "***Event of Default***" hereunder with respect to a Series of Bonds:

(a) if payment by the Authority in respect of any installment of principal or interest on any Bond of such Series shall not have been made in full when the same became due and payable, whether at maturity or by proceedings for redemption or otherwise;

(b) if payment by the Authority in respect of any Regularly Scheduled Hedge Payment or any payment pursuant to a Reimbursement Agreement with any Credit Provider with respect to any Bond of such Series shall not have been made in full when the same becomes due and payable;

(c) if the Authority shall fail to observe or perform any covenant or agreement on its part under this Indenture, other than the Toll Rate Covenant, for a period of 60 days after the date on which written notice of such failure, requiring the same to be remedied, shall have been given to the Authority by the Trustee, or to the Authority and the Trustee by the Holders of at least 50.01% in aggregate principal amount of Bonds of a Series then Outstanding; provided, however, that if the breach of covenant or agreement is one which cannot be completely remedied within the 60 days after written notice has been given, it shall not be an Event of Default with respect to such Series as long as the Authority has taken active steps within the 60 days after written notice has been given to remedy the failure and is diligently pursuing such remedy; or

(d) if the Authority shall institute proceedings to adjudicate its bankruptcy or insolvency, or shall consent to the institution of bankruptcy or insolvency proceedings against it, or shall file a petition or answer or consent seeking reorganization or relief under the Federal Bankruptcy Code or any other similar applicable Federal or state law, or shall consent to the filing of any such petition or to the appointment of a receiver, liquidator, assignee, trustee or sequestrator (or other similar official) of the Authority or of any substantial part of the Turnpike or shall make an assignment for the benefit of creditors, or shall admit in writing its inability to pay its debts generally as they become due.

(e) The first Supplemental Indenture pursuant to which Subordinate Lien Bonds are issued shall specify all Events of Default applicable to the Subordinate Lien Bonds, and Events of Default (if any) that are applicable only to a particular Series of Subordinate Lien Bonds shall be set forth in the applicable Supplemental Indenture under which such Series was issued.

Section 602. No Acceleration or Cross Default with Respect to the Bonds.

There shall be no right of acceleration with respect to the Bonds. An Event of Default with respect to the Subordinate Lien Bonds shall not cause an Event of Default with respect to any Senior Lien Bonds, unless such event or condition on its own constitutes an Event of Default with respect to the Senior Lien Bonds pursuant to Section 601.

Section 603. Remedies and Enforcement of Remedies under the Indenture.

(a) Subject to the provisions of Section 615, upon the occurrence and continuance of any Event of Default with respect to a Series of Bonds, the Trustee may or, upon the written request of the Holders of not less than 50.01% in an aggregate principal amount of the Bonds of such Series, together with indemnification of the Trustee to its satisfaction therefor, shall proceed to protect and enforce its rights and the rights of the Bondholders under this Indenture, the Act and such Bonds by such suits, actions or proceedings, as the Trustee, being advised by counsel, shall deem expedient, including but not limited to:

(i) Civil action to recover money or damages due and owing;

(ii) Civil action to enjoin any acts or things, which may be unlawful or in violation of the rights of the Holders of such Bonds; and

(iii) Enforcement of any other right of such Bondholders conferred by law, including the Act, or hereby, including, without limitation, by suit, action, injunction, mandamus or other proceedings to enforce and compel the performance by the Authority of actions required by the Act or this Indenture, including the fixing, charging and collecting of Tolls, fees and charges for the privilege of traveling on the Turnpike.

(b) Subject to the provisions of Section 607, regardless of the happening of an Event of Default, the Trustee, if requested in writing by the Holders of not less than 25% in aggregate principal amount of the Bonds of a Series, shall upon being indemnified to its satisfaction therefor, institute and maintain such suits and proceedings as it may be advised shall be necessary or expedient (i) to prevent any impairment of the security hereunder by any acts or omissions to act which may be unlawful or in violation hereof, or (ii) to preserve or protect the interests of the Holders, provided that such request is in accordance with law and the provisions hereof and, in the sole judgment of the Trustee, is not unduly prejudicial to the interest of the Holders of Bonds of each Series not making such request.

(c) Notwithstanding anything else in this Section, the remedies provided herein with respect to using the moneys on deposit in the Funds or the Accounts hereunder shall be limited to the Funds or Accounts hereunder pledged to the applicable Series of Bonds with respect to which an Event of Default exists.

Section 604. Application of Toll Road Revenues and Other Moneys After Default.

During the continuance of an Event of Default with respect to any Series of Bonds, all moneys held in trust and pledged hereunder and received by the Trustee with respect to such Series of Bonds pursuant to any right given or action taken under the provisions of this Article shall, after payment of the expenses and advances incurred or made by the Trustee, any Credit Provider or the Bondholders with respect thereto, including reasonable costs and expenses of counsel, be applied according to the accrued debt service deposits or payments with respect to each such Series as follows; provided, however, that money drawn under a Credit Facility, if any, and amounts held in Accounts in any Bond Fund and any Debt Service Reserve Fund shall be applied solely to pay interest or principal, as applicable, on the related Series of Bonds:

First: To the payment of all installments of interest then due on any Senior Lien Bonds in the order of maturity of such installments, including installments of interest due with respect to any mandatory sinking fund redemption, Regularly Scheduled Hedge Payments or any payments made on any Senior Lien Bonds pursuant to a Reimbursement Agreement, and, if the amount available shall not be sufficient to pay in full any installment, then to the payment of the amounts due on such date ratably, without any discrimination or preference;

Second: To the payment of any principal or redemption price of any Senior Lien Bonds which shall have become due, whether at maturity or by call for redemption or otherwise or upon the tender of any Senior Lien Bonds pursuant to the terms of the Supplemental Indenture providing for the issuance of such Senior Lien Bonds, as well as any principal due with respect to Regularly Scheduled Hedge Payments or any payments made on any Senior Lien Bonds pursuant to a Reimbursement Agreement, and, if the amount available shall not be sufficient to pay in full all Senior Lien Bonds and any related obligations described above due on any particular date, then to the payment of the amounts due on such date ratably, without any discrimination or preference;

Third: To the payment of all installments of interest then due on any Subordinate Lien Bonds in the order of maturity of such installments, including installments of interest due with respect to any mandatory sinking fund redemption, Regularly Scheduled Hedge Payments or any payments made on any Subordinate Lien Bonds pursuant to a Reimbursement Agreement, and, if the amount available shall not be sufficient to pay in full any installment, then to the payment of the amounts due on such date ratably, without any discrimination or preference;

Fourth: To the payment of any principal or redemption price of any Subordinate Lien Bonds which shall have become due, whether at maturity or by call for redemption or otherwise or upon the tender of any Subordinate Lien Bonds pursuant to the terms of the Supplemental Indenture providing for the issuance of such Subordinate Lien Bonds, as well as any principal due with respect to Regularly Scheduled Hedge Payments or any payments made on any Subordinate Lien Bonds pursuant to a Reimbursement Agreement, and, if the amount available shall not be sufficient to pay in full all Subordinate Lien Bonds and any related obligations described above due on any particular date, then to the payment of the amounts due on such date ratably, without any discrimination or preference.

Whenever moneys are to be applied by the Trustee pursuant to the provisions of this Section, such moneys shall be applied by it at such times, and from time to time, as the Trustee shall determine in accordance with this Indenture, having due regard for the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future. Whenever the Trustee shall apply such moneys, it shall fix the date (which shall be a Bond Payment Date unless it shall deem another date more suitable) upon which such application is to be made and upon such date interest on the principal amounts to be paid on such dates shall cease to accrue if so paid. The Trustee shall give such notice as it may deem appropriate in accordance with this Indenture of the deposit with it of any such moneys and of the fixing of any such date, and shall not be required to make payment to the Holder of any Bond until such Bond shall be presented to the Trustee for appropriate endorsement of any partial payment or for cancellation if fully paid.

Whenever all installments of interest then due on the Outstanding Bonds and all unpaid principal amounts of any Outstanding Bonds that shall have become due have been paid under the provisions of this Section and all expenses and charges of the Trustee have been paid, and each Credit Provider, if any, has been reimbursed for all amounts drawn under the applicable Credit Facility, if any, and used to pay principal, premium, if any, and interest on the Outstanding Bonds, the Authority shall resume making the transfers from the Revenue Fund in the amounts and according to the priority set forth in Section 414.

Section 605. Remedies Not Exclusive.

No remedy by the terms hereof conferred upon or reserved to the Trustee or the Bondholders or any Credit Provider is intended to be exclusive of any other remedy but each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder or existing at law or in equity or by statute, including the Act, on or after the date hereof.

Section 606. Remedies Vested in Trustee.

All rights of action (including the right to file proof of claims) hereunder or under any of the Bonds may be enforced by the Trustee without the possession of any of the Bonds or the production thereof in any trial or other proceedings relating thereto. Any such suit or proceeding instituted by the Trustee may be brought in its name as the Trustee without the necessity of joining as plaintiffs or defendants any Holders of the Bonds. Subject to the provisions of Section 606, any recovery or judgment shall be for the equal benefit of the Holders of the Outstanding Bonds.

Section 607. Control of Proceedings.

(a) For the purpose of this Section 607 only, the Holders of the Senior Lien Bonds may control the proceedings if there is an Event of Default with respect to the Senior Lien Bonds; provided, however, that the provisions of Section 606 shall apply with respect to the application of Toll Road Revenues and other moneys after an Event of Default. Subject to the foregoing and the additional limitation that nonpayment of principal of, purchase price of, if applicable, premium, if any, or interest on any Subordinate Lien Bonds shall not alone constitute an Event of Default while any Senior Lien Bonds are Outstanding or remain unpaid, if an Event of Default with respect to a Series of Bonds shall have occurred and be continuing, the Holders of a majority in aggregate principal amount of Bonds of such Series then Outstanding shall have the right, at any time, by any instrument in writing executed and delivered to the Trustee, to direct the method and place of conducting any proceeding to be taken with respect to funds or assets solely securing such Series in connection with the enforcement of the terms and conditions hereof, provided that such direction (i) is in accordance with law and the provisions hereof (including indemnity to the Trustee as provided herein) and (ii), in the sole judgment of the Trustee, is not unduly prejudicial to the interest of Bondholders of each Series of Bonds not joining in such direction, and provided further that nothing in this Section shall impair the right of the Trustee in its discretion to take any other action hereunder which it may deem proper in accordance with this Indenture and which is not inconsistent with such direction by Bondholders.

(b) If an Event of Default with respect to all Series of Bonds shall have occurred and be continuing, the Holders of a majority in aggregate principal amount of all Senior Lien Bonds then outstanding shall have the right, at any time, by any instrument in writing executed and delivered to the Trustee to direct the method and place of conducting any proceeding to be taken with respect to the Toll Road Revenues or other assets securing all Bonds in connection with the enforcement of the terms and conditions hereof, provided that such direction is in accordance with law and the provisions hereof (including indemnity to the Trustee as provided herein) and, in the sole judgment of the Trustee, is not unduly prejudicial to the interest of Bondholders not joining in such direction and provided further that nothing in this Section shall impair the right of the Trustee in its discretion to take any other action hereunder which it may deem proper in accordance with this Indenture and which is not inconsistent with such direction by Bondholders.

(c) No owner of any Subordinate Lien Bond shall have any right to institute any judicial or other action or remedial proceeding (including, without limitation, bankruptcy or insolvency proceedings) against the Authority or any of the Authority's other rights, interests, assets or properties, to collect any moneys due, to enforce payment on its Subordinate Lien Bond so long as any Senior Lien Bonds remain Outstanding without the written consent of a majority of the aggregate principal amount of the Senior Lien Bonds then Outstanding. Any action commenced by an owner of any Subordinate Lien Bond shall terminate upon annulment of the default in respect of the Senior Lien Bonds.

Section 608. Individual Bondholder Action Restricted.

(a) No Holder of any Bond shall have any right to institute any suit, action, or proceeding in equity or at law for the enforcement hereof or for the execution of any trust hereunder or for any remedy hereunder unless:

(i) an Event of Default has occurred with respect to such Series (A) under subsection (a) or (b) of Section 601 of which the Trustee is deemed to have notice, or (B) under subsection (c), (d) or (e) of Section 601 as to which a Responsible Officer has actual knowledge or as to which the Trustee has been notified in writing by the Authority;

(ii) in the case of an Event of Default under subsection (a) or (b) of Section 601, the Holders of at least 51% in aggregate principal amount of Bonds of such Series then Outstanding, or in the case of an Event of Default under subsection (c), (d), or (e) of Section 601, the Holders of at least 51% in aggregate principal amount of all Bonds Outstanding shall have made written request to the Trustee to proceed to exercise the powers granted herein or to institute such action, suit or proceeding in its own name;

(iii) such Bondholders shall have offered the Trustee indemnity as provided in Section 702;

(iv) the Trustee shall have failed or refused to exercise the powers herein granted or to institute such action, suit or proceedings in its own name for a period of 60 days after receipt by it of such request and offer of indemnity; and

(v) during such 60-day period no direction inconsistent with such written request has been delivered to the Trustee by the Holders of a majority in aggregate principal amount of Bonds of such Series then Outstanding in accordance with Section 609.

(b) No one or more Holders of Bonds of such Series shall have any right in any manner whatsoever to affect, disturb or prejudice the security hereof or to enforce any right hereunder except in the manner herein provided and for the equal benefit of the Holders of all Bonds of such Series then Outstanding.

(c) Nothing contained herein shall affect or impair, or be construed to affect or impair, the right of the Holder of any Bond of such Series (i) to receive payment of the principal of or interest on such Bond on or after the due date thereof or (ii) to institute suit for the enforcement of any such payment on or after such due date; provided, however, no Holder of any Bond of such Series may institute or prosecute any such suit or enter judgment therein if, and to the extent that, the institution or prosecution of such suit or the entry of judgment therein would, under applicable law, result in the surrender, impairment, waiver or loss of the lien hereof on the moneys, funds and properties pledged hereunder for the equal and ratable benefit of all Holders of Bonds of such Series.

(d) Neither the Holder of any Bond of a Series nor the Trustee shall name or join WVDOH, or the State or any officer thereof in any legal proceeding seeking remedies provided hereunder or other enforcement of this Indenture except to the extent joining WVDOH is required as a necessary party in order to give a court jurisdiction over such action.

Section 609. Termination of Proceedings.

In case any proceeding taken by the Trustee on account of an Event of Default shall have been discontinued or abandoned for any reason or shall have been determined adversely to the Trustee or to the Bondholders, then the Authority, the Trustee and the Bondholders shall be restored to their former positions and rights hereunder, and all rights, remedies and powers of the Trustee and the Bondholders shall continue as if no such proceeding had been taken.

Section 610. Waiver of Event of Default.

(a) No delay or omission of the Trustee, of any Holder of the Bonds or, if provided by Supplemental Indenture, any Credit Provider to exercise any right or power accruing upon any Event of Default shall impair any such right or power or shall be construed to be a waiver of any such Event of Default or an acquiescence therein. Every power and remedy given by this Article to the Trustee, the Holders of the Bonds and, if provided by Supplemental Indenture, any

Credit Provider, respectively, may be exercised from time to time and as often as may be deemed expedient by them.

(b) The Trustee, with the written consent of any Credit Provider, if provided by Supplemental Indenture (provided, however, that such Credit Provider's consent may be required only in connection with an Event of Default on a Series of Bonds with respect to which such Credit Provider is providing a Credit Facility), may waive any Event of Default with respect to the Bonds, that in its opinion, shall have been remedied at any time, regardless of whether any suit, action or proceeding has been instituted, before the entry of final judgment or decree in any suit, action or proceeding instituted by it under the provisions hereof, or before the completion of the enforcement of any other remedy hereunder.

(c) Notwithstanding anything contained herein to the contrary, the Trustee, upon the written request of (i) the Credit Provider, if any, if provided by a Supplemental Indenture, with respect to an Event of Default which applies only to the related Series of Bonds, (ii) Holders of at least a majority of the aggregate principal amount of Bonds of a Series then Outstanding with respect to any Event of Default which applies only to such Series, with the consent of the applicable Credit Provider, if any, if provided by a Supplemental Indenture or (iii) Holders of at least a majority of the aggregate principal amount of Bonds then Outstanding with respect to any Event of Default which applies to all Bonds, shall waive any such Event of Default hereunder and its consequences; provided, however, that a default in the payment of the principal amount of, premium, if any, or interest on any such Bond, when the same shall become due and payable by the terms thereof or upon call for redemption, may not be waived without the written consent of the Holders of all the Bonds then Outstanding of such Series to which an Event of Default applies and any consent of the applicable Credit Provider, if any, if provided by a Supplemental Indenture.

(d) In case of any waiver by the Trustee of an Event of Default hereunder, the Authority, the Trustee, the Bondholders and, if provided by a Supplemental Indenture, the Credit Provider shall be restored to their former positions and rights hereunder, respectively, but no such waiver shall extend to any subsequent or other Event of Default or impair any right consequent thereon. The Trustee shall not be responsible to any one for waiving or refraining from waiving any Event of Default in accordance with this Section.

Section 611. Notice of Event of Default.

(a) As soon as possible after the occurrence of an Event of Default with respect to a Series of Bonds under Section 601(a), promptly, but in any event within 10 days after (i) the occurrence of an Event of Default with respect to a Series of Bonds under Section 601(a) or (b), of which the Trustee hereby is deemed to have notice, or (ii) receipt, in writing or otherwise, by a Responsible Officer of the Trustee of actual knowledge or notice of an Event of Default with respect to a Series of Bonds under Section 601(c) or (d), the Trustee shall, unless such Event of Default shall have theretofore been cured, give written notice thereof by first class mail to the Authority, the Registrar, each Holder of Bonds of such Series then Outstanding, any Credit Provider and, as long as the Bonds are held in book-entry form, to the Securities Depository in lieu of the Holders of the Bonds, provided that, except in the case of a default in the payment of principal amounts, Sinking Fund installments, or the redemption price of or interest on any of the Bonds of such Series, the Trustee may withhold such notice to such Holders if, in its sole judgment in accordance with this Indenture, it determines that the withholding of such notice is in the best interest of the Holders of such Series of Bonds.

(b) The Trustee shall promptly notify the Authority or any other person, of every notice of election to sell, notice of sale or other notice required by law or by this Indenture in connection with the exercise of remedies under this Indenture.

Section 612. Limitations on Remedies.

It is the purpose and intention of this Article to provide rights and remedies to the Trustee and Bondholders which lawfully may be granted pursuant to the provisions of the Act, but should any right or remedy herein granted be held to be unlawful, the Trustee and the Bondholders shall be entitled to every other right and remedy provided in this Indenture and by law. The Authority has no obligation to make any payment of any Bond or the interest thereon from any assets used in or revenues derived from the operation of the Turnpike or any other funds of the Authority.

Section 613. Credit Providers to Control Remedies.

While a Credit Facility with respect to a Series of Bonds is in effect, notwithstanding anything else herein to the contrary, a Supplemental Indenture may provide that no right, power or remedy hereunder with respect to such Series of Bonds may be pursued without the prior written consent of such Credit Provider and a Supplemental Indenture may provide that the Credit Provider shall have the right to direct the Trustee to pursue any right, power or remedy available hereunder with respect to any assets available hereunder which secure no Bonds other than the Series of Bonds secured by such Credit Facility, including, without limitation, any right, power or remedy with respect to Toll Road Revenues or other assets securing all Bonds.

Section 614. Inconsistent or Lack of Directions in Default.

Notwithstanding anything else herein to the contrary, if any applicable Credit Providers or Holders of separate Series in default do not direct remedies or proceedings to be taken pursuant to this Article, the Trustee shall take whatever action, if any, pursuant to Section 606 it deems to be in the best interest of Bondholders without regard to the existence of any Credit Facility that may exist with respect to any or all Bonds.

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ARTICLE VII
THE TRUSTEE

Section 701. Acceptance of Trust; General.

By execution hereof or by authenticating one or more Bonds, the Trustee shall evidence its acceptance of the powers, duties and obligations of the Trustee only as are specifically set forth herein. The Trustee shall have no duty, responsibility or obligation for the issuance of Bonds or for the validity or exactness hereof, or of any other document relating to such issuance. The Trustee shall have no duty, responsibility or obligation for the payment of Bonds except for payment in accordance with the terms and provisions hereof from, and to the extent of, funds which are held in trust by the Trustee for the purpose of such payment.

Prior to an Event of Default and after the curing or waiving of all Events of Default which may have occurred, the Trustee shall not be liable except for the performance of such duties as are specifically set forth herein. The Trustee shall have no liability for any act or omission to act hereunder, or under any other instrument or document executed pursuant hereto except for the Trustee's own negligent action, its own negligent failure to act or its own willful misconduct. The duties and obligations of the Trustee shall be determined solely by the express provisions hereof, and no implied powers, duties or obligations of the Trustee shall be read into this Indenture.

During an Event of Default, the Trustee shall exercise such of the rights and powers vested in it hereby, and shall use the same degree of care and skill in its exercise, as a prudent man would exercise or use under the circumstances in the conduct of his own affairs.

The Trustee shall not be required to expend or risk its own funds or otherwise incur individual liability in the performance of any of its duties or in the exercise of any of its rights or powers as the Trustee, except as may result from its own negligent action, its own negligent failure to act or its own willful misconduct.

Notwithstanding any other provision hereof, the Trustee shall have no liability for any (a) error of judgment made in good faith by a Responsible Officer or Officers of the Trustee, unless it shall be proved that the Trustee was negligent in ascertaining the pertinent facts or (b) action taken or omitted to be taken by it in good faith in accordance with the direction of the Holders of not less than a majority in principal amount of Bonds then Outstanding, then existing relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred upon the Trustee hereunder.

Section 702. Trustee Not Required to Take Action Unless Indemnified.

Except as expressly required herein (including the requirements of the next sentence) the Trustee neither shall be required to institute any suit or action or other proceeding in which it may be a defendant, nor to take any steps to enforce its rights and expose it to liability, nor shall the Trustee be deemed liable for failure to take any such action, unless and until it shall have been indemnified, to its satisfaction, against any and all reasonable costs, expenses, outlays, counsel and other fees, other disbursements including its own reasonable fees and against all liability and damages. The Trustee nevertheless, may begin suit, or appear in and defend suit, or do anything else which in its judgment is proper to be done by it as the Trustee, without prior assurance of indemnity, and , to the extent permitted by law, in such case the Authority shall reimburse the Trustee for all reasonable costs, expenses, outlays, counsel and other fees, and other reasonable disbursements including its own fees, and for all liability and damages suffered by the Trustee in connection therewith, except for the Trustee's own negligent action, its own negligent failure to act, its own willful misconduct or self-dealing constituting a breach of trust under applicable law. If the Trustee begins, appears in or defends such a suit, the Trustee shall give reasonably prompt notice of such action to the Authority and shall give such notice prior to taking such action if possible. If the Authority shall fail to make reimbursement, the Trustee may reimburse itself for any such costs and expenses in accordance with Section 607.

Section 703. Employment of Experts.

The Trustee is hereby authorized to employ as its agents such attorneys at law, and other qualified independent consultants (who are not employees of the Trustee), as it may deem necessary to carry out any of its obligations hereunder, and shall be reimbursed by the Authority for all reasonable expenses and charges in so doing. The Trustee shall not be responsible for any misconduct or negligence of any such agent appointed with due care by the Trustee.

Section 704. Enforcement of Performance by Others.

It shall not be the duty of the Trustee, except as herein specifically provided, to seek the enforcement of any duties and obligations herein imposed upon the Authority.

Section 705. Right to Deal in Bonds and Take Other Actions.

The Trustee may in good faith buy, sell or hold and deal in any Bonds with like effect as if it were not such Trustee and may commence or join in any action which a Holder is entitled to take with like effect as if the Trustee were not the Trustee. It is understood and agreed that the Trustee engages in a general banking business and no provision hereof is to be construed to limit or restrict the right of the Trustee to engage in such business with the Authority or any Holder. So engaging in such business shall not, in and of itself, and so long as the Trustee duly performs all of its duties as required hereby, constitute a breach of trust on the part of the Trustee.

Section 706. Removal and Resignation of Trustee.

The Trustee may resign at any time. Written notice of such resignation shall be given to the Authority and such resignation shall take effect upon the appointment and qualification of a successor Trustee. In the event a successor Trustee has not been appointed and qualified within 60 days after the date notice of resignation is given, the Trustee or the Authority may apply to any court of competent jurisdiction for the appointment of a successor Trustee to act until such time as a successor is appointed as provided in this Section.

In addition, the Trustee may be removed at any time by the Authority but only for cause by Supplemental Indenture so long as (a) no Event of Default shall have occurred and be continuing and (b) the Authority determines, in such Supplemental Indenture, that the removal of the Trustee shall not have an adverse effect upon the rights or interests of the Bondholders.

In the event of the resignation or removal of the Trustee or in the event the Trustee is dissolved or otherwise becomes incapable to act as the Trustee, the Authority shall be required to appoint a successor Trustee. In such event, the successor Trustee shall cause notice to be mailed to the Holders of all Bonds then outstanding in such manner deemed appropriate by the Authority. If the Trustee resigns, the resigning Trustee shall pay for such notice. If the Trustee is removed, is dissolved, or otherwise becomes incapable of acting as Trustee, the Authority shall pay for such notice.

Unless otherwise ordered by a court or regulatory body having competent jurisdiction, or unless required by law, any successor Trustee shall be a trust company or bank having the powers of a trust company as to trusts, qualified to do and doing trust business within or without the State and having an officially reported combined capital, surplus, undivided profits and reserves aggregating at least $50,000,000, if there is such an institution willing, qualified and able to accept the trust upon reasonable or customary terms.

Every successor Trustee howsoever appointed hereunder shall execute, acknowledge and deliver to its predecessor and also to the Authority an instrument in writing, accepting such appointment hereunder, and thereupon such successor Trustee, without further action, shall become fully vested with all the rights, immunities, powers, trusts, duties and obligations of its predecessor, and such predecessor shall execute and deliver an instrument transferring to such successor Trustee all the rights, powers and trusts of such predecessor. The predecessor Trustee shall execute any and all documents necessary or appropriate to convey all interest it may have to the successor Trustee. The predecessor Trustee promptly shall deliver all records relating to the trust or copies thereof and communicate all material information it may have obtained concerning the trust to the successor Trustee.

Each successor Trustee, not later than 10 days after its assumption of the duties hereunder, shall mail a notice of such assumption to each Holder of a registered Bond.

Section 707. Proof of Claim.

The Trustee shall have the right and power to act in its name or in the name and place of the Authority or Holders to make proof of claim in any proceeding, bankruptcy, reorganization or otherwise where proof of claim may be required. Any amount recovered by the Trustee as a result of any such claim, after payment of all fees (including reasonable attorneys' fees), costs, expenses, and advances incurred by the Trustee or its agents in pursuing such claim, shall be for the equal benefit of all the Holders of Bonds Outstanding.

Section 708. Trustee's Fees and Expenses.

The Authority hereby agrees to pay fees to and expenses of the Trustee for its services hereunder as agreed to by the Authority and the Trustee pursuant to the terms of a separate agreement. Any provision hereof to the contrary notwithstanding, if the Authority fails to make any payment properly due to the Trustee for its reasonable fees, costs, expenses, and fees of attorneys, certified public accountants, recognized authorities in their field and agents (not employees of the Trustee) incurred in performance of its duties, the Trustee may reimburse itself from any surplus moneys on hand in any Fund or Account held by it, other than any amounts in any Bond Fund or any Debt Service Reserve Fund.

Section 709. Reliance Upon Documents.

In the absence of bad faith on the part of the Trustee, the Trustee may conclusively rely upon and shall be protected in acting or refraining from acting in reliance upon any document, including but not limited to any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, or other paper or document reasonably believed by it to be genuine and to have been signed or presented by the proper officials of the Authority, the Holders or agents or attorneys of the Holders; provided, that in the case of any such document specifically required to be furnished to the Trustee hereby, the Trustee shall be under a duty to examine the same to determine whether it conforms to the requirements hereof. The Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, or other paper or document submitted to the Trustee; provided, however, that the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may deem prudent. Whenever in the administration hereof, the Trustee shall deem it desirable that a matter be provided or established prior to taking or not taking any action hereunder, the Trustee (unless other evidence be specifically prescribed herein) may rely upon any document provided for in this Indenture.

Except where other evidence is required hereby, any request or direction of the Authority mentioned herein shall be sufficiently evidenced by a certified copy of such request executed by an Authority Authorized Officer.

Section 710. Recitals and Representations.

The recitals, statements, and representations contained herein or in any Bond shall be taken and construed as made by and on the part of the Authority and not by the Trustee, and the Trustee neither assumes nor shall be under any responsibility for the correctness of the same other than the Trustee's certification of authentication of any Bonds as to which it is Authenticating Agent.

The Trustee makes no representation as to, and is not responsible for, the validity or sufficiency hereof or, except as herein required, the filing or recording or registering of any document. The Trustee shall be deemed not to have made representations as to the security afforded hereby or hereunder or as to the validity or sufficiency of such document. The Trustee shall not be concerned with or accountable to anyone for the use or application of any moneys which shall be released or withdrawn in accordance with the provisions hereof. The Trustee shall not be responsible or liable for any loss suffered in connection with the investment of any funds made by it in accordance with the provisions hereof. Except with respect to Events of Default described in Section 601(a), the Trustee shall have no duty of inquiry with respect to any default which constitutes or with notice or lapse of time or both would constitute an Event of Default without actual knowledge of a Responsible Officer or receipt by the Trustee of written notice of a default which constitutes or with notice or lapse of time or both would constitute an Event of Default from the Authority or any Holder.

Section 711. Destruction of Bonds.

Upon payment of or surrender to the Trustee for cancellation of any Bond, the Trustee shall destroy or register the cancellation of such Bond. At least annually the Trustee shall deliver a certificate of such destruction or cancellation to the Authority. Upon surrender of any Bond to a Paying Agent for payment, such Bond shall be cancelled by the Paying Agent and delivered to the Trustee for destruction or register of cancellation.

Section 712. Reports.

The Trustee monthly shall prepare and submit to the Authority reports covering all moneys received and all payments, expenditures and investments made as the Trustee hereunder since the last previous such report.

Section 713. Paying Agent, Authenticating Agent and Registrar.

The Authority may appoint a Paying Agent, an Authenticating Agent and a Registrar with respect to a Series of Bonds in the Supplemental Indenture pursuant to which such Series is issued. Each Paying Agent, Authenticating Agent and Registrar shall (i) designate to the Trustee its principal office and (ii) signify its acceptance of the duties and obligations imposed upon it hereunder and under such Supplemental Indenture by written instrument of acceptance delivered to the Authority and the Trustee. In addition, the Trustee is authorized and directed to enter into a Paying Agent Agreement with each Paying Agent as to such Paying Agent's rights and duties.

Each Paying Agent shall exercise its duties in accordance with the terms of and shall have the protection provided to the Trustee in this Indenture.

If any Paying Agent, Authenticating Agent or Registrar shall resign or be removed, the Authority shall designate a successor. If the Authority shall designate a successor, then, upon the Trustee's receipt of the written designation and the written acceptance of such designated successor, such entity shall thereupon, without further action by the Authority, be appointed as successor Paying Agent, Authenticating Agent and Registrar.

In the event that any Paying Agent, Authenticating Agent or Registrar shall resign or be removed, or be dissolved, or if the property or affairs of any Paying Agent, Authenticating Agent or Registrar shall be taken under the control of any state or federal court or administrative body because of bankruptcy or insolvency, or for any other reason, and no successor shall have been appointed, the Trustee shall, ipso facto be deemed to be any Paying Agent, Authenticating Agent or Registrar, until the appointment of a successor.

Any corporation into which any Paying Agent, Authenticating Agent or Registrar may be merged or converted or with which it may be consolidated, or any corporation resulting from any such merger, consolidation or conversion, or succeeding to the corporate trust business of Paying Agent, Authenticating Agent or Registrar, shall be the successor of the Paying Agent, the Authenticating Agent and the Registrar if such successor corporation is otherwise eligible under this Section, without the execution or filing of any further act on the part of the Trustee or the entity serving as Paying Agent, the Authenticating Agent and the Registrar or such successor corporation.

Section 714. Merger, Conversion, Consolidation or Succession to Business.

Any corporation into which the Trustee may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any corporation succeeding to all or substantially all of the corporate trust business of the Trustee, shall be the successor of the Trustee hereunder, provided such corporation shall be otherwise qualified and eligible under this Article, without the execution or filing of any paper or any further act on the part of any of the parties hereto; provided, however, that, in the event of an assignment of this Indenture by the Trustee, such assignment shall not be binding on the Authority unless and until the Authority has received a certified copy of the assignment, together with written notice of the assignee to which notices may be sent; provided that, if such agreement is required to be recorded, the assignee shall deliver to the Authority a copy of the proof of recordation bearing the date and the instrument number or book and page of such recordation.

Section 715. Appointment of Co-Trustee.

It is the purpose of this Indenture that there shall be no violation of any law of any jurisdiction (including particularly the laws of the State) denying or restricting the right of banking corporations or associations to transact business as Trustee in such jurisdiction. It is recognized that in case of litigation under this Indenture, and in particular in case of the enforcement of any such document in default, or in case the Trustee deems that by reason of any present or future law of any jurisdiction it may not exercise any of the powers, rights or remedies herein granted to the Trustee or hold title to the properties in trust, as herein granted, or take any other action which may be desirable or necessary in connection therewith, it may be necessary that the Trustee appoint an additional individual or institution as a separate or Co-Trustee. The following provisions of this Section are adopted to these ends.

The Trustee may appoint an additional individual or institution as a separate or Co-Trustee, in which event each and every remedy, power, right, claim, demand, cause of action, indemnity, estate, title, interest and lien expressed or intended by this Indenture 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.

Should any deed, conveyance or instrument in writing from the Authority be required by the separate or Co-Trustee so appointed by the Trustee for more fully and certainly vesting in and confirming to him or it such properties, rights, powers, trusts, duties and obligations, any and all such deeds, conveyances and instruments in writing shall, on request, be executed, acknowledged and delivered by the Authority. In case any separate or Co-Trustee, or a successor to either, shall die, 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 exercisable by the Trustee until the appointment of a new Trustee or successor to such separate or Co-Trustee.

ARTICLE VIII

SUPPLEMENTAL INDENTURES

Section 801. Supplemental Indentures Not Requiring Consent of Bondholders.

The Authority and the Trustee may, without the consent of or notice to any of the Holders, enter into one or more Supplemental Indentures for one or more of the following purposes:

(a) to cure any ambiguity or formal defect or omission herein;

(b) to correct or supplement any provision herein which may be inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising hereunder that shall not materially adversely affect the interests of the Holders;

(c) to grant or confer upon the Trustee for the benefit of the Holders any additional rights, remedies, powers or authority that may lawfully be granted or conferred upon them;

(d) to secure additional revenues or provide additional security or reserves for payment of the Bonds;

(e) to preserve the excludability of interest on any Bonds from gross income for purposes of federal income taxes, or to change the tax covenants set forth in Section 509, pursuant to an Opinion of Bond Counsel that such action will not affect adversely such excludability;

(f) to remove the Trustee in accordance with the second paragraph of Section 707;

(g) to add requirements the compliance with which is required by a Rating Agency in connection with issuing a rating with respect to any Series of Bonds;

(h) to accommodate the technical, operational and structural features of Bonds which are issued or are proposed to be issued or of a financing program which has been authorized or is proposed to be authorized by a resolution of the Authority and identified in a previous or proposed Supplemental Indenture, and for which the items required under Section 210 and Section 213 have been or will be filed with the Trustee (including demonstration of compliance with the applicable additional bonds test), including, but not limited to, changes in methods and assumptions to be used in calculations of "Annual Debt Service" and any other changes needed to accommodate bond anticipation notes, commercial paper, auction Bonds, Hedge Facilities, Short-Term/Demand Obligations and other variable rate or adjustable rate Bonds, Original Issue Discount Bonds and any other discounted or compound interest Bonds, or other forms of indebtedness which the Authority from time to time deems appropriate to incur;

(i) to accommodate the use of a Credit Facility for specific Bonds or a specific Series of Bonds;

(j) to comply with the requirements of the Code as are necessary, in the Opinion of Bond Counsel, to prevent the federal income taxation of the interest on any of the Bonds, including, without limitation, the segregation of Toll Road Revenues into different funds;

(k) to evidence the appointment of a separate Trustee or a Co-Trustee or to evidence the succession of a new Trustee;

(l) to modify, alter, amend or supplement this Indenture in such manner as to permit the qualification hereof under the Trust Indenture Act of 1939 or any similar federal statute then in effect or to permit the qualification of the Bonds for sale under the securities laws of any of the states of the United States of America and, if the Authority and the Trustee so determine, to add to this Indenture or any indenture supplemental hereto such other terms, conditions and provisions as may be permitted by the Trust Indenture Act of 1939 or similar federal statute;

(m) to issue additional Series of Bonds pursuant to Section 213, to provide additional Funds and Accounts relating such additional Bonds, to authorize different authorized denominations of the Bonds and to make correlative amendments and modifications to this Indenture regarding exchangeability of Bonds of different authorized denominations, redemptions of portions of Bonds of particular authorized denominations and similar amendments and modifications of a technical nature;

(n) to make any amendments appropriate or necessary to provide for any insurance policy, letter of credit, guaranty, surety bond, line of credit, revolving credit agreement, standby bond purchase agreement or other Credit Facility delivered to the Trustee and providing for (i) payment of the principal, interest and redemption premium on the Bonds or a portion thereof, (ii) payment into the Debt Service Reserve Fund, or (iii) payment of the purchase price of the Bonds, or (iv) any combination of (i), (ii) and (iii);

(o) to conform any provision contained herein to permit the issuance of Bonds to a private party or to permit the Authority to participate in a public-private partnership with respect to the funding of the Turnpike; and

(p) to modify, alter, amend or supplement this Indenture in any other respect which in the judgment of the Trustee is not inconsistent with this Indenture and which is not materially adverse to the interests of the Bondholders.

Before the Authority and the Trustee shall enter into any Supplemental Indenture pursuant to this Section 801, there shall have been delivered to the Trustee an opinion of Bond Counsel stating that such Supplemental Indenture is authorized or permitted by the Acts and is authorized under this Indenture, that such Supplemental Indenture will, upon the execution and delivery thereof, be valid and binding upon the Authority in accordance with its terms and will not adversely affect the exclusion from gross income of the interest on the Bonds for federal income tax purposes.

Section 802. Supplemental Indentures Requiring Consent of Bondholders.

(a) Other than Supplemental Indentures referred to in Section 801 and subject to the terms and provisions and limitations contained in this Article and not otherwise, the Holders of not less than a majority in aggregate principal amount of the Senior Lien Bonds then Outstanding and the Holders of not less than a majority in aggregate principal amount of the Subordinate Lien Bonds then Outstanding may consent to or approve, from time to time, which consent or approval shall be in writing and shall not be withheld unreasonably, anything contained herein to the contrary notwithstanding, the execution by the Authority and the Trustee of such Supplemental Indentures as shall be deemed necessary and desirable by the Authority for the purpose of modifying, altering, amending, adding to or rescinding any of the terms or provisions contained in this Indenture; provided, that if any Supplemental Indenture modifying, altering, amending, adding to or rescinding any of the terms and provisions of this Indenture contains provisions which affect the rights and interests of less than all Series of Bonds and Section 801 is not applicable, then such Supplemental Indenture shall require the consent only of the Holders of a majority in Outstanding principal amount of the Series of Bonds so affected; and provided further, that nothing in this Section shall permit or be construed as permitting a Supplemental Indenture which would:

(i) extend the stated maturity of or time for paying the interest on any Bond or reduce the principal amount of or the redemption premium or rate of interest payable on any Bond without the consent of the Holder of such Bond;

(ii) prefer or give a priority to any Bond over any other Bond without the consent of the Holder of each Bond then Outstanding not receiving such preference or priority; or

(iii) reduce the aggregate principal amount of Bonds then Outstanding the consent of the Holders of which is required to authorize such Supplemental Indenture without the consent of the Holders of all Bonds then Outstanding.

(b) If at any time the Authority shall request the Trustee to enter into a Supplemental Indenture pursuant to this Section, the Trustee shall, upon being satisfactorily indemnified with respect to expenses, cause notice of the proposed modifications, alterations, amendments, additions to or rescissions of the provisions of this Indenture to be mailed by first class mail, postage prepaid, to all Holders of Bonds of any affected Series then outstanding at their addresses as they appear on the registration books herein provided for. The Trustee, however, shall not be subject to any liability to any Bondholder by reason of its failure to mail, or the failure of such Bondholder to receive, the notice required by this Section, and any such failure shall not affect the validity of any Supplemental Indenture when consented to and approved as provided in this Section. Such notice shall set forth briefly the nature of the proposed modifications, alterations, amendments, additions to or rescissions of the provisions of this Indenture and shall state that copies thereof are on file at the office of the Trustee for inspection by all Bondholders. It shall not be required that Bondholders approve the final form of such Supplemental Indenture, but it shall be sufficient if such Bondholders approve the substance thereof.

(c) If within such period as shall be prescribed by the Authority, following the first giving of a notice as provided in subsection Section 802(b) above, the Trustee shall receive an instrument or instruments purporting to be executed by the Holders of not less than the aggregate principal amount or number of Bonds specified in subsection Section 802(a) for the Supplemental Indenture in question which instrument or instruments shall refer to the proposed modifications, alterations, amendments, additions to or rescissions of the provisions of this Indenture described in such notice and shall specifically consent to and approve the execution of a Supplemental Indenture or Supplemental Indentures effecting such changes, thereupon, the Trustee may execute any such Supplemental Indenture without liability or responsibility to any Holder of any Bond, regardless of whether such Holder shall have consented thereto.

(d) Any such consent shall be irrevocable for a period of one year (or such longer period as shall be set forth in such consent) and shall be binding upon the Holder of the Bond giving such consent and upon any subsequent Holder of such Bond and of any Bond issued in exchange therefor (regardless of whether such subsequent Holder thereof has notice thereof), unless after such one year (or longer) period, such consent is revoked in writing by the Holder of such Bond giving such consent or by a subsequent Holder thereof by filing with the Trustee, prior to the execution by the Trustee of such Supplemental Indenture, such revocation. At any time after the Holders of the required principal amount or number of Bonds shall have filed their consents to the execution of such a Supplemental Indenture, the Trustee shall make and file with the Authority a written statement to that effect. Such written statement shall be conclusive that such consents have been so filed.

(e) If the Holders of the required principal amount or number of the Bonds Outstanding shall have consented to and approved the proposed modifications, alterations, amendments, additions to or rescissions of the provisions of this Indenture and the execution of such Supplemental Indenture as herein provided, no Holder of any Bond shall have any right to object to the execution thereof, or to object to any of the terms and provisions contained therein or the operation thereof, or in any manner to question the propriety of the execution thereof or to enjoin or restrain the Trustee or the Authority from executing the same or taking any action pursuant to the provisions thereof.

Section 803. Execution and Effect of Supplemental Indentures.

(a) In executing any Supplemental Indenture permitted by this Article, the Trustee shall be entitled to receive and to rely upon an Opinion of Counsel stating that the execution of such Supplemental Indenture is authorized or permitted hereby. The Trustee may but shall not be obligated to enter into any such Supplemental Indenture which affects the Trustee's own rights, duties or immunities.

(b) Upon the execution and delivery of any Supplemental Indenture in accordance with this Article, the provisions hereof shall be modified in accordance therewith and such Supplemental Indenture shall form a part hereof for all purposes and every Holder of a Bond theretofore or thereafter authenticated and delivered hereunder shall be bound thereby.

(c) Any Bond authenticated and delivered after the execution and delivery of any Supplemental Indenture in accordance with this Article may, and if required by the Authority or the Trustee shall, bear a notation in form approved by the Authority and Trustee as to any matter provided for in such Supplemental Indenture. If the Authority shall so determine, new Bonds so modified as to conform in the opinion of the Trustee and the Authority to any such Supplemental Indenture may be prepared and executed by the Authority and authenticated and delivered by the Trustee in exchange for and upon surrender of the Bonds then Outstanding.

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ARTICLE IX
SATISFACTION AND DISCHARGE

Section 901. Discharge.

If payment of all principal of, purchase price of, if applicable, premium, if any, and interest on a Series of Bonds in accordance with their terms and as provided herein is made, or is provided for in accordance with this Article, and if all other sums payable by the Authority hereunder with respect to such Series of Bonds shall be paid or provided for, then the liens, estates and security interests granted hereby shall cease with respect to such Series; provided, however, that the rebate provisions, if any, of the related Supplemental Indenture shall survive so long as there is any amount due to the federal government pursuant to the provisions of such Supplemental Indenture. Thereupon, upon the request of the Authority, and upon receipt by the Trustee of an Opinion of Bond Counsel stating that all conditions precedent to the satisfaction and discharge of the lien hereof have been satisfied with respect to such Series of Bonds and such Bonds are no longer Outstanding and, if applicable, that the defeasance of such Series of Bonds will not adversely affect the exclusion from gross income for federal income tax purposes of interest on such Bonds, the Trustee shall execute and deliver proper instruments acknowledging such satisfaction and discharging the lien hereof with respect to such Series of Bonds. If the lien hereof has been discharged with respect to all Series of Bonds, the Trustee shall transfer all property held by it hereunder, other than moneys or obligations held by the Trustee for payment of amounts due or to become due on the Bonds to the Authority or such other person as may be entitled thereto as their respective interests may appear. Such satisfaction and discharge shall be without prejudice to the rights of the Trustee thereafter to charge and be compensated or reimbursed for services rendered and expenditures incurred in connection herewith.

The Authority may at any time surrender to the Trustee for cancellation any Bonds previously authenticated and delivered which the Authority at its option may have acquired in any manner whatsoever and such Bond upon such surrender and cancellation shall be deemed to be paid and retired.

Section 902. Providing for Payment of Bonds.

Payment of the Bonds or any Series of Bonds may be provided for by the deposit with the Trustee of moneys, Government Obligations or Agency Obligations of the definition of Permitted Investments in Section 101, or any combination thereof. Payment of the Bonds or any Series of Bonds shall be so provided for when the aggregate of amounts in the applicable Account of the Debt Service Reserve Fund together with other amounts available for such purpose hereunder is sufficient to so provide. The moneys and the maturing principal and interest income on such Government Obligations or pre-refunded municipal obligations, if any, shall be sufficient and available to pay when due the principal of, whether at maturity or upon fixed redemption dates, and premium, if any, and interest on such Bonds. The moneys, Government Obligations and pre-refunded municipal obligations shall be held by the Trustee irrevocably in trust for the Holders of such Bonds solely for the purpose of paying the principal or redemption price of, including premium, if any, and interest on such Bonds as the same shall mature or become payable upon prior redemption, and, if applicable, upon simultaneous direction, expressed to be irrevocable, to the Trustee as to the dates upon which any such Bonds are to be redeemed prior to their respective maturities.

The Trustee shall receive a verification report as to the sufficiency of moneys and investments to provide for Payment of a Series of Bonds in the case of a defeasance thereof.

If Payment of a Series of Bonds is so provided for, the Trustee shall mail a notice so stating to each Holder of such Bond.

Bonds the payment of which has been provided for in accordance with this Section shall no longer be deemed Outstanding hereunder. The obligation of the Authority in respect of such Bonds shall nevertheless continue but the Holders thereof shall thereafter be entitled to payment only from the moneys, Government Obligations and pre-refunded municipal obligations deposited with the Trustee to provide for the payment of such Bonds.

No Bond may be so provided for if, as a result thereof or of any other action in connection with which the provision for payment of such Bond is made, the interest payable on any Tax-Exempt Bond with respect to which an Opinion of Bond Counsel has been rendered that such interest is excluded from gross income for federal income tax purposes is made subject to federal income taxes. The Trustee shall receive and may rely upon an Opinion of Bond Counsel (which opinion may be based upon a ruling or rulings of the Internal Revenue Service) to the effect that the provisions of this paragraph will not be breached by so providing for the payment of any Bonds.

Section 903. Payment of Bonds After Discharge; Unclaimed Moneys.

Notwithstanding the discharge of the lien hereof as in this Article IX, the Trustee nevertheless shall retain such rights, powers and duties hereunder as may be necessary and convenient for the payment of amounts due or to become due on the Bonds, including pursuant to any sinking fund redemptions, and the registration, transfer, exchange and replacement of bonds as provided herein. Nevertheless, any moneys held by the Trustee or any Paying Agent for the payment of the principal of, purchase price of, if applicable, premium, if any, or interest on any Bond remaining unclaimed for two (2) years after such payment has become due and payable, or such other period provided by law, whether at maturity or upon proceedings for redemption, shall be disposed of pursuant to the provisions of Section 214. After discharge of the lien hereof, but prior to payment of such amounts to holders or as provided pursuant to Section 214, the Trustee shall invest such amounts in Government Obligations described in paragraph (a) of the definition of Permitted Investments in Section 101 at the direction of and for the benefit of the Authority.

ARTICLE X
MISCELLANEOUS

Section 1001. Evidence of Acts of Bondholders.

Any request, direction, consent or other instrument provided hereby to be signed and executed by the Bondholders may be in any number of concurrent writings of similar tenor and may be signed or executed by such Bondholders in person or by agent appointed in writing. Proof of the execution of any such request, direction or other instrument or of the writing appointing any such agent and of the ownership of Bonds, if made in the following manner, shall be sufficient for any of the purposes hereof and shall be conclusive in favor of the Trustee and the Authority with regard to any action taken by them, or either of them, under such request or other instrument, namely:

(a) The fact and date of the execution by any person of any such writing may be proved by the certificate of any officer in any jurisdiction who by law has power to take acknowledgments in such jurisdiction, that the person signing such writing acknowledged before him the execution thereof, or by the affidavit of a witness of such execution; and

(b) The ownership of all Bonds shall be proved by the Register.

Nothing in this Section shall be construed as limiting the Trustee to the proof herein specified, it being intended that the Trustee may accept any other evidence of the matters herein stated which it may deem sufficient.

Any action taken or suffered by the Trustee pursuant to any provision hereof, upon the request or with the assent of any person who at the time is the Holder of any Bond or Bonds shall be conclusive and binding upon all future Holders of the same Bond or Bonds.

Section 1002. Limitation of Rights.

With the exception of rights herein expressly conferred, nothing expressed or mentioned in or to be implied from this Indenture or the Bonds is intended or shall be construed to give to any person other than the parties hereto, the Holders of the Bonds and any Paying Agents, Registrars, Authenticating Agents and Credit Providers, if any, any legal or equitable right, remedy or claim under or in respect to this Indenture or any covenants, conditions and provisions herein contained; this Indenture and all of the covenants, conditions and provisions hereof being intended to be and being for the sole and exclusive benefit of the parties hereto, the Holders of the Bonds and any Paying Agents, Registrars, Authenticating Agents and Credit Providers, if any, as herein provided.

Section 1003. Notice to Rating Agencies.

The Trustee hereby agrees that if at any time (a) the Authority shall redeem the entire principal amount of the Bonds Outstanding hereunder prior to maturity, (b) a successor Trustee is appointed hereunder, or (c) the Bondholders shall consent to any amendment to this Indenture or shall waive any provision of this Indenture then, in each case, the Trustee promptly will give notice of the occurrence of such event to each Rating Agency rating any of the Bonds, which notice in the case of an event referred to in clause (c) hereof shall include a copy of such amendment or waiver.

Section 1004. Severability.

If any one or more sections, clauses, sentences or parts hereof shall for any reason be questioned in any court of competent jurisdiction and shall be adjudged unconstitutional or invalid, such judgment shall not affect, impair or invalidate the remaining provisions hereof, or the Bonds issued pursuant hereto, but shall be confined to the specific sections, clauses, sentences and parts so adjudged.

Section 1005. Holidays.

When the date on which principal of, purchase price of, if applicable, premium, if any or interest on any Bond is due and payable is a day which is not a Business Day, payment may be made on Bonds on the next Business Day with effect as though payment were made on the due date, and, if such payment is made, no interest shall accrue from and after such due date. When any other action is provided herein to be done on a day named or within a time period named, and the day or the last day of the period falls on a day other than a Business Day, it may be performed on the next Business Day with effect as though performed on the appointed day or within the specified period.

Section 1006. Governing Law.

This Indenture and the Bonds are contracts made under the laws of the State and shall be governed and construed in accordance with such laws.

Section 1007. Notices.

(a) Unless otherwise expressly specified or permitted by the terms hereof, all notices, consents or other communications required or permitted hereunder shall be deemed sufficiently given or served if given in writing, mailed by first class mail, postage prepaid and addressed as follows:

(i) If to the Authority, addressed to:

West Virginia Parkways Authority
3310 Piedmont Road
Charleston, WV 25306

If to the Trustee, sent by registered or certified mail addressed to:

United Bank
500 Virginia Street East
Charleston, WV 25301

(ii) If to WVDOH, addressed to:

West Virginia Division of Highways
1900 Kanawha Boulevard East
Charleston, WV 25305

(iii) If to the registered Holder of a Bond, addressed to such Holder at the address shown on the books of the Registrar kept pursuant hereto.

(b) The Authority and the Trustee may from time to time by notice in writing to all parties to this Indenture designate a different address or addresses for notice hereunder.

Section 1008. Counterparts.

This Indenture may be executed in several counterparts, each of which shall be an original and all of which shall constitute one instrument.

Section 1009. Immunity of Individuals.

No recourse shall be had for the payment of the principal of, purchase price of, if applicable, premium, if any, or interest on any of the Bonds or for any claim based thereon or upon any obligation, covenant or agreement herein against any past, present or future member, officer, employee, agent or consultant of the Authority, whether directly or indirectly and all liability of any such individual as such is hereby expressly waived and released as a condition of and in consideration for execution hereof and the issuance of the Bonds.

Section 1010. Binding Effect.

This instrument shall inure to the benefit of and shall be binding upon the parties hereto and their respective successors and assigns subject to the limitations contained herein.

[*Remainder of this page is intentionally left blank*]

IN WITNESS WHEREOF, the Authority has caused these presents to be signed in its name and on its behalf and attested by its duly authorized officers, and, to evidence its acceptance of the trusts hereby created, the Trustee has caused these presents to be signed in its name and on its behalf by its duly authorized officer, all as of the day and year first above written.

[SEAL]

WEST VIRGINIA PARKWAYS AUTHORITY

By: ______________________________
Name: ______________________________
Its: ______________________________

Attest:

By: ________________________
Name: ________________________
Its: ________________________

UNITED BANK, as Trustee

By: ______________________________
Name: ______________________________
Its: ______________________________

First Supplemental Trust Indenture

by and between

West Virginia Parkways Authority

and

United Bank
as Trustee

authorizing and securing

Senior Lien Turnpike Toll Revenue Bonds, Series 2018

Dated as of August 1, 2018

FIRST SUPPLEMENTAL TRUST INDENTURE

This FIRST SUPPLEMENTAL TRUST INDENTURE (this "***First Supplemental Indenture***"), dated as of August 1, 2018, by and between the West Virginia Parkways Authority (the "***Authority***"), a public body corporate and politic and instrumentality of the State of West Virginia created and existing under the Constitution and Laws of West Virginia, and United Bank (the "***Trustee***"), a Virginia banking corporation having the powers of a trust company and having a corporate trust office in Charleston, West Virginia, as Trustee, under the circumstances summarized in the following recitals. Capitalized terms used but not defined in the recitals and granting clauses shall have the meanings given to such capitalized terms in Section 101 of the Master Trust Indenture or Section 101 of this First Supplemental Indenture.

WITNESSETH THAT:

WHEREAS, Article 16A, Chapter 17 of the Code of West Virginia, 1931, as amended (the "***Act***"), empowers the Authority to construct, reconstruct, improve, maintain, repair, and operate parkway projects within the State and empowers the Authority to issue bonds to provide for the costs of paying all or any part of any one or more such projects;

WHEREAS, under Section 5 of the Act, "parkway projects" include existing or new projects to be constructed, reconstructed, improved, maintained, repaired, and operated by the Authority during the term of this Indenture, either on the Turnpike ("***On-Turnpike Authority Projects***") or as special Authority projects, as well as certain projects to be constructed, reconstructed, improved, maintained, repaired, and operated by the West Virginia Division of Highways, a division of the West Virginia Department of Transportation ("***WVDOH***") that are located (a) off the Turnpike and (b) in ten specific counties identified in the Act that include the four counties through which the Turnpike runs and six counties contiguous to said four counties, to the extent allowed under the Act and applicable federal laws ("***Off-Turnpike WVDOH Projects***," and collectively with On-Turnpike Authority Projects and special Authority projects, "***Parkway Projects***");

WHEREAS, contemporaneously with the execution of this First Supplemental Indenture, the Authority is entering into that certain Master Trust Indenture, dated as of August 1, 2018, by and between the Authority and the Trustee (the "***Master Trust Indenture***," and, together with this First Supplemental Indenture, the "***Indenture***"), for the purposes set forth therein, including without limitation authorizing the issuance by the Authority of Turnpike Toll Revenue Bonds in one or more Series by Supplemental Indenture, from time to time.

WHEREAS, this First Supplemental Indenture is being adopted for the purposes of: (A) authorizing the issuance by the Authority of Senior Line Turnpike Toll Revenue Bonds, Series 2018 (the "***Series 2018 Bonds***"), on the terms set forth herein, for the purpose of financing Parkway Projects, to pay the costs of issuance of such Series 2018 Bonds, to fund applicable reserve requirements, and to reimburse the Authority for, or to provide funds to finance, certain costs and expenses incurred prior to or after the issuance of the Series 2018 Bonds in connection with the acquisition, design, construction, reconstruction, maintenance, improvement, repair or funding of Parkway Projects; (B) pledging the Toll Road Revenues for the payment of the Bonds;

(C) pledging such funds and accounts created and held pursuant to this First Supplemental Indenture and any Supplemental Indenture as are identified as being pledged for the payment of Senior Lien Bonds and which are subjected to the lien of the Indenture; and (D) making other covenants and agreements and providing other details with respect to the Bonds, subject to and in accordance with the terms hereof;

WHEREAS, the Authority has previously adopted a Reimbursement Resolution at its December 7, 2017 regular meeting, and adopted amendments thereto at its regular meetings held on February 1, 2018 and June 7, 2018, which resolutions constitute the Authority's declaration of official intent within the meaning of U.S. Treasury Regulations issued under the Code, approving the reimbursement of certain expenses incurred prior to the execution of the Indenture and the issuance of any Bonds hereunder (collectively, as amended, the "***Reimbursement Resolution***"); and

NOW, THEREFORE, THIS FIRST SUPPLEMENTAL INDENTURE WITNESSETH: In consideration of the premises, the acceptance by the Trustee of the trusts hereby created, and of the purchase and acceptance of the Series 2018 Bonds by the Holders thereof, and for the purpose of fixing and declaring the terms and conditions upon which the Series 2018 Bonds are to be issued, authenticated, delivered, secured and accepted by all persons who shall from time to time be or become Holders thereof, and to secure the payment of the Series 2018 Bonds at any time issued and Outstanding hereunder and the interest and premium, if any, thereon according to their tenor, purport and effect, and to secure the performance and observance of all of the covenants, agreements and conditions contained in such Bonds, the Master Trust Indenture and herein and in the Reimbursement Resolution, the Authority does hereby grant and confirm a security interest in, and does confirm, assign, transfer, pledge and grant and convey unto the Trustee and its successors and assigns forever, for the benefit of the Bondholders, until no amounts are due under the Indenture, the following property:

A. Amounts constituting Net Toll Road Revenues;

B. Amounts on deposit from time to time in the Funds and the Accounts created pursuant hereto and expressly made subject to the pledge of this Indenture under Article IV, including the earnings thereon, subject to the provisions of this Indenture permitting the application thereof for the purposes and on the terms and conditions set forth herein, provided, however, that there expressly is excluded from any pledge, assignment, lien or security interest created by this Indenture (i) amounts in the Operation and Maintenance Account within the Operation and Maintenance Fund, (ii) amounts in the Arbitrage Rebate Fund, and (iii) amounts in the General Fund (though such General Fund monies may be expended by the Authority to restore deficiencies in any funds or accounts created under the Indenture); and

C. Any and all other property of any kind from time to time hereafter by delivery or by writing of any kind specifically conveyed, pledged, assigned or transferred, as and for additional security hereunder for the Senior Lien Bonds, by the Authority or by anyone on its behalf or with its written consent in favor of the Trustee, which is hereby authorized to receive any and all such property at any and all times and to hold and apply the same subject to the terms hereof (collectively, the "***Trust Estate***").

This First Supplemental Indenture supplements and amends the Master Trust Indenture as herein provided.

TO HAVE AND TO HOLD all such properties pledged, assigned and conveyed by the Authority hereunder, including all additional property which by the terms hereof has or may become subject to the encumbrance hereof, unto the Trustee and its successors in trust and its assigns forever, subject, however, to the rights reserved hereunder.

IN TRUST NEVERTHELESS, for the equal and proportionate benefit and security of the Holders from time to time of all Senior Lien Turnpike Toll Revenue Bonds issued, authenticated, delivered and outstanding hereunder or under any Supplemental Indenture authorizing such Senior Lien Turnpike Toll Revenue Bonds which are subjected to the lien of the Indenture and any such Supplemental Indenture, without preference, priority or distinction as to lien or otherwise of any of Series 2018 Bonds over any other Senior Lien Turnpike Toll Revenue Bonds that may be issued under the Master Trust Indenture and a Supplemental Indenture, except to the extent otherwise provided in hereof and Section 103 of the Master Trust Indenture.

PROVIDED, HOWEVER, that if the Authority shall pay fully and promptly when due all liabilities, obligations and sums at any time secured hereby or provide for the payment thereof in accordance with the provisions hereof, and shall promptly, faithfully and strictly keep, perform and observe or cause to be kept, performed and observed all of its covenants, warranties and agreements contained herein and in the Reimbursement Agreement, then and in such event, except for the provisions of Article IX hereof, this First Supplemental Indenture shall be and become void and of no further force and effect; otherwise, the same shall remain in full force and effect, and upon the trusts and subject to the covenants and conditions hereafter set forth.

THE FIRST SUPPLEMENTAL INDENTURE FURTHER WITNESSETH: It is expressly declared that all Series 2018 Bonds are to be issued, authenticated and delivered and all said property, rights, and interest, including, without limitation, the revenues and other amounts hereby assigned and pledged are to be dealt with and disposed of under, upon and subject to the terms, conditions, stipulations, covenants, agreements, trusts, uses, and purposes as hereinafter expressed, and the Authority has agreed and covenanted, and does hereby agree and covenant with the Trustee and with the respective Holders of the Series 2018 Bonds, and to secure further the performance and observance of all of the covenants, agreements and conditions contained in such Bonds, the Master Trust Indenture and herein or in the Reimbursement Agreement (but only, and to the extent, provided in this First Supplemental Indenture), and has further agreed and covenanted, and does hereby further agree and covenant, as follows:

[*Remainder of this page is intentionally left blank*]

ARTICLE I
DEFINITIONS; RULES OF CONSTRUCTION

Section 101. Definitions.

All items herein shall have the meaning set forth in Section 101 of the Master Trust Indenture, except as otherwise indicated herein and except that the definitions in Section 101 are amended and supplemented as follows:

"**Authenticating Agent**" means, with respect to the Series 2018 Bonds, United Bank.

"**Bond Authorizing Resolution**" means, with respect to the Series 2018 Bonds, that certain resolution adopted by the Authority at its lawfully held regular meeting on June 7, 2018, authorizing the issuance of the Series 2018 Bonds under the Indenture, authorizing the execution and delivery on behalf of the Authority of this First Supplemental Indenture and other related agreements and approving, or duly delegating the authority to approve on behalf of the Authority, and the terms and details of the Series 2018 Bonds.

"**Bond Counsel**" means, with respect to the Series 2018 Bonds, Bowles Rice LLP, or another attorney or firm or firms of attorneys of national recognition experienced in the field of municipal bonds whose opinions are generally accepted by purchasers of municipal bonds selected or employed by the Authority and reasonably acceptable to the Trustee.

"**Bond Payment Date**" means, with respect to the Series 2018 Bonds, each June 1 and December 1, on which dates interest is payable for any Senior Series 2018 Bonds Outstanding.

"**Bond Purchase Contract**" means the contract of purchase, with respect to the Series 2018 Bonds, between the Authority and the Original Purchaser pertaining to the sale of such Series of Bonds.

"**Bondholder**" or "**Holder**" means, with respect to the Series 2018 Bonds, the registered owner of any Series 2018 Bonds.

"**Designated Office**" means, with respect to the Series 2018 Bonds, the office of the Trustee located at 500 Virginia Street East, Charleston, West Virginia.

"**Indenture**" means the Master Trust Indenture, as amended and supplemented by this First Supplemental Indenture.

"**Original Purchaser**" means, with respect to the Series 2018 Bonds, Wells Fargo Bank, N.A., J.P. Morgan Securities LLC, Piper Jaffray & Co. and Crew & Associates, Inc.

"**Trustee**" means, with respect to the Series 2018 Bonds, United Bank.

"**Record Date**" means, with respect to the Series 2018 Bonds, each May 15 and November 15.

"**Senior Lien Turnpike Toll Revenue Bonds, Series 2018**" or "**Series 2018 Bonds**" means the Senior Lien Turnpike Toll Revenue Bonds, Series 2018 identified on the attached Schedule I, to be authenticated and delivered pursuant to this First Supplemental Indenture.

"**Series 2018 Arbitrage Rebate Account**" means the Series 2018 Arbitrage Rebate Account, within the Arbitrage Rebate Fund, created pursuant to Section 402.

"**Series 2018 Costs of Issuance Account**" means the costs of issuance account for the Series 2018 Bonds, within the Parkway Projects Fund, created pursuant to Section 402.

"**Series 2018 Debt Service Reserve Account**" means the Series 2018 Debt Service Reserve Account, within the Senior Lien Debt Service Fund, created pursuant to Section 402, **provided** that the Authority may hereafter, in a subsequent Supplemental Indenture, provide for a composite Debt Service Reserve Account for some or all Senior Lien Bonds as further provided in such subsequent Supplemental Indenture.

"**Series 2018 Debt Service Reserve Requirement**" means the lesser of (i) 10% of the stated principal amount of the Series 2018 Bonds (plus or minus original issue premium or discount, if more than 2% of the state principal amount of the Series 2018 Bonds), (ii) the maximum annual debt service on the Series 2018 Bonds, or (iii) 125% of the average Annual Debt Service, which is, with respect to the Series 2018 Bonds, $10,283,375.00, an amount equal to the maximum annual debt service on the Series 2018 Bonds; **provided, however**, that the Authority may hereafter, in a subsequent Supplemental Indenture, provide for a composite Debt Service Reserve Account for some or all Senior Lien Bonds, which may result in adjustment or modification of such amount, as further provided in such subsequent Supplemental Indenture.

"**Series 2018 Interest Account**" means the interest account for the Series 2018 Bonds, created within the Senior Lien Bond Fund, pursuant to Section 402.

"**Series 2018 Principal Account**" means the principal account for the Series 2018 Bonds, created within the Senior Lien Bond Fund, pursuant to Section 402.

"**Series 2018 Redemption Account**" means the redemption account for the Series 2018 Bonds, created within the Senior Lien Bond Fund, pursuant to Section 402.

"**Series 2018 Sub-Account**" means the sub-account created under the State Road Construction Account within the West Virginia State Treasury.

"**Tax Certificate**" means, with respect to the Series 2018 Bonds, a Tax Certificate concerning certain matters pertaining to the use of proceeds of the Senior Lien Turnpike Toll Revenue Bonds and other tax matters as may be required by Bond Counsel, executed and delivered by the Authority, including any and all exhibits attached thereto.

Section 102. Rules of Construction.

Unless the context clearly indicates to the contrary, the rules set forth in Section 102 of the Master Trust Indenture shall apply to this First Supplemental Indenture.

Section 103. Parity as to Toll Road Revenues; Bonds of a Series Equally and Ratably Secured.

All Series 2018 Bonds issued hereunder and at any time Outstanding shall be equally and ratably secured, with the same right, lien and preference with respect to the Trust Estate, including the Toll Road Revenues, with all other Outstanding Senior Lien Bonds that may be issued under the Master Trust Indenture and a Supplemental Indenture, without preference, priority or distinction on account of the date or dates or the actual time or times of the issuance or maturity of such Senior Lien Bonds.

Section 104. Priority of Lien.

There is hereby created an irrevocable lien upon the Trust Estate for the benefit of the Series 2018 Bonds authorized herein. The pledge hereby continued shall be valid and binding from and after the time of the delivery of the first Senior Lien Turnpike Toll Revenue Bond authenticated and delivered under the Indenture. Pursuant to the Act, the security so pledged and now or hereafter received by the Authority shall immediately be subject to the lien of such pledge and the obligation to perform the contractual provisions hereby made shall have priority over any or all other obligations and liabilities of the Authority with regard to the Trust Estate, to the extent provided herein, and the lien of such pledge shall be valid and binding as against all parties having claims of any kind in tort, contract or otherwise against the Authority irrespective of whether such parties have notice thereof.

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ARTICLE II
TERMS OF SERIES 2018 BONDS

Section 201. General.

Except as supplemented below, the provisions of Article II of the Master Trust Indenture are hereby continued, approved, ratified and confirmed, shall apply fully to the Series 2018 Bonds and are incorporated by reference as a part hereof.

Section 202. Issuance.

The Authority hereby authorizes and directs the issuance of the Series 2018 Bonds as hereinafter provided, all within the parameters authorized under the Bond Authorizing Resolution.

Section 203. General Terms.

The Series 2018 Bonds shall be issued in fully registered form as herein provided.

Interest shall be payable (a) from the dated date thereof for any Series 2018 Bond authenticated prior to the first Bond Payment Date, or (b) otherwise from the Bond Payment Date that is, or immediately precedes, the date on which a Series 2018 Bond is authenticated (unless payment of interest thereon is in default, in which case the Series 2018 Bond shall bear interest from the date to which interest has been paid).

Series 2018 Bonds shall be lettered and numbered consecutively from R-1 upwards and shall be available only in denominations of $5,000 and integral multiples thereof, and the interest rate shall be printed on the face of each Series 2018 Bond.

Interest on the Series 2018 Bonds shall be calculated on the basis of a year of 360 days and twelve 30-day months, and all such interest determinations and calculations shall be made by the Trustee.

Section 204. Medium and Place of Payment.

(a) The principal of, purchase price of, if applicable, premium, if any, and interest on the Series 2018 Bonds shall be payable in currency of the United States of America which, at the respective dates of payment thereof, is legal tender for the payment of public and private debts. Upon surrender of each Series 2018 Bond, the principal of, purchase price of, if applicable, premium, if any, and interest on a Series of Bonds shall be payable at maturity or upon redemption at the Designated Office of the Trustee. Interest on Series 2018 Bonds shall be paid by check or draft of the Trustee mailed or by wire transfer to each Bondholder at such owner’s address as it appears on the Register as of the last day of the calendar month next preceding each Bond Payment Date or at such wire transfer address furnished to the Trustee in writing by such Bondholder by no later than the last day of the calendar month next preceding the Bond Payment Date on which payment by wire transfer has been requested.

(b) In the event of a default by the Authority in the payment of interest due on a Series 2018 Bond on any Bond Payment Date, such defaulted interest will be payable to the person in whose name such Series 2018 Bond is registered at the close of business on a special record date for the payment of such defaulted interest established by notice mailed by the Trustee for such Series 2018 Bond to the registered owner thereof not less than 10 days preceding such special record date.

(c) So long as the registered owner of any Series 2018 Bond is the Securities Depository or a nominee therefor, the Securities Depository shall disburse any payments received, through its Participants or otherwise, to the Beneficial Owners. Neither the Authority nor the Trustee shall have any responsibility or obligation for the payment to any Participant, any Beneficial Owner or any other person or entity (except a registered owner of Series 2018 Bonds) of the principal of, purchase price of, if applicable, premium, if any, and interest on the Series 2018 Bonds. Notwithstanding any other provision of the Indenture to the contrary, so long as the Series 2018 Bonds are registered in the name of Cede & Co., as nominee for the Securities Depository, all payments with respect to principal of, purchase price of, if applicable, premium, if any, and interest on the Series 2018 Bonds shall be made in the manner provided in the Letter of Representations.

(d) Subject to the foregoing provisions of this Section 204, each Series 2018 Bond delivered under the Indenture upon transfer of or exchange for or in lieu of any other Series 2018 Bond shall carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Series 2018 Bond.

Section 205. Execution and Authentication of Series 2018 Bonds.

All Series 2018 Bonds shall be executed for and on behalf of the Authority by the Chair and attested by the Secretary and the Treasurer. The signatures of the Chair, the Secretary and the Treasurer may be mechanically or photographically reproduced on the Series 2018 Bonds. If any officer of the Authority whose signature appears on any Series 2018 Bond ceases to be such officer before delivery thereof, such signature shall remain valid and sufficient for all purposes as if such officer had remained in office until such delivery. Each Series 2018 Bond shall be authenticated manually by an authorized officer of the Authenticating Agent; provided that, without such authentication, no Series 2018 Bond shall be entitled to the benefits hereof.

Section 206. Conditions for Delivery of Series 2018 Bonds.

Upon the execution and delivery of this First Supplemental Indenture providing for the issuance of the Series 2018 Bonds, the Authority shall execute and deliver such Series 2018 Bonds to the Trustee, the Trustee shall deliver such Series 2018 Bonds to the Authenticating Agent for authentication and delivery to or for the account of the Original Purchaser as directed by the Authority Authorized Officer, and the Authenticating Agent shall authenticate such Series 2018 Bonds; provided, however, that, prior to delivery by the Trustee of such Series 2018 Bonds, there shall be delivered to the Trustee the following:

(a) A certified copy of the Bond Authorizing Resolution.

(b) Executed or true counterparts of the Master Trust Indenture, this First Supplemental Indenture, the Bond Purchase Contract, and the Reimbursement Resolution.

(c) A request and authorization by the Authority to the Authenticating Agent to authenticate and deliver the Series 2018 Bonds, describing the Series 2018 Bonds, designating the Original Purchaser to whom such Series 2018 Bonds are to be delivered upon payment therefor and stating the amount to be paid therefor to the Trustee for the account of the Authority.

(d) The amounts specified in this First Supplemental Indenture for deposit to the credit of the applicable Funds and Accounts created hereunder.

(e) A certificate of the Consulting Engineers setting forth its opinions as to (i) the Turnpike's being in good repair, and (ii) the estimated amount of Operation and Maintenance Expenses for each of the Annual Periods through five (5) years of operation after completion of any Parkway Project financed with proceeds of the Series 2018 Bonds.

(f) A certificate of the Traffic and Revenue Consultant setting forth its opinion as to the aggregate estimated amount of Toll Road Revenues which the Authority should derive from the operation of the Turnpike under the Toll Rate Schedule or the Projected Toll Rate Schedule referred to, set forth in, or attached to, the certificate, for each of the Annual Periods through the repayment of the Series 2018 Bonds and all other obligations issued by the Authority and payable from Toll Road Revenues.

(g) A certificate of the Authority, dated as of the date of delivery of the Series 2018 Bonds, stating that, as of the date of such certificate, no event or condition has happened or existed, or is happening or existing, that continues, or that, with notice or lapse of time or both, would constitute an Event of Default by the Authority under the Indenture.

(h) A certificate of the Authority stating that, based upon the report of the Consulting Engineers and Traffic and Revenue Consultant, the projected Net Toll Road Revenues (adjusted to reflect any authorized adjustment in tolls, fees and charges, provided that such adjustment is to be implemented within six months, as if such adjustment had been in effect since the beginning of the period described herein) for the current and each of the Annual Periods through the fifth Annual Period following the issuance of the Series 2018 Bonds are at least 135% of Annual Debt Service for each such year and projected Net Toll Road Revenues in the fifth such year equaled or exceeded 135% of the Maximum Annual Debt Service for the Series 2018 Bonds.

(i) Such other closing documents as the Authority or the Trustee reasonably may specify.

Section 207. Form of Bonds.

The definitive Series 2018 Bonds shall be in substantially the form set forth as **Exhibit A** to this First Supplemental Indenture.

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ARTICLE III
REDEMPTION OF BONDS

Section 301. General.

Except as supplemented below, the provisions of Article III of the Master Trust Indenture are hereby continued, approved, ratified and confirmed, shall apply fully to the Series 2018 Bonds and are incorporated by reference as a part hereof.

Section 302. Right to Redeem.

The Series 2018 Bonds maturing on or after June 1, 2029 shall be subject to redemption prior to maturity at the option of the Authority on or after June 1, 2028, either in whole or in part (in $5,000 increments), on any date and in such order of maturity as the Authority may determine, at a redemption price equal to 100% of the principal amount of such Series 2018 Bonds to be redeemed, plus accrued interest on such Series 2018 Bonds to be redeemed to the redemption date.

At the request of the Trustee, the redemption price of the Series 2018 Bonds to be redeemed at the option of the Authority will be determined by an independent accounting firm, investment banking firm or financial advisor retained by the Authority at the Authority's expense to calculate such redemption price. The Trustee and the Authority may conclusively rely on the determination of such redemption price by such independent accounting firm, investment banking firm or financial advisor and will not be liable for such reliance.

Section 303. Sinking Fund Redemption.

(a) The Series 2018 Bonds maturing on June 1, 2043 are required to be redeemed prior to maturity, in part, on June 1 in the years and amounts, and at a redemption price of 100% of the principal amount thereof to be redeemed plus interest accrued and unpaid to the redemption date, as follows:

Year (June 1)	Principal Amount
2040	$6,970,000
2041	$7,315,000
2042	$7,685,000
2043*	$8,065,000

* Final Maturity.

The Series 2018 Bonds maturing on June 1, 2047 are required to be redeemed prior to maturity, in part, on June 1 in the years and amounts, and at a redemption price of 100% of the principal amount thereof to be redeemed plus interest accrued and unpaid to the redemption date, as follows:

Year (June 1)	Principal Amount
2044	$8,470,000
2045	$8,810,000
2046	$9,160,000
2047*	$9,530,000

* Final Maturity.

(b) At its option, to be exercised on or before the fortieth (40th) day next preceding each mandatory sinking fund redemption date, the Authority may:

(i) cause to be paid to the Trustee for deposit in the Series 2018 Redemption Account such amount, or direct the Trustee to use moneys in the Series 2018 Redemption Account in such amount, as the Authority may determine, accompanied by a certificate signed by the Authority Authorized Officer directing the Trustee to apply such amount to the purchase of the applicable Series 2018 Bonds and the Trustee shall use all reasonable efforts to expend such funds as nearly as may be practicable in the purchase of such Series 2018 Bonds, at a price not exceeding the principal amount thereof plus accrued interest to such sinking fund redemption date; or

(ii) receive a credit against its sinking fund redemption obligation for the applicable Series 2018 Bonds maturing on Bond Payment Dates in the same years which prior to such date have been purchased by the Authority and presented to the Trustee for cancellation or redeemed (otherwise than through the operation of the sinking fund) and cancelled by the Trustee and, in either case, not theretofore applied as a credit against any sinking fund redemption obligation. Each Series 2018 Bond so purchased, delivered or previously redeemed shall be credited by the Trustee at 100% of the principal amount thereof against the obligation of the Authority on such sinking fund redemption date to redeem Series 2018 Bonds of the same maturity.

Each Series 2018 Bond so purchased, delivered or previously redeemed shall be credited by the Trustee at 100% of the principal amount thereof against the obligation of the Authority on such sinking fund redemption date to redeem Series 2018 Bonds of the same maturity. Any excess over such obligation shall be credited against applicable future sinking fund redemption obligations, or deposits with respect thereto, in such order of maturity as shall be determined by the Authority, and the principal amount of such Series 2018 Bonds of the same maturity to be redeemed by operation of the sinking fund shall be accordingly reduced. Any funds received by the Trustee pursuant to subsection (b)(i) of this Section, but not expended as provided therein for the purchase of Series 2018 Bonds on or before said fortieth (40th) day shall be retained in the Series 2018 Redemption Account and shall thereafter be used only for the purchase of Series 2018 Bonds as a credit against future sinking fund obligations, or deposits with respect thereto, to be applied to such Series 2018 Bonds maturing on Bond Payment Dates in the same years and in such order of maturity as determined by the Authority.

Section 304. Notice of Redemption.

(a) If less than all Series 2018 Bonds are to be redeemed, and subject to the provisions of subsection (b) hereof, the Series 2018 Bonds to be redeemed shall be identified by reference to the Series designation, date of issue, serial or CUSIP numbers and maturity date. Each notice of redemption shall specify: (i) the date fixed for redemption, (ii) the principal amount of Series 2018 Bonds or portions thereof to be redeemed, (iii) the applicable redemption price, (iv) the place or places of payment, (v) that payment of the principal amount and premium, if any, will be made upon presentation and surrender to the Trustee, of the Series 2018 Bonds to be redeemed, (vi) that interest accrued to the date fixed for redemption will be paid as specified in such notice, (vii) that on and after such date interest on Series 2018 Bonds which have been redeemed will cease to accrue, and (viii) the designation, including Series, and the CUSIP and serial numbers, if any, of the Series 2018 Bonds to be redeemed and, if less than the face amount of any such Series 2018

Bond is to be redeemed, the principal amount to be redeemed. Notice of redemption of any Series 2018 Bonds shall be mailed at the times and in the manner set forth in subsection (b) of this Section.

(b) Any notice of redemption shall be sent by the Trustee not less than 20 nor more than 60 days prior to the date set for redemption by first-class mail (i) to the Holder of each such Series 2018 Bond to be redeemed in whole or in part at his address as it appears on the Register, or while the Series 2018 Bonds are held in book-entry form, to the Securities Depository, (ii) to all organizations registered with the Securities and Exchange Commission as securities depositories, and (iii) to the Municipal Securities Rulemaking Board. During such period, the Trustee shall not be responsible for mailing notices of redemption to anyone other than such Securities Depository or its nominee. In preparing such notice, the Trustee shall take into account, to the extent applicable, the prevailing tax-exempt securities industry standards and any regulatory statement of any federal or state administrative body having jurisdiction over the Authority, or the tax-exempt securities industry. Failure to give any notice specified in (i), or any defect therein, shall not affect the validity of any proceedings for the redemption of any Series 2018 Bonds with respect to which no such failure has occurred and failure to give any notice specified in (ii) or (iii), or any defect therein, shall not affect the validity of any proceedings for the redemption of any Series 2018 Bonds with respect to which the notice specified in (i) is given correctly.

(c) If at the time of notice of any optional redemption of the Series 2018 Bonds, there have not been deposited with the Trustee moneys available for payment pursuant to the Indenture and sufficient to redeem all of the Series 2018 Bonds called for redemption, the notice may state that it is conditional in that it is subject to the deposit of sufficient moneys by not later than the redemption date, and if the deposit is not timely made the notice shall be of no effect.

Section 305. Selection of Bonds to be Redeemed.

(a) In connection with any optional redemption of the Series 2018 Bonds, the Authority shall select the maturities of serial bonds, and portions of the amortization of term bonds, that shall be redeemed and shall designate such selections in an Authority Authorized Officer's certificate.

(b) In the case of any partial redemption of a serial maturity of the Series 2018 Bonds, the particular Series 2018 Bonds of such maturity to be redeemed shall be selected by DTC in accordance with its procedures or, if the book-entry system has been discontinued, by the Trustee by lot in such manner as the Trustee shall determine.

(c) Each increment of $5,000 of principal amount of Series 2018 Bonds, shall be counted as one Series 2018 Bond, for purposes of selecting Series 2018 Bonds for a partial redemption.

(d) If a Series 2018 Bond shall be called for partial redemption, upon its surrender, a new Series 2018 Bond, representing the unredeemed balance of the principal amount of the Series 2018 Bond, shall be issued to its Owner.

ARTICLE IV
REVENUES AND FUNDS

Section 401. General.

Except as supplemented below, the provisions of Article IV of the Master Trust Indenture are hereby continued, approved, ratified and confirmed, shall apply fully to the Series 2018 Bonds and are incorporated by reference as a part hereof.

Section 402. Confirmation and Further Creation of Funds and Accounts.

(a) The Authority hereby confirms the applicable Funds and Accounts, below, established under the Master Trust Indenture, and the Authority hereby establishes and creates, for the Series 2018 Bonds, the Accounts designated with the Series designation "Series 2018," below:

(i) Parkway Projects Fund.

(A) Series 2018 Parkway Projects Account; and

(B) Series 2018 Costs of Issuance Account.

(ii) Revenue Fund.

(iii) Operation and Maintenance Fund.

(A) Operation and Maintenance Account; and

(B) Operation and Maintenance Reserve Account.

(iv) Senior Lien Bond Fund.

(A) Series 2018 Interest Account;

(B) Series 2018 Principal Account; and

(C) Series 2018 Redemption Account.

(v) Senior Lien Debt Service Reserve Fund.

(A) Series 2018 Debt Service Reserve Account.

(vi) Arbitrage Rebate Fund.

(A) Series 2018 Arbitrage Rebate Account.

(vii) Renewal and Replacement Reserve Fund.

(viii) Turnpike Capital Improvement Fund.

(ix) General Fund.

(b) Notwithstanding any provision of this Article IV or any provision elsewhere in this First Supplemental Indenture to the contrary, the Trustee shall not be required to open any fund, account or subaccount until the need for such fund, account or subaccount arises.

(c) The Funds and Accounts created hereby shall constitute trust funds and accounts for the purposes provided in this First Supplemental Indenture, and shall be separately accounted for by the Authority with an Authorized Depositary. The Senior Lien Bond Fund and the Accounts therein (the Series 2018 Principal Account, the Series 2018 Interest Account, and the Series 2018 Redemption Account), the Series 2018 Debt Service Reserve Account, and the Arbitrage Rebate Fund shall be held pursuant to the Indenture by the Trustee. The Parkway Projects Fund and the Accounts therein (the Series 2018 Parkway Projects Account and the Series 2018 Costs of Issuance Account), the Revenue Fund, and the Operation and Maintenance Fund and the Accounts therein (the Operation and Maintenance Account and the Operation and Maintenance Reserve Account) shall be held pursuant to the Indenture by the Authority with an Authorized Depositary.

(d) There has been created, or is being created (simultaneously with the issuance of the Series 2018 Bonds under this First Supplemental Indenture), in the Treasury of the State of West Virginia, pursuant to the Memorandum of Understanding and the Act, the State Road Construction Account.

Section 403. Application of Proceeds of Series 2018 Bonds.

All proceeds of the sale of the Series 2018 Bonds (net of $406,963.32 of underwriter's discount) shall be paid to the Trustee, against receipt therefor, at or prior to the delivery of the Series 2018 Bonds. Immediately upon receipt of such proceeds, the Trustee shall transfer $172,000,000.00 of the proceeds relating to the Off-Turnpike WVDOH Projects to the Series 2018 Sub-Account within the State Road Construction Account, as further provided in the Memorandum of Understanding, and, simultaneously with the delivery of the Series 2018 Bonds, the Trustee shall apply the remaining proceeds thereof, as follows:

(a) to the Series 2018 Costs of Issuance Account, $1,633,856.88; and

(b) to the Series 2018 Debt Service Reserve Account, $10,283,375.00.

Section 404. Series 2018 Parkway Projects Account; Series 2018 Costs of Issuance Account.

(a) A portion of the proceeds of the Series 2018 Bonds equal to $1,633,856.88 shall be deposited into the Series 2018 Costs of Issuance Account.

(b) There also may be deposited to the credit of the Series 2018 Parkway Projects Account and to the Series 2018 Costs of Issuance Account created thereunder, any other moneys (including all obligations held as investments thereof and the proceeds of such investments) received from any other source for paying costs of the Parkway Projects, including costs of issuance of the Series 2018 Bonds, or for any other purpose or project authorized by law. Amounts in the Series 2018 Parkway Projects Account, if any, shall be pledged to the Bondholders.

(c) Moneys in the Series 2018 Parkway Projects Account, if any, shall be applied to the payment of the cost of On-Turnpike Authority Projects or for other projects and purposes then authorized by law. Moneys in the Series 2018 Costs of Issuance Account shall be applied to the payment of the costs of issuance of the Series 2018 Bonds.

(d) Moneys, instruments and securities in the Series 2018 Parkway Projects Account, if any, and the Series 2018 Costs of Issuance Account, shall be held by the Authority. The Authority covenants that the funds in the Series 2018 Parkway Projects Account, if any, and the Series 2018 Costs of Issuance Account shall be applied in accordance with the provisions of this Section and the covenants contained in Section 510 of the Master Trust Indenture.

(e) After payments of, and reimbursements with respect to, the On-Turnpike Authority Projects, if any, financed by the Series 2018 Bonds are completed, including payments for costs of issuance related to the Series 2018 Bonds, as certified by the Authority, and provided no Event of Default has occurred and is continuing in the payment of principal of or interest on any Series 2018 Bonds, excess funds in the Series 2018 Parkway Projects Account and excess funds in the Series 2018 Costs of Issuance Account shall be applied, upon receipt by the Authority of an opinion of Bond Counsel that such use will not affect adversely the exclusion of interest on such Series 2018 Bonds from gross income for federal income tax purposes and, if applicable, (i) the non-tax preference status of such interest for federal alternative minimum income tax purposes, and (ii) the qualification of earnings on any Funds or Accounts for treatment pursuant to Section 148(f)(4)(B) of the Code as meeting the requirement of Section 148(f)(2) to rebate amounts to the United States, (i) to eliminate any deficiency in the Series 2018 Debt Service Reserve Account, (ii) to the Series 2018 Redemption Account for the optional redemption of such Series 2018 Bonds at the earliest date such Series 2018 Bonds are subject to optional redemption without premium or for the purchase of such Series 2018 Bonds, or (iii) to the applicable Account in the Senior Lien Bond Fund.

Section 405. Series 2018 Principal Account; Series 2018 Interest Account; Series 2018 Redemption Account.

(a) Amounts in the Series 2018 Interest Account, within the Senior Lien Bond Fund, shall be used by the Trustee to pay the interest on the Series 2018 Bonds when due. Amounts in the Series 2018 Principal Account, within the Senior Lien Bond Fund, shall be used by the Trustee to pay the principal of the Series 2018 Bonds when due. Amounts in the Series 2018 Redemption Account, within the Senior Lien Bond Fund, shall be used by the Authority to pay the redemption price of the Series 2018 Bonds on the applicable redemption date specified by the Authority. Amounts in the Senior Lien Bond Fund, including the Accounts therein, shall be pledged to Holders of Senior Lien Bonds, including the Series 2018 Bonds.

(b) In the event that on the Business Day preceding any interest payment date the amounts in any Account relating to the Series 2018 Bonds, within the Senior Lien Bond Fund, shall be less than the amount required for payment of the interest on and the principal of the related Outstanding Series 2018 Bonds, and any related parity obligation due and payable on such interest payment date, the Trustee shall withdraw the amount necessary to increase the amount on deposit in the applicable Account relating to the Series 2018 Bonds to the requirement therefor from the Series 2018 Debt Service Reserve Account.

(c) When Series 2018 Bonds are redeemed or purchased, the amount, if any, in the Series 2018 Interest Account shall be applied to the payment of accrued interest in connection with such redemption or purchase. Whenever the amounts in the Accounts relating to the Series 2018 Bonds are sufficient to redeem all of the Outstanding Series 2018 Bonds and to pay interest accrued to the redemption date specified by the Authority. Any amounts remaining in the Accounts relating to the Series 2018 Bonds after payment in full of the principal or redemption price, premium, if any, and interest on the Series 2018 Bonds (or provision for payment thereof) and the fees, charges and expenses of the Authority, the Trustee and any paying agents, shall be paid to the Authority.

(d) Moneys delivered to the Trustee in contemplation of optional or mandatory redemption or maturity of the Series 2018 Bonds shall be deposited in the Series 2018 Redemption Account and shall be used by the Trustee to redeem or pay the principal of such Series 2018 Bonds (including any redemption premium thereon) in accordance with the provisions hereof. If the Series 2018 Bonds are to be paid or redeemed in full, any balance in the Series 2018 Redemption Account may, at the option of the Authority, be applied in whole or in part to the payment or redemption of such Series 2018 Bonds or transferred to the applicable Senior Lien Bond Fund.

Section 406. Series 2018 Debt Service Reserve Account.

(a) Subject to the provisions of Section 405, amounts in the Series 2018 Debt Service Reserve Account shall be used to pay debt service on the Series 2018 Bonds, or on such Senior Lien Bonds as may be hereafter issued under a Supplemental Indenture providing for a composite Debt Service Reserve Account to include the Series 2018 Debt Service Reserve Account, on the date or dates such debt service is due when insufficient funds for that purpose are available in the applicable Accounts relating to such Outstanding Series 2018 Bonds. Amounts in the Series 2018 Debt Service Reserve Account shall be pledged to Holders of the Series 2018 Bonds.

(b) In lieu of or in addition to cash or investments, at any time the Authority may cause to be deposited to the credit of the Series 2018 Debt Service Reserve Account any form of DSRF Credit Facility, in the amount of the Series 2018 Debt Service Reserve Requirement, irrevocably payable to the Trustee as beneficiary for the Holders of the Series 2018 Bonds, as further provided in provisions of the Master Trust Indenture relating to the use of a DSRF Credit Facility.

Section 407. Series 2018 Arbitrage Rebate Account.

(a) The Series 2018 Arbitrage Rebate Account, within the Arbitrage Rebate Fund, shall be maintained by the Trustee as a fund separate from any other fund established and maintained hereunder. Within the Series 2018 Arbitrage Rebate Account, the Trustee shall maintain such accounts as shall be required by the Authority in order to comply with the terms and requirements of the Tax Certificate. All money at any time deposited in the Series 2018 Arbitrage Rebate Account shall be held by the Trustee in trust, to the extent required to satisfy the Rebate Requirement (as defined in the Tax Certificate), for payment to the Treasury Department of the United States of America. The Authority or the owner of any Series 2018 Bonds shall not have any rights in or claim to such money. All amounts deposited into or on deposit in the Series 2018 Arbitrage Rebate Account shall be governed by this Section 407 and the Tax Certificate (which is incorporated herein by reference). Amounts in the Series 2018 Arbitrage Rebate Account shall not be pledged to Bondholders.

(b) The Trustee shall be deemed conclusively to have complied with this Section 407 and the Tax Certificate if it follows the directions of an Authority Authorized Officer, including supplying all necessary written information in the manner provided in the Tax Certificate, and shall have no liability or responsibility for compliance or to enforce compliance by the Authority with the terms of the Tax Certificate.

(c) Upon the written direction of the Authority, the Trustee shall deposit in the Series 2018 Arbitrage Rebate Account amounts received from the Authority, so that the balance on deposit thereto shall be equal to the Rebate Requirement. Computations of the Rebate Requirement shall be furnished by or on behalf of the Authority in accordance with the Tax Certificate. The Trustee shall have no obligation to rebate any amounts required to be rebated pursuant to this Section 407, other than from moneys held in the Funds and Accounts created under this First Supplemental Indenture or from other moneys provided to it by the Authority.

(d) The Trustee shall invest all amounts held in the Series 2018 Arbitrage Rebate Account as provided in written directions of the Authority. In issuing such directions, the Authority shall comply with the restrictions and instructions set forth in the Tax Certificate. Moneys from the Series 2018 Arbitrage Rebate Account may only be applied as provided in this Section 407.

(e) Upon receipt of written instructions and certification of the Rebate Requirement from an Authority Authorized Officer, the Trustee shall pay the amount of such Rebate Requirement to the Treasury Department of the United States of America, out of amounts in the Series 2018 Arbitrage Rebate Account, as so directed. Notwithstanding any other provisions of the Indenture, the obligation to remit the Rebate Requirement to the United States of America and to comply with all other requirements of this Section 407 and the Tax Certificate shall survive the defeasance or payment in full of the Series 2018 Bonds.

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ARTICLE V
COVENANTS OF THE AUTHORITY

Section 501. General.

The provisions of Article V of the Master Trust Indenture are hereby continued, approved, ratified and confirmed, shall apply fully to the Series 2018 Bonds and are incorporated by reference as a part hereof.

ARTICLE VI
DEFAULT AND REMEDIES

Section 601. General.

The provisions of Article VI of the Master Trust Indenture are hereby continued, approved, ratified and confirmed, shall apply fully to the Series 2018 Bonds and are incorporated by reference as a part hereof.

ARTICLE VII
THE TRUSTEE

Section 701. General.

The provisions of Article VII of the Master Trust Indenture are hereby continued, approved, ratified and confirmed, shall apply fully to the Series 2018 Bonds and are incorporated by reference as a part hereof.

ARTICLE VIII
SUPPLEMENTAL INDENTURES

Section 801. General.

The provisions of Article VIII of the Master Trust Indenture are hereby continued, approved, ratified and confirmed, shall apply fully to the Series 2018 Bonds and are incorporated by reference as a part hereof.

ARTICLE IX
SATISFACTION AND DISCHARGE

Section 901. General.

Except as supplemented below, the provisions of Article IX of the Master Trust Indenture are hereby continued, approved, ratified and confirmed, shall apply fully to the Series 2018 Bonds and are incorporated by reference as a part hereof.

Section 902. Discharge.

If payment of all principal of, purchase price of, if applicable, premium, if any, and interest on the Series 2018 Bonds in accordance with their terms and as provided herein is made, or is provided for in accordance with this Article, and if all other sums payable by the Authority hereunder with respect to the Series 2018 Bonds shall be paid or provided for, then the liens, estates and security interests granted hereby shall cease with respect to the Series 2018 Bonds; provided, however, that the rebate provisions, if any, of this First Supplemental Indenture shall survive so long as there is any amount due to the federal government pursuant to the provisions of this First Supplemental Indenture. Thereupon, upon the request of the Authority, and upon receipt by the Trustee of an Opinion of Bond Counsel stating that all conditions precedent to the satisfaction and discharge of the lien hereof have been satisfied with respect to the Series 2018 Bonds and such Series 2018 Bonds are no longer Outstanding and, if applicable, that the defeasance of such Series 2018 Bonds will not adversely affect the exclusion from gross income for federal income tax purposes of interest on such Series 2018 Bonds, the Trustee shall execute and deliver proper instruments acknowledging such satisfaction and discharging the lien hereof with respect to such Series 2018 Bonds. If the lien hereof has been discharged with respect to all Series 2018 Bonds, the Trustee shall transfer all property held by it hereunder, other than moneys or obligations held by the Trustee for payment of amounts due or to become due on the Series 2018 Bonds to the Authority or such other person as may be entitled thereto as their respective interests may appear. Such satisfaction and discharge shall be without prejudice to the rights of the Trustee thereafter to charge and be compensated or reimbursed for services rendered and expenditures incurred in connection herewith.

The Authority may at any time surrender to the Trustee for cancellation any Series 2018 Bonds previously authenticated and delivered which the Authority at its option may have acquired in any manner whatsoever and such Series 2018 Bonds upon such surrender and cancellation shall be deemed to be paid and retired.

Section 903. Providing for Payment of Bonds.

Payment of the Series 2018 Bonds may be provided for by the deposit with the Trustee of moneys, Government Obligations and Agency Obligations of the definition of Permitted Investments in Section 101 of the Master Trust Indenture, or any combination thereof. Payment of the Series 2018 Bonds shall be so provided for when the aggregate of amounts in the applicable Account of the Series 2018 Debt Service Reserve Fund together with other amounts available for such purpose hereunder is sufficient to so provide. The moneys and the maturing principal and interest income on such Government Obligations or Agency Obligation, if any, shall be sufficient and available to pay when due the principal of, whether at maturity or upon fixed redemption dates, and premium, if any, and interest on such Series 2018 Bonds. The moneys, Government Obligations and Agency Obligations shall be held by the Trustee irrevocably in trust for the Holders of such Series 2018 Bonds solely for the purpose of paying the principal or redemption price of, including premium, if any, and interest on such Series 2018 Bonds as the same shall mature or become payable upon prior redemption, and, if applicable, upon simultaneous direction, expressed to be irrevocable, to the Trustee as to the dates upon which any such Series 2018 Bonds are to be redeemed prior to their respective maturities.

The Trustee shall receive a verification report from a firm of independent certified public accountants as to the sufficiency of moneys and investments to provide for Payment of the Series 2018 Bonds in the case of a defeasance thereof.

If Payment of the Series 2018 Bonds is so provided for, the Trustee shall mail a notice so stating to each Holder of such Series 2018 Bonds.

Series 2018 Bonds the payment of which has been provided for in accordance with this Section shall no longer be deemed Outstanding under the Indenture. The obligation of the Authority in respect of such Series 2018 Bonds shall nevertheless continue but the Holders thereof shall thereafter be entitled to payment only from the moneys, Government Obligations and pre-refunded municipal obligations deposited with the Trustee to provide for the payment of such Series 2018 Bonds.

No Senior Lien Turnpike Toll Revenue Bond, Series 2018 may be so provided for if, as a result thereof or of any other action in connection with which the provision for payment of such Series 2018 Bonds is made, the interest payable on any Tax-Exempt Senior Lien Turnpike Toll Revenue Bond, Series 2018 with respect to which an opinion of Bond Counsel has been rendered that such interest is excluded from gross income for federal income tax purposes is made subject to federal income taxes. The Trustee shall receive and may rely upon an opinion of Bond Counsel (which opinion may be based upon a ruling or rulings of the Internal Revenue Service) to the effect that the provisions of this paragraph will not be breached by so providing for the payment of any Series 2018 Bonds.

Section 904. Payment of Bonds After Discharge; Unclaimed Moneys.

Notwithstanding the discharge of the lien hereof as in this Article IX, the Trustee nevertheless shall retain such rights, powers and duties hereunder as may be necessary and convenient for the payment of amounts due or to become due on the Series 2018 Bonds, including pursuant to any sinking fund redemptions, and the registration, transfer, exchange and replacement of bonds as provided herein. Nevertheless, any moneys held by the Trustee for the payment of the principal of, purchase price of, if applicable, premium, if any, or interest on any Senior Lien Turnpike Toll Revenue Bond, Series 2018 remaining unclaimed for two (2) years after such payment has become due and payable, or such other period provided by law, whether at maturity or upon proceedings for redemption, shall be disposed of pursuant to the provisions of Section 214. After discharge of the lien hereof, but prior to payment of such amounts to holders or as provided pursuant to Section 214, the Trustee shall invest such amounts in Government Obligations and Agency Obligations described in paragraphs (a) and (b), respectively, of the definition of Permitted Investments in Section 101 of the Master Trust Indenture at the direction of and for the benefit of the Authority.

ARTICLE X
MISCELLANEOUS

Section 1001. General.

The provisions of Article X of the Master Trust Indenture are hereby continued, approved, ratified and confirmed, shall apply fully to the Series 2018 Bonds and are incorporated by reference as a part hereof.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the Authority has caused these presents to be signed in its name and on its behalf and attested by its duly authorized officers, and, to evidence its acceptance of the trusts hereby created, the Trustee has caused these presents to be signed in its name and on its behalf by its duly authorized officer, all as of the day and year first above written.

[SEAL]

WEST VIRGINIA PARKWAYS AUTHORITY

By: ______________________________
Name: ______________________________
Its: ______________________________

Attest:

By: ________________________
Name: ________________________
Its: ________________________

UNITED BANK, as Trustee

By: ______________________________
Name: ______________________________
Its: ______________________________

SCHEDULE I

$166,370,000
STATE OF WEST VIRGINIA
WEST VIRGINIA PARKWAYS AUTHORITY
SENIOR LIEN TURNPIKE TOLL REVENUE BONDS, SERIES 2018

Maturity (June 1)	Principal Amount	Interest Rate	CUSIP*
2019	2,830,000	5.000%	956510AA9
2020	2,650,000	5.000%	956510AB7
2021	2,785,000	5.000%	956510AC5
2022	2,925,000	5.000%	956510AD3
2023	3,070,000	5.000%	956510AE1
2024	3,225,000	5.000%	956510AF8
2025	3,385,000	5.000%	956510AG6
2026	3,555,000	5.000%	956510AH4
2027	3,730,000	5.000%	956510AJ0
2028	3,920,000	5.000%	956510AK7
2029	4,115,000	5.000%	956510AL5
2030	4,320,000	5.000%	956510AM3
2031	4,535,000	5.000%	956510AN1
2032	4,760,000	5.000%	956510AP6
2033	5,000,000	5.000%	956510AQ4
2034	5,250,000	5.000%	956510AR2
2035	5,515,000	5.000%	956510AS0
2036	5,790,000	5.000%	956510AT8
2037	6,080,000	5.000%	956510AU5
2038	6,380,000	4.000%	956510AV3
2039	6,635,000	5.000%	956510AW1
2048	9,910,000	3.750%	956510AZ4

$30,035,000 5.000% Term Bond due June 1, 2043, CUSIP: 956510AX9
$35,970,000 4.000% Term Bond due June 1, 2047, CUSIP: 956510AY7

*CUSIP Numbers have been assigned by an independent company not affiliated with the State or the Authority and are included on this page solely for the convenience of the owners of the Series 2018 Bonds only at the time of issuance of the Series 2018 Bonds. Neither the State nor the Authority makes any representation regarding the accuracy of such CUSIP numbers as stated in the above table or undertakes any responsibility for the selection of the CUSIP numbers or their accuracy now or at any time in the future. The CUSIP number for a specific maturity is subject to being changed after the issuance of the Series 2018 Bonds.

EXHIBIT A

FORM OF SENIOR LIEN TURNPIKE TOLL REVENUE BOND, SERIES 2018

[*See attached*]

Unless this certificate is presented by an authorized representative of The Depository Trust Company, a New York corporation ("DTC'), to the Issuer or its agent for registration of transfer, exchange or payment, and any certificate issued is registered in the name of Cede & Co. or in such other name as is requested by an authorized representative of DTC (and any payment is made to Cede & Co. or to such other entity as is requested by an authorized representative of DTC), ANY TRANSFER, PLEDGE OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL inasmuch as the registered owner hereof Cede & Co. has an interest herein.

UNITED STATES OF AMERICA
WEST VIRGINIA PARKWAYS AUTHORITY
SENIOR LIEN TURNPIKE TOLL REVENUE BONDS, SERIES 2018

No. R-1

Interest Rate	Maturity Date	Bond Date	CUSIP Number
[*]%	[*]	August 14, 2018	[*]

REGISTERED OWNER: CEDE & CO.

PRINCIPAL AMOUNT: [*] DOLLARS
($[____________])

KNOW ALL MEN BY THESE PRESENTS: That the WEST VIRGINIA PARKWAYS AUTHORITY (the "Issuer"), for value received, hereby promises to pay to the Registered Owner specified above, or registered assigns (the "Registered Owner"), but solely from the sources and in the manner referred to herein, on the Maturity Date specified above, unless redeemed prior thereto, as hereinafter provided, upon presentation and surrender hereof, the Principal Amount specified above and to pay interest from those sources on said Principal Amount from the Interest Payment Date (as hereinafter defined) preceding the date of authentication hereof or, if authenticated after the Record Date (as hereinafter defined) but prior to the applicable Interest Payment Date or on said Interest Payment Date, from said Interest Payment Date or, if no interest has been paid, from the Bond Date specified above, at the Interest Rate per annum specified above, semiannually, on June 1 and December 1 in each year, beginning December 1, 2018 (each an "Interest Payment Date"), until maturity or until the date fixed for redemption if this Bond is called for prior redemption and payment on such date is provided for. Principal of and interest on this Bond are payable by United Bank, a Virginia banking corporation, as Trustee (the "Trustee").

Interest accruing on this Bond on and prior to the Maturity Date hereof shall be payable by check or draft mailed by the Trustee to the Registered Owner hereof as of the applicable Record Date (each May 15th and November 15th) or, in the event of a default in the payment of Bonds, that special record date to be fixed by the Trustee by notice given to the Registered Owners not less than 10 days prior to said special record date at the address of such Registered Owner as it appears on the registration books of the Issuer maintained by the Trustee. Principal and premium, if any, shall be paid when due upon presentation and surrender of this Bond for payment to the Trustee, in Charleston, West Virginia.

THIS BOND IS A SPECIAL OBLIGATION OF THE ISSUER. PAYMENT OF THIS BOND, INCLUDING THE PRINCIPAL OR REDEMPTION PRICE HEREOF, AND THE INTEREST HEREON, WILL BE MADE SOLELY FROM THE FUNDS AND OBLIGATIONS DULY PLEDGED IN THE TRUST INDENTURE. THIS BOND SHALL NOT BE A DEBT OF THE STATE OF WEST VIRGINIA, AND THE STATE SHALL NOT BE LIABLE HEREON. THIS BOND SHALL NOT CONSTITUTE AN INDEBTEDNESS OF THE ISSUER WITHIN THE MEANING OF ANY CONSTITUTIONAL OR STATUTORY DEBT LIMITATION OR RESTRICTION.

THIS BOND DOES NOT CONSTITUTE A DEBT OR A PLEDGE OF THE FAITH AND CREDIT OR THE TAXING POWER OF THE STATE OF WEST VIRGINIA, ANY COUNTY, MUNICIPALITY OR ANY OTHER POLITICAL SUBDIVISION OF THE STATE OF WEST VIRGINIA, TO THE REGISTERED OWNER OF THIS BOND, AND THE REGISTERED OWNER OF THIS BOND SHALL HAVE NO RIGHT TO HAVE TAXES LEVIED BY THE LEGISLATURE OR BY THE TAXING AUTHORITY OF ANY COUNTY, MUNICIPALITY, OR ANY OTHER POLITICAL SUBDIVISION OF THE STATE OF WEST VIRGINIA FOR THE PAYMENT OF THE PRINCIPAL OF OR INTEREST ON THIS BOND. THE ISSUER HAS NO TAXING POWER.

NONE OF THE PAST, PRESENT OR FUTURE BOARD MEMBERS, OFFICERS OR EMPLOYEES OF THE ISSUER OR ANY PERSON EXECUTING THE BONDS SHALL BE LIABLE PERSONALLY ON THIS BOND BY REASON OF THE ISSUANCE HEREOF.

This Bond is one of an issue of bonds authorized to be issued in the aggregate principal amount of $166,370,000 (hereinafter called the "Bonds") for the purposes of (i) authorizing the issuance by the Authority of Turnpike Toll Revenue Senior Lien Bonds, Series 2018 (the "***Senior Lien Turnpike Toll Revenue Bonds, Series 2018***"), on the terms set forth in a Master Trust Indenture (the "Master Trust Indenture") and First Supplemental Indenture (the "First Supplemental Indenture"), both dated as of August 1, 2018 (together, the "Trust Indenture"), for the purpose of financing Parkway Projects as defined in the Act, (ii) to pay the costs of issuance of such Senior Lien Turnpike Toll Revenue Bonds, Series 2018, (iii) to fund applicable reserve requirements, and (iv) to fund or pay for any other costs or expenses permitted under the Act. The Bonds are issued under and pursuant to the Trust Indenture, an executed counterpart of which is on file at the office of said Trustee, as authorized by a Resolution adopted by the Issuer on June 7, 2018 (the "Resolution"). Reference is hereby made to the Trust Indenture and all indentures supplemental thereto for the provisions, among others, with respect to the custody and application of the proceeds of the Bonds, the collection and disposition of revenues, the revenues charged with and pledged to the payment of the principal of and interest on the Bonds, the nature and extent of security, the terms and conditions under which the Bonds are issued, the rights, duties and obligations of the Issuer and the Trustee, and the rights of the holders of the Bonds, and, by the acceptance of this Bond, the holder hereof assents to all the provisions of the Trust Indenture.

This Bond is transferable by the Issuer hereof in person or by its attorney duly authorized in writing at the principal office of the Trustee but only in the manner, subject to the limitations and upon payment of the charges provided in the Trust Indenture, and upon surrender and cancellation of this Bond. Upon such transfer, a new bond or bonds of the same series, interest rate, maturity or maturities and of authorized denomination or denominations, for the same aggregate principal amount, will be issued to the transferee in exchange therefor.

The Issuer and the Trustee may deem and treat the Registered Owner thereof as the absolute owner hereof (whether or not this Bond shall be overdue) for the purpose of receiving payment of or on account of principal hereof and interest due hereon and for all other purposes, and neither the Issuer nor the Trustee shall be affected by any notice to the contrary.

The Bonds are issuable only in the full amount thereof. The Bonds may, at the option of the Registered Owner thereof, upon the surrender thereof at the principal office of the Trustee with a written instrument of transfer, in form and with guarantee of signature satisfactory to the Trustee, duly executed by the Registered Owner or his duly authorized attorney, be exchanged for an equal aggregate principal amount of fully registered bonds of the same series, maturity and interest rate of any other authorized denomination.

The Bonds are subject to optional redemption and mandatory sinking fund redemption under the terms and subject to the provisions set forth in the Trust Indenture.

This Bond, as may be outstanding from time to time, is issued pursuant to and in full conformity with the Constitution and the laws of the State of West Virginia, particularly Chapter 17, Article 16A of the Code of West Virginia, 1931, as amended, and pursuant to the Resolution duly adopted by the Issuer, which Resolution also authorizes the execution and delivery of the Trust Indenture.

The Bonds are limited special obligations of the Issuer and are payable out of the Trust Estate as described in the Trust Indenture. Under the Trust Indenture, the Issuer must pay the Trustee from the Trust Estate such payments as will be fully sufficient to pay the principal of and interest on the Bonds, as the same mature.

Pursuant to the Trust Indenture, the Trustee shall, immediately upon receipt of Net Toll Road Revenues from the Issuer, deposit all Net Toll Road Revenues into the Series 2018 Interest Account until such time as the Trustee has sufficient moneys in the Series 2018 Interest Account to pay the interest due on the next ensuing Interest Payment Date for the Bonds, as shall be determined by the Trustee pursuant to Section 405(a) of the First Supplemental Indenture, and then after satisfying such requirements for the Series 2018 Interest Account, the Trustee shall thereafter deposit the Net Toll Road Revenues received from the Issuer into the Series 2018 Principal Account. Moneys in the Series 2018 Principal Account and the Series 2018 Interest Account established under the First Supplemental Indenture have been duly pledged to secure payment of the principal of and interest on the Bonds.

The Registered Owners of the Bonds shall have no right to enforce the provisions of the Indenture or to institute any action to enforce the covenants therein, or to take any action with respect to any event of default under the Indenture, or to institute, appear in or defend any suit or other proceedings with respect thereto, except as provided in the Indenture. In certain events, on the conditions, in the manner and with the effect set forth in the Indenture, the principal of all the bonds issued under the Indenture and then outstanding, may become or may be declared due and payable before the stated maturity thereof together with interest accrued thereon. Modifications or alterations of the Indenture, or of any supplements thereto, may be made only to the extent and in the circumstances permitted by the Indenture.

IT IS HEREBY CERTIFIED, RECITED AND DECLARED that all acts and conditions necessary to be done or performed by the Issuer or to have happened precedent to and in the issuance of the Bonds in order to make them legal, valid and binding special obligations of the Issuer in accordance with their terms, and precedent to and in the execution and delivery of the Indenture, have happened or have been performed in regular and due form as required by law; that payment in full for such Bonds has been received; and that such Bonds do not exceed or violate any constitutional or statutory limitation.

This Bond shall not be valid or become obligatory for any purpose or be entitled to any security or benefit under the Indenture until the Certificate of Authentication appearing thereon shall have been duly and manually executed by the Trustee.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the WEST VIRGINIA PARKWAYS AUTHORITY has caused this Bond to be executed in its name by the manual or facsimile signature of its Chair and its seal to be hereunto impressed or imprinted hereon and attested by the manual or facsimile signature of its Secretary and Treasurer, all as of the date set forth above.

WEST VIRGINIA PARKWAYS AUTHORITY

By: ________________________________
Its Chair

[SEAL]

Attest:

By: ________________________
Its Secretary

Attest:

By: ________________________
Its Treasurer

CERTIFICATE OF AUTHENTICATION:

This Bond is one of the Bonds described in the within-named Trust Indenture and has been duly registered in the name of the Registered Owner set forth above, as of the Date of Authentication set forth below.

Date of Authentication: August 14, 2018

UNITED BANK, as Trustee

By: ___________________________
Its: Authorized Officer

Assignment

FOR VALUE RECEIVED the undersigned hereby sells, assigns and transfer unto ________________________(Please print or typewrite name, address and Social Security Number of Transferee)__________________ the within bond and all rights thereunder, and hereby irrevocably constitutes and appoints __________________, as Attorney, to transfer the within bond on the books kept for registration thereof, with full power of substitution in the premises.

Dated: __________________

In the presence of:

____

____

NOTICE: The signature to this assignment must correspond with the name as it appears upon the face of the within bond in every particular, without alteration or enlargement or any change whatever.

APPENDIX B

FINANCIAL STATEMENTS OF THE AUTHORITY

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COMPREHENSIVE ANNUAL FINANCIAL REPORT

West Virginia Parkways Authority
(A Component Unit of the State of West Virginia)

Fiscal Years Ended June 30, 2017 and 2016

WEST VIRGINIA PARKWAYS AUTHORITY
(a Component Unit of the State of West Virginia)

Comprehensive Annual Financial Report

Fiscal Years Ended June 30, 2017 and 2016

Prepared by:

Director of Finance,
West Virginia Parkways Authority

West Virginia Parkways Authority

Comprehensive Annual Financial Report

Fiscal Years Ended June 30, 2017 and 2016

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Introductory Section

West Virginia Parkways Authority

West Virginia Parkways Authority

List of Authority Members, Administrative Staff, and Professional Consultants

Authority Members		**Date Appointed**	**Term Expires (2)**
Chairman	The Honorable James C. Justice, II Governor, State of West Virginia	January 16, 2017	(1)
Governor's Chairman Designee	Ann V. Urling	September 28, 2017	(1)
Secretary of Transportation	Thomas J. Smith	January 14, 2017	(1)
Vice Chairman, At Large Member	Mike Vinciguerra, Jr.	June 2, 2006	June 30, 2021
Secretary, 1st Congressional District	Tom Mainella	July 10, 2010	June 30, 2020
3rd Congressional District	William Seaver, IV	July 9, 2007	June 30, 2020
3rd Congressional District	Douglas M. Epling	January 29, 2009	June 30, 2022
1st Congressional District	William Cipriani	May 10, 2013	June 30, 2019
2nd Congressional District	Troy N. Giatras	January 12, 2017	June 30, 2019
2nd Congressional District	Alisha G. Maddox	July 1, 2017	June 30, 2021

Administrative Staff

General Manager	Gregory C. Barr
Executive Assistant	Robin Shamblin
General Counsel	A. David Abrams, Jr.
Director of Finance	Parrish T. French
Chief Engineer	Ronald B. Hamilton
Director of Maintenance	James F. Meadows
Director of Tolls	Douglas E. Ratcliff
Director of Customer Service	D. Wayne Webb
Director of Purchasing	Margaret Vickers
Director of Operations and Training	Tyrone C. Gore
Director of Human Resources	Sherry Lilly
Officer in Charge of State Police	Captain T. L. Bragg
Executive Director – Tamarack	Jim Browder

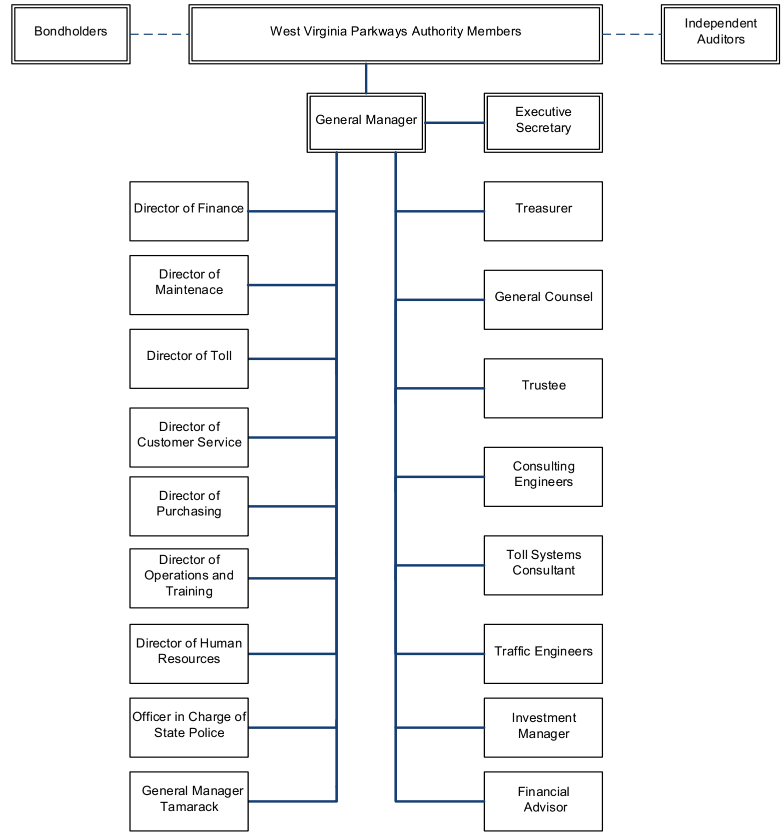
Professional Consultants

Trustee	United Bank, Inc., Charleston, West Virginia
Independent Auditor	Suttle & Stalnaker, PLLC, Charleston, West Virginia
General Counsel	Abrams & Byron, Beckley, West Virginia Bowles Rice, LLP Charleston, West Virginia
Bond Counsel	Spilman, Thomas & Battle, Charleston, West Virginia
Consulting Engineers	HNTB Corporation, Scott Depot, West Virginia
Traffic Engineers	CDM Smith, New Haven, Connecticut
Financial Advisor	Public Resources Advisory Group, New York, New York
Investment Advisor	BB&T Scott & Stringfellow

(1) Under the provisions of the Act which created the Authority, the Governor or his designee serves as Authority Chairman and the Secretary of Transportation is also a member.

(2) Public members may continue to serve until a successor has been appointed and has qualified.

West Virginia Parkways Authority Organization Chart



West Virginia Parkways Authority
P.O. Box 1469
Charleston, West Virginia 25325-1469
Telephone: 304-926-1900
Fax: 304-926-1909
E-ZPass: 1-800-206-6222
www.wvturnpike.com

Jim Justice
Governor

Thomas J. Smith, P.E.
Cabinet Secretary
WVDOT

December 22, 2017

The Honorable James C. Justice, II, Governor and
The Honorable Members of the West Virginia Parkways Authority

The Comprehensive Annual Financial Report (CAFR) of the West Virginia Parkways Authority (the Authority) for the fiscal years ended June 30, 2017 and 2016, is hereby submitted. Responsibility for both the accuracy of the data, and the completeness and fairness of the financial presentation, including all disclosures, rests with the Authority. To the best of our knowledge and belief, the accompanying data are accurate in all material respects and are reported in a manner designed to present fairly the financial position, changes in financial position, and cash flows of the Authority. All disclosures necessary to enable the reader to gain an understanding of the Authority's financial activities have been included. Management's Discussion and Analysis (MD&A) immediately follows the independent auditor's report and provides a narrative overview and analysis of the basic financial statements. The MD&A complements this letter of transmittal and should be read in conjunction with it.

The accompanying financial statements include only the accounts and transactions of the Authority. The Authority has no component units. However, the Authority is considered a component unit of the State of West Virginia (the State) and the West Virginia Department of Transportation (the Department) and its financial statements are discretely presented in the comprehensive annual financial report of the State.

ORGANIZATION AND BACKGROUND

The Authority was formed as successor-in-interest to the West Virginia Turnpike Commission (the Turnpike Commission) which had been created by the West Virginia Legislature in l947. Because of highway funding limitations, the legislation authorized the construction of highways through the issuance of revenue bonds, with the bonds to be retired through the collection of tolls. The highway was envisioned to become part of a major highway network extending from Michigan to Florida.

For the first stage of development, a route was identified from Charleston to Princeton that would lessen by only 22 miles the original mileage between the two cities, but would reduce the estimated driving time from four to two hours. Due to financial constraints, the project plans were revised to build only a two-lane expressway with right turn only interchanges and no crossing lines of traffic.

The West Virginia Turnpike (Turnpike) opened in 1954, and in 1958 it was incorporated into the nationwide Interstate and Defense Highway System. The Federal Highway Act of 1968 included a provision permitting interstate funding to be used for the reconstruction of the Turnpike. Beginning in 1970 and concluding September 2, 1987, the Turnpike was upgraded to meet four-lane interstate design standards. Financing was accomplished through the use of Federal highway funds on a 90% Federal/10% state-matching basis. The Authority repaid the Department for the matching funds with the last payment made in June, 1994. These repaid funds were used by the Department for highway projects located within 75 miles of the Turnpike.

The Turnpike System

The West Virginia Turnpike consists of 88 miles of limited access highway, which are an integral part of the U.S. Interstate Highway System. It carries the designations of Interstate 77 (I-77) for its entire length and Interstate 64 (I-64) from Charleston to Beckley. I-77 is a north-south interstate route connecting Cleveland, Ohio to Columbia, South Carolina. I-64 is an east-west route connecting St. Louis, Missouri to Virginia Beach, Virginia.

From its beginning, the Turnpike has been an important route for commercial truck traffic serving the northeast and upper Midwest industrial areas to industrial areas and population centers of the South. Today, heavy truck traffic accounts for over 20% of total transactions and approximately 50% of toll revenues. The Turnpike is also important to summer and holiday travelers. Average daily passenger car traffic increases by approximately 28% during the summer travel months of June, July and August. Studies have indicated approximately 76% of toll revenues are collected from out-of-state vehicles.

Turnpike operations are financed almost entirely by Turnpike toll revenues. Toll revenues must pay for operating and routine maintenance expenses, debt service, renewal and replacement requirements and deferred maintenance and capital needs. The Turnpike does not regularly receive any other State or Federal funds to assist with maintenance or operations.

The Turnpike uses a toll barrier system with three mainline toll plazas strategically located between Charleston and Princeton. There are 18 entrance-exit ramps from the Turnpike serving local traffic. All ramps are toll-free except for the U.S. Rte. 19 interchange north of Beckley where there is a toll barrier facility.

The Authority is a member of the E-ZPass® Group which develops guidelines for and facilitates the electronic collection of tolls among at least 27 toll agencies from 16 states in the Eastern and Midwest portions of the U.S. The E-ZPass program is the largest, most successful interoperable toll collection program anywhere in the world, servicing more than 32 million customers and processing more than 3 billion electronic toll transactions in 2016. The West Virginia Turnpike processes 38.8% of toll transactions and collects 45.7% of toll revenue with the E-ZPass® system.

Reorganization

In 2010, the Authority's enabling legislation was amended to rename and reorganize the organization as the West Virginia Parkways Authority. The structure of the Authority's governance board was expanded to nine members and includes two members from each of the State's three congressional districts, one at-large member, the Secretary of Transportation and the Governor or his designee, as Chairman. Members are appointed to five year terms.

Governor's Road To Prosperity

On June 22, 2017, West Virginia Governor Jim Justice signed Senate Bill 1003 (S.B. 1003) into law, creating a "public-public" partnership between the Authority and the West Virginia Department of Transportation. Effective June 16, 2017, S.B. 1003 authorizes the Authority to continue collecting tolls on the Turnpike, to deposit proceeds from the issuance of Parkways Revenue Bonds to the newly created special State Road Construction Account and requires the Authority to implement the West Virginia Parkways Authority Single Fee program allowing non-commercial purchasers of West Virginia E-ZPass transponders to have unlimited passage on toll roads within the State for an annual flat fee once the Authority increases any of its currently existing tolling rates.

S.B. 1003 is part of a series of measures collectively referred to as the Governor's Roads to Prosperity Highway Program envisioned as a centerpiece of economic recovery for West Virginia. The program includes measures for the State to fund over $2.6 billion in transportation infrastructure projects by issuing Parkways, General Obligation and GARVEE Bonds and by revising Private-Public Partnership and Design Build Project legislation.

The Authority is expected to issue toll revenue bonds to fund in total approximately $500 million in transportation projects to be issued in multiple series over the next three years. For its first issuance, the Authority in conjunction with the West Virginia Division of Highways seeks to construct various projects including a portion of the King Coal Highway, West Virginia Route 10 improvements and other major bridge rehabilitation and reconstruction projects.

S.B. 1003 includes various provisions that govern the amounts and processes the Authority must follow in order to continue to charge tolls and the amount of revenues for which the tolls must generate. Specifically, the provisions require the Authority to implement a Single Fee Program in order to continue and/or raise tolls on the Turnpike beyond 2019. The Single Fee Program is intended to enable the Authority to allow purchasers of West Virginia E-ZPass transponders to have unlimited passage on toll roads within the State for an annual flat fee. The flat fee shall be set by the Authority (with certain limitations including, but not limited to, a cap at $25 per year) at a rate or amount so that the aggregate of all toll revenues estimated to be received by the Authority at the time of fixing any such rate or amount, or any increase thereof, provides sufficient toll revenues to pay debt service, fund necessary reserves and to cover the administrative costs of the Single Fee Program.

The Single Fee Program only applies to passenger motor vehicles, not commercial vehicles, and would entitle purchasers of a West Virginia E-ZPass transponder to traverse all toll roads within the State of West Virginia without stopping to pay individual tolls for one year from the time of payment of the annual flat fee. The Single Fee Program will be made available to any purchaser of a West Virginia E-ZPass transponder, whether such purchaser is a resident of West Virginia or any other state.

Highway and Bridge Rehabilitation Projects

Effective August 1, 2009 the Authority adopted a revised toll rate schedule, its first rate increase in over 28 years. As a result, the Authority has substantially increased the breadth and scope of its rehabilitation and repair projects on the Turnpike including full depth concrete repairs and undersealing, asphalt pavement overlay, bridge deck overlay, bridge and facilities retrofit work, guardrails, median barriers, retaining walls, buildings, toll plazas, culverts and drainage pipes, and signs and pavement markings. In accordance with a 10-year capital plan developed with the consulting engineer, the increased toll revenues will be used to alleviate an estimated $335 million in essential deferred maintenance and capital needs backlog, including $242 million for paving.

Beginning in 2010, improvements in pavement ride quality on some sections of the Turnpike became apparent. While approximately 40% of pavements were condition assessed as good or very good in 2010, by May, 2017 the goal of having 80% of pavements condition assessed as good or very good had been attained. Major construction projects in 2017 included the continuation of asphalt overlay and paving on the northern portion of the Turnpike. Following Memorial Day, most work is performed at night, Monday through Thursday from 6:00 p.m. to 6:00 a.m., in order to keep traffic delays at a minimum.

Bridge deck replacement using accelerated bridge construction (ABC) method

In 2015, the Parkways Authority awarded a contract for the Turnpike's first bridge deck replacement on the Turnpike. It was the first use of the Accelerated Bridge Construction (ABC) method of replacing bridge decks in the State of West Virginia and it had a minimal impact on traffic. The contractor was given less than two weeks to complete the project from the time of the first lane closure until all lanes were open to traffic. This is in contrast to a 6-8 month construction period for a traditional method bridge deck replacement. The project replaced a 220 foot, two-lane bridge deck and was completed in May 2016. Accelerated Bridge Construction is a method in which the decks are brought in as pre-cast units and provides better quality control as the units are made in a casting plant. Once the casts are brought in, the old deck is replaced and the new deck is put into place with a crane and locked in place. Two bridges were replaced similarly in 2017.

There are 116 bridges on the West Virginia Turnpike and this was the first bridge deck replacement since the Turnpike's upgrade was completed in 1987. The Authority began a program to rout and seal deck cracks in the late 1980's with a two-part epoxy which continues to this day. Starting in 2006, 36 bridge decks have been overlaid with a thin epoxy/aggregate combination for water sealing benefits and traction improvement. Since 2010, water based sealers have been applied to approximately 40 decks. Up to nine tons of salt are applied to some bridges each year. Over the next 30 years, at least 80% of bridge decks will need to be replaced at an estimated annual cost of $22 million.

Routine Maintenance

In addition to snow removal and ice control, road and bridge maintenance crews perform activities associated with all aspects of highway maintenance including: pavements, drainage, signage and other traffic control devices, bridge repairs, bench cleaning, vegetation control and litter pickup.

Utilizing the Maintenance Management System (MMS), the Maintenance Division prepares periodic condition ratings on maintenance performance areas. Actual conditions are compared to established performance targets to assess the effectiveness of the maintenance program. The Division found that asphalt pavement conditions continued to exceed targets due to the pavement rehabilitation and preservation program as a result of the toll rate increase and the Division's aggressive crack sealing program.

The Authority continued its focus on preventive bridge maintenance including protective deck overlays which provides skid resistant surfaces and helps seal the bridge deck from salt intrusion and sizable spot painting contracts which help to preserve the steel structures.

Traffic Management and Safety

The Turnpike is patrolled by an up to 31 member group designated as Troop 7 of the West Virginia State Police who are responsible for traffic safety management and drug interdiction. With its 24-hour patrol, the State Police are dedicated to making the road safer by monitoring compliance with posted speed limits, assisting disabled motorists, detecting impaired drivers, and apprehending drug traffickers. Troop 7's efforts are strengthened by two Public Service Commission (PSC) officers whose focus is inspection and enforcement of commercial vehicle safety and operating regulations.

The Authority provides roadside assistance to Turnpike travelers with disabled vehicles. In winter, snow and ice removal is a top priority and major concern of the Maintenance Department. The Authority's annual operating budget includes funds necessary to adequately maintain safe highways during the winter storm season. Speed monitoring awareness radar trailers are employed to remind motorists of their speed. Rumble strips and eight inch edge lines are utilized to enhance the travel lane for the safety of motorists.

Travel Plazas and Tourist Information Centers

The Authority has contracted with two private companies to operate restaurants and service stations at three travel plazas on the Turnpike. The facilities provide convenient service to Turnpike travelers and also serve as tourist information centers. On May 31, 2013, a trucker's shower facility opened at the Beckley Travel Plaza. Tickets for the showers are being sold at the shower facility and by Petroleum Marketers, Inc., the fuel service provider. Attendants provide towels and other amenities to customers, and are available every day from 6:00 A.M. to 10:00 P.M.

Two other rest areas are accessible to southbound motorists. The rest area at mile 69 provides restrooms, snacks and sandwiches, and vending machines while the rest area at mile 18 has no facilities, but provides a scenic view. A new facility at the rest area at mile marker 69 was completed during 2017. The old structure was in dire need of replacement. The new facility offers Turnpike customers a modern, state of the art rest area with additional car parking and an upgraded snack shop. The Authority also operates the West Virginia Welcome Center, located near milepost 9, Princeton, WV, which contains restrooms, vending machines and tourist information. Retail shops featuring The Best of West Virginia handmade crafts, art and specialty foods are also located at the travel plazas and the Welcome Center.

Long-Range Financial Planning

The Authority is required by its Trust Indenture to prepare an annual budget prior to the start of each fiscal year. The adopted budget is used for control of operating and renewal and replacement expenditures and for financial planning. The budget is approved by the Authority, but does not require the approval of the State legislature. Additionally, the consulting engineer assists and presents the Authority each year with an updated needs assessment and five year plan.

Economic Development and Tourism

In 1989, the Authority became responsible for the promotion and enhancement of the State tourism industry and to assist in economic and tourism development opportunities. The Authority designated revenues from restaurants and service stations to be used for this new responsibility. No toll revenues were used for economic development and tourism projects. During the April 12, 2007 Authority board meeting, a resolution was passed to refocus the Authority's core and principal mission to operating and maintaining the Turnpike as a modern, efficient and safe roadway. All economic development and tourism projects, except Tamarack-the Best of West Virginia, have been eliminated. Legislation approved in 2010 further restricted the Authority from future involvement in any other economic development projects.

Accounting Policies and Internal Controls

The Authority's accounting policies are briefly described in Note 2 of the financial statements.

Management of the Authority is responsible for establishing and maintaining internal controls designed to ensure that the assets of the Authority are protected from loss, theft, or misuse and to ensure that adequate accounting data are compiled to allow for the preparation of financial statements in conformity with accounting principles generally accepted in the United States of America. Internal controls are designed to provide reasonable, but not absolute, assurance that these objectives are met. The concept of reasonable assurance recognizes that: (1) the cost of a control should not exceed the benefits likely to be derived; and (2) the valuation of costs and benefits requires estimates and judgments by management.

In June 2012, the Authority voted to participate in the State of West Virginia's Enterprise Resource Planning (ERP) project as an agency of the Department of Transportation. In 2014, the Authority began the transition to the State's new ERP System. The State calls this project wvOASIS and it is a comprehensive suite of commercially available integrated modules that provide end-to-end support for statewide administrative functions. ERP includes personnel, payroll, procurement, accounts payable, accounting and project management. The Authority began using the new system on July 8, 2014 for financial and procurement purposes. Also, the new wvOASIS system is designed to provide for integration of Purchasing Card ("P-Card") use to enhance the efficiencies of purchasing and reduce the number of disbursements as well as on-line reconciliation of monthly usage by P-Card holders. All purchasing policies, including bidding and approvals for different levels of purchasing authority, will still apply. The Authority participated in "Wave 2" implementation of the human resources and payroll modules which occurred during 2016.

Tri-Party Agreement of 1988 and Trust Indentures

In 1971, the Turnpike Commission, the Federal Highway Administration (FHWA), and the Department, adopted an agreement necessary for the Department to participate in the reconstruction of the Turnpike. This document charged the Turnpike Commission with the responsibility for all maintenance of the improved facility utilizing toll revenues. The 1971 agreement was superseded and replaced in 1988.

The 1988 agreement specifies (a) that tolls collected be used only on the Turnpike for construction and reconstruction costs, and for costs necessary for operations, maintenance, payment and refinancing of debt service including resurfacing, reconstruction, rehabilitation and restoration; (b) that any bonds issued or any costs incurred will not cause tolls to be increased to an unreasonable amount, and that prior to issuing any bonds the Authority will notify the Department and FHWA of the total amount to be issued and the specific amounts and purposes for which proceeds of such bonds are to be used; and (c) that all records are subject to audit by the Department and/or FHWA.

Operations of the Authority are also controlled by the provisions of a Trust Indenture, dated February 15, 1993, as supplemented. The indenture requires, among other things, the establishment and maintenance of various accounts, which are restricted to use for construction, renewal and replacement, operations and debt service. The Authority's Trustee works closely with staff to ensure the Authority is in compliance with the terms and covenants of the Bond Indenture and that all financial and operational decisions are made in the best interest of the Authority's bondholders.

AWARDS AND ACKNOWLEDGEMENTS

Independent Audit

The trust indentures also require an annual audit by independent certified public accountants. The accounting firm of Suttle & Stalnaker, PLLC was engaged by the Authority to perform the audit for the fiscal years ended June 30, 2017 and 2016.

Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Authority for its comprehensive annual financial report for each of the 27 years through the period ended June 30, 2016, including the first year of operations of the Authority. In order to be awarded a Certificate of Achievement, a governmental unit must publish an easily readable and efficiently organized comprehensive annual financial report, the contents of which conform to program standards. Such reports must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

Acknowledgements

The preparation of this comprehensive annual financial report on a timely basis was made possible with the assistance of the Authority's administrative and accounting staff, the consulting engineers, the independent auditor, and the leadership and support of the Members of the West Virginia Parkways Authority. We express our sincere appreciation for the professional contributions made by these individuals in the preparation of this report.

Respectfully submitted,

Gregory C. Barr, General Manager

Parrish T. French, Director of Finance

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

West Virginia Parkways Authority

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2016

Jeffrey R. Emer

Executive Director/CEO

Financial Section

West Virginia Parkways Authority

Suttle & Stalnaker PLLC
CERTIFIED PUBLIC ACCOUNTANTS

INDEPENDENT AUDITOR'S REPORT

To the Members of the
West Virginia Parkways Authority
Charleston, West Virginia

Report on the Financial Statements

We have audited the accompanying financial statements of the West Virginia Parkways Authority (the Authority), a component unit of the State of West Virginia, as of and for the years ended June 30, 2017 and 2016, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions 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 audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the 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 opinions.

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Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Authority as of June 30, 2017 and 2016, and the respective changes in financial position and cash flows thereof for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 15 through 20, the schedule of proportionate share of the net pension liability, and schedule of pension contributions, and related note on pages 48 through 50 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 Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Authority's basic financial statements. The introductory section and statistical section are presented for purposes of additional analysis and is not a required part of the basic financial statements.

The introductory section and statistical section have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Suttle & Stalnaker, PLLC

Charleston, West Virginia
October 2, 2017

The management of the West Virginia Parkways Authority (hereinafter referred to as the Authority) offers this narrative overview and analysis of the Authority's financial activities for the year ended June 30, 2017 which should be read in conjunction with the Authority's basic financial statements.

FINANCIAL HIGHLIGHTS

- The total number of transactions on the West Virginia Turnpike during fiscal year 2017 increased 1.1% from fiscal year 2016. Total net toll revenues including an increase in the utilization of available discount programs and results of toll enforcement collections programs resulted in a decrease in toll revenue of approximately $840 thousand or 0.9%.

- In conjunction with the adoption of the new toll rate schedule in August 2009, the Authority implemented a ten-year program to address the then approximately $335 million backlog of essential deferred maintenance and capital needs identified with the Authority's consulting engineers. In addition to the increased activity of the Authority's own maintenance staff, the Authority has utilized over $249.6 million of capital towards roadway reconstruction, rehabilitation and repair and other capital expenditures since the rate increase. At June 30, 2017, the Authority had contractual commitments totaling approximately $28.7 million for various Turnpike System improvement projects.

- Excluding depreciation, operating expenses decreased $835 thousand or 1.71% from 2016. Decreases in expenditures related to salt, damage claims and recoveries, guardrail replacement, and other maintenance expenses.

Basic Financial Statements

The Authority accounts for its operations and financial transactions in a manner similar to that used by private business enterprises: the accrual basis of accounting. In these statements, revenue is recognized in the period in which it is earned, and an expense is recognized in the period in which it is incurred, regardless of the timing of its related cash flow.

Overview of the Financial Statements

This discussion and analysis are intended to serve as an introduction to the Authority's basic financial statements. For each fiscal year, the Authority's basic financial statements are comprised of the following:

- Statements of Net Position
- Statements of Revenues, Expenses and Changes in Net Position
- Statements of Cash Flows
- Notes to Financial Statements

The Statements of Net Position present information on all of the Authority's assets, deferred outflows of resources, liabilities, and deferred inflows of resources with the difference between the four reported as net position. Increases or decreases in net position, over time, may serve as a useful indicator of whether the financial position of the Authority is improving or deteriorating.

The Statements of Revenues, Expenses and Changes in Net Position present revenue and expense information and how the Authority's net position changed during the fiscal year as a result of these transactions.

The Statements of Cash Flows present sources and uses of cash for the fiscal year, displayed in the following categories: cash flows from operating activities, cash flows from capital and related financing activities, and cash flows from investing activities.

The Notes provide additional information that is essential to a full understanding of the data provided in the basic financial statements. They are an integral part of the basic financial statements.

FINANCIAL ANALYSIS

Operating Revenue

Toll revenues represent the major source of funding for the Authority. Passenger car traffic volume increased 0.8% and large commercial traffic volume increased by 2.4% during 2017. Passenger car toll revenues increased 0.4% and large commercial toll revenues increased by 1.5%. Total net toll revenues including an increase in the utilization of available discount programs and results of toll enforcement collections programs resulted in a decrease in toll revenue of approximately $840 thousand or 0.9%.

CHANGES IN NET POSITION INFORMATION
(in Thousands)

	2017	2016	2015	Change '17-'16
Revenues:				
Operating revenues:				
Toll revenues	$ 92,739	$ 93,579	$ 88,697	(0.9)%
Other revenues	7,370	7,404	6,797	(0.5)%
Nonoperating revenues:				
Net investment revenue	280	336	338	(16.7)%
Total revenues	100,389	101,319	95,832	(0.9)%
Expenses:				
Operating expenses:				
Maintenance	24,546	24,791	25,488	(1.0)%
Toll collection	9,857	9,566	9,273	3.0%
Traffic enforcement and communications	3,231	3,172	3,912	1.9%
General and administrative	10,308	11,248	9,093	(8.4)%
Depreciation	37,318	36,929	35,357	1.1%
Nonoperating expenses:				
Interest expense	2,210	2,631	2,784	(16.0)%
Total expenses	87,470	88,337	85,907	1.0%
Change in net position	12,919	12,982	9,925	(0.5)%
Net position, beginning of year	488,099	475,117	472,883	2.7%
Net effect of change in accounting policy	-	-	(7,691)	0.0%
Net position, beginning of year, as restated	488,099	475,117	465,192	2.7%
Net position, end of year	$ 501,018	$ 488,099	$ 475,117	2.6%

In early 2009, the Authority engaged its consulting engineer to study the Turnpike's projected operating expenses, renewal and replacement requirements and essential deferred maintenance and capital needs. Factors prompting this decision included a combination of increasing costs and declining traffic and toll revenues exacerbated by the global economic recession, a growing backlog of essential deferred maintenance and capital needs and the potential for a technical default on the Turnpike Bonds. A technical default could have occurred if the Authority had adopted a fiscal year 2010 budget based on the old toll rate schedule and the debt service coverage requirement under its bond indentures had not been met.

In April 2009, the consulting engineers recommended the Authority implement a ten-year program to address the backlog of essential deferred maintenance and capital needs estimated to cost $335 million. It was estimated that the Authority would need just over $20 million of additional revenue for fiscal year 2010 increasing each future fiscal year by approximately 4% per year for inflation and escalation. The additional toll revenue is anticipated to fully fund this program without the issuance of additional debt by the Authority.

Concurrently, the Authority engaged its traffic engineer to study and report on recent transaction and revenue trends and to develop traffic and revenue forecasts under the previous toll rate schedule as well as under various levels of toll rates, and to make a recommendation as to the least increase in toll rates, combined with the largest discount for electronic toll customers, that is estimated to produce enough annual toll revenue to meet the ten year program as outlined by the consulting engineer.

On July 1, 2009, the Authority adopted a new toll and discount rate schedule that became effective August 1, 2009. Cash toll rates were increased by approximately 60% from $1.25 to $2.00 per barrier for passenger cars and from $4.25 to $6.75 per barrier for 5-axle tractor-trailers. All other classes were increased proportionately. As required by State Code, discounts for all classes of vehicles paying by electronic transponders issued by the Parkways Authority were also adopted. For passenger cars, the discount for paying with an Authority issued E-ZPass® transponder is 35%. For commercial trucks, the discount for using any E-ZPass® is 13%, and for using an Authority issued E-ZPass® is 20%.

Beginning in the fiscal year ended June 30, 2010, toll revenues exceeded projections allowing the Authority to proceed with the plan ahead of schedule. The Authority has utilized over $249.6 of capital towards roadway reconstruction, rehabilitation and repair and other capital expenditures since the rate increase.

Operating Expenses

For the year ended June 30, 2017, total operating expenses decreased 0.5% or $446 thousand. Depreciation expense increased $389 thousand due to the increasing amount of infrastructure projects being placed in service. Decreases in expenditures were related to salt, damage claims and recoveries, guardrail replacement and other maintenance expenses.

For the year ended June 30, 2016, total operating expenses increased 3.1% or $2.6 million. Depreciation expense increased $1.6 million due to the increasing amount of infrastructure projects being placed in service. Additionally, there were increases in other expenditures related to salt, damage claims and recoveries, guardrail replacement, and other maintenance expenses.

WEST VIRGINIA PARKWAYS AUTHORITY
(A Component Unit of the State of West Virginia)
Management's Discussion and Analysis (Unaudited)
Years Ended June 30, 2017 and 2016

Non-operating Revenue and Expense

Interest expense decreased 16.0% in 2017 and 5.5% in 2016 due to the amortization of principal and stabilization of the Authority's variable interest rate associated with the Series 2008 Toll Revenue Bonds. Net investment revenue has been reduced to historically low levels as a result of the low interest rates on low risk securities such as those held as investments by the Authority.

CONDENSED STATEMENTS OF NET POSITION INFORMATION
(in Thousands)

ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	2017	2016	2015	Change '17-'16
Current assets	$ 68,601	$ 61,088	$ 61,774	12.3%
Long-term investments	27,806	25,603	22,989	8.6%
Capital assets, net	451,041	453,833	458,292	(0.6)%
Total assets	547,448	540,524	543,055	1.3%
Deferred outflows	8,126	7,402	7,663	9.8%
Total assets plus deferred outflows	$ 555,574	$ 547,926	$ 550,718	1.4%
LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION				
Current liabilities	$ 21,367	$ 18,720	$ 24,704	14.1%
Long-term revenue bonds	10,523	20,479	29,939	(48.6)%
Other long-term liabilities	21,465	17,033	14,495	26.0%
Total liabilities	53,355	56,232	69,138	(5.1)%
Deferred inflows	1,201	3,595	6,463	(66.6)%
Total liabilities plus deferred inflows	54,556	59,827	75,601	(8.8)%
Net position:				
Net investment in capital assets	432,154	426,447	422,704	1.3%
Restricted	65,834	58,626	51,094	12.3%
Unrestricted	3,030	3,026	1,319	0.1%
Total net position	501,018	488,099	475,117	2.6%
Total liabilities, deferred inflows and net position	$ 555,574	$ 547,926	$ 550,718	1.4%

Assets

The Authority's cash and investment balances increased by $10.8 million in the year ended June 30, 2017. For the years ended June 30, 2017 and 2016, ending cash balances remained relatively consistent.

For the year ended June 30, 2017, net capital assets decreased $2.8 million with capital improvements of $34.5 million less depreciation expense of $37.3 million. For the year ended June 30, 2016, net capital assets decreased by $4.4 million as the result of capital improvements of $32.5 million offset by $36.9 million of depreciation expense.

Liabilities

For the year ended June 30, 2017, total liabilities and deferred inflows of resources decreased $5.3 million. Current liabilities increased due to the timing of invoices related to infrastructure projects in progress. Regularly scheduled principal maturities contributed to the decrease in long-term debt. Other long-term liabilities increased due to an increase in the net pension liability.

The Authority's credit ratings are among the best for similar facilities worldwide. The current agency ratings are as follows:

Agency	Rating
Standard & Poor's	AA-
Moody's Investors Service	Aa3

CAPITAL ASSETS

The Authority's capital assets consist of land, buildings, equipment and infrastructure. Infrastructure assets are typically items that are immovable such as highways and bridges. The Authority's investment in capital assets at June 30, 2017 amounted to approximately $1.213 billion of gross asset value with accumulated depreciation of approximately $762 million, leaving a net book value of approximately $451 million. Capital assets represented 81.2% of the Authority's total assets and deferred outflows of resources at June 30, 2017. Additional information on the Authority's capital assets can be found in the Note 5 to the financial statements.

LONG-TERM DEBT

In 2002, the Authority issued $44.2 million in Revenue Refunding Bonds which are due in varying installments through May 2019. These Bonds were issued for the express purpose of defeasing $36.0 million of the Authority's Series 1993 Bonds.

In 2008, the Authority issued $59.1 million of Variable Rate Demand Revenue Refunding Bonds which are due in varying installments through May 2019. These Bonds were issued for the express purpose of refunding $59.1 million of the Authority's Series 2003 Bonds.

Additional information on the Authority's long-term liabilities activity can be found in Notes 6, 7, and 8 to the financial statements.

FACTORS IMPACTING FUTURE OPERATIONS

On June 27, 2017 Senate Bill 1003 was enacted giving the Authority the ability to issue bonds for the purpose of funding infrastructure projects as defined in the statute. The legislation created a special revenue account known as the State Road Construction Account within the State Road Fund to be expended by the Division of Highways for construction, maintenance and repair of public highways and bridges in the state. The bill also included new authorizations, requirements and limitations on the Authority's electronic toll collection programs and discounts to the published cash rates. An unlimited use single annual fee discount program for passenger cars utilizing an Authority issued EZPass transponder is required under these new provisions.

CONTACTING THE AUTHORITY'S FINANCIAL MANAGEMENT

This financial report is designed to provide our bondholders, patrons, and other interested parties with a general overview of the Authority's finances and to demonstrate the Authority's accountability for the money it receives. If you have questions about this report or need additional financial information, contact the West Virginia Parkways Authority, Director of Finance, P. O. Box 1469, Charleston, West Virginia 25325-1469.

WEST VIRGINIA PARKWAYS AUTHORITY

(A Component Unit of the State of West Virginia)

STATEMENTS OF NET POSITION

June 30, 2017 and 2016
(In Thousands)

ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	2017	2016
Current assets:		
Cash and cash equivalents	$ 31,872	$ 31,713
Short-term investments	28,790	20,384
Accounts receivable	3,518	3,624
Accrued interest receivable	102	93
Inventory	3,780	3,891
Other	539	1,383
Total current assets	68,601	61,088
Noncurrent assets:		
Investments in securities maturing beyond one year	27,806	25,603
Capital assets, net	451,041	453,833
Total noncurrent assets	478,847	479,436
Total assets	547,448	540,524
Deferred outflows of resources:		
Deferred outflows related to pension	6,052	3,515
Fair value of hedging derivative instrument	633	1,484
Deferred bond refunding loss:		
Series 2002 revenue bonds	588	959
Series 2008 revenue bonds	853	1,444
Total deferred outflows of resources	8,126	7,402
Total assets plus deferred outflows of resources	$ 555,574	$ 547,926
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION		
Current liabilities:		
Accounts payable	$ 5,023	$ 2,648
Accrued interest payable	115	166
Customer deposits	2,357	2,459
Other accrued liabilities	3,294	3,402
Current portion of compensated absences	773	735
Current portion of long-term revenue bonds	9,805	9,310
Total current liabilities	21,367	18,720
Noncurrent liabilities:		
Noncurrent portion of long-term revenue bonds, net of unamortized premiums:		
Series 2002 revenue bonds	3,823	7,379
Series 2008 revenue bonds	6,700	13,100
	10,523	20,479
Noncurrent portion of compensated absences	224	262
Net pension liability	10,007	5,848
Accrued post-employment benefits other than pensions	11,234	10,923
Total noncurrent liabilities	31,988	37,512
Total liabilities	53,355	56,232
Deferred inflows of resources:		
Fair value of hedging derivative instrument	633	1,484
Deferred inflows related to pension	568	2,111
Total deferred inflows of resources	1,201	3,595
Total liabilities plus deferred inflows of resources	54,556	59,827
Net position:		
Net investment in capital assets	432,154	426,447
Restricted by trust indenture and tri-party agreement	65,834	58,626
Unrestricted	3,030	3,026
Total net position	501,018	488,099
Total liabilities, deferred inflows of resources and net position	$ 555,574	$ 547,926

The accompanying notes are an integral part of these financial statements.

WEST VIRGINIA PARKWAYS AUTHORITY

(A Component Unit of the State of West Virginia)

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

Years Ended June 30, 2017 and 2016
(In Thousands)

	2017	2016
Operating revenues:		
Toll revenues	$ 92,739	$ 93,579
Other revenues	7,370	7,404
Total operating revenues	100,109	100,983
Operating expenses:		
Maintenance	24,546	24,791
Toll collection	9,857	9,566
Traffic enforcement and communications	3,231	3,172
General and administrative	10,308	11,248
Depreciation	37,318	36,929
Total operating expenses	85,260	85,706
Operating income	14,849	15,277
Nonoperating revenues (expenses):		
Interest expense	(2,210)	(2,631)
Net investment revenue	280	336
Nonoperating revenues (expenses), net	(1,930)	(2,295)
Change in net position	12,919	12,982
Net position, beginning of year	488,099	475,117
Net position, end of year	$ 501,018	$ 488,099

The accompanying notes are an integral part of these financial statements.

WEST VIRGINIA PARKWAYS AUTHORITY

(A Component Unit of the State of West Virginia)

STATEMENTS OF CASH FLOWS

Years Ended June 30, 2017 and 2016
(In Thousands)

	2017	2016
Cash flows from operating activities:		
Cash received from customers and users	$ 100,007	$ 101,202
Cash paid to employees	(24,417)	(25,476)
Cash paid to suppliers	(21,971)	(26,353)
Net cash provided by operating activities	53,619	49,373
Cash flows from capital and related financing activities:		
Acquisition of property and equipment	(32,420)	(38,829)
Debt service for revenue bonds:		
Principal	(9,311)	(8,994)
Interest	(1,399)	(1,839)
Net cash used in capital and related financing activities	(43,130)	(49,662)
Cash flows from investing activities:		
Purchase of investments	(45,351)	(49,865)
Proceeds from sales and maturities of investments	34,741	45,605
Interest from investments	280	336
Net cash used in investing activities	(10,330)	(3,924)
Increase (decrease) in cash and cash equivalents	159	(4,213)
Cash and cash equivalents, beginning of year	31,713	35,926
Cash and cash equivalents, end of year	$ 31,872	$ 31,713
Reconciliation of operating income to net cash provided by operating activities:		
Operating income	$ 14,849	$ 15,277
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation	37,318	36,929
Change in assets and liabilities:		
(Increase) decrease in accounts receivable	98	(809)
(Increase) decrease in inventory	111	(546)
(Increase) decrease in other current assets	844	(524)
(Increase) decrease in deferred outflows of resources	(2,537)	(1,462)
Increase (decrease) in accounts payable and other liabilities	8	43
Increase (decrease) in deferred inflows of resources	(1,543)	(2,088)
Increase (decrease) in net pension liability	4,159	1,923
Increase (decrease) in accrued post-employment benefits	312	630
Net cash provided by operating activities	$ 53,619	$ 49,373

The accompanying notes are an integral part of these financial statements.

NOTE 1 - FINANCIAL REPORTING ENTITY

Pursuant to Senate Bill 427, the Authority's legal name was changed to the West Virginia Parkways Authority effective July 1, 2010. The West Virginia Parkways Economic Development and Tourism Authority was created as the successor-in-interest to the West Virginia Turnpike Commission (the Turnpike Commission) by an Act (the Act) of the West Virginia Legislature effective June 1, 1989. All the duties, powers, and functions of the Turnpike Commission were transferred to the Authority. Under the Act, the Authority assumed all assets, property, obligations, indebtedness, and other liabilities of the Turnpike Commission and personnel of the Turnpike Commission were transferred to the employment of the Authority. The Authority has the power to enact and amend its operating budget, and receives no appropriations from the State of West Virginia (the State). The State's Governor or his designee serves as chairman of the Authority and the State's Secretary of Transportation serves as a board member. The other seven Authority members are appointed by the Governor with the approval of the Senate. As the State is able to impose its will over the Authority, the Authority is considered a component unit of the State and its financial statements are discretely presented in the comprehensive annual financial report of the State.

In evaluating how to define the Authority for financial reporting purposes, management has considered all potential component units. The decision to include a potential component unit in the reporting entity is made by applying the criteria set forth in generally accepted accounting principles. Generally accepted accounting principles define component units as those entities which are legally separate governmental organizations for which the appointed members of the Authority are financially accountable, or other organizations for which the nature and significance of their relationship with the Authority are such that exclusion would cause the Authority's financial statements to be misleading. Since no such organizations exist which meet the above criteria, the Authority has no component units.

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting

The Authority is accounted for as a government entity engaged in business-type activities. In accordance with Governmental Accounting Standards Board (GASB) Statement No. 34, *Basic Financial Statements and Management's Discussion and Analysis for State and Local Governments,* and accounting principles generally accepted in the United States of America, the financial statements are prepared on the accrual basis of accounting, using the flow of economic resources measurement focus. Under this basis of accounting, revenues are recognized when earned and expenses are recognized when incurred.

The Authority is included in the State's basic financial statements as a business-type activity using the accrual basis of accounting. Because of the Authority's business-type activities, there may be differences between the amounts reported in these financial statements and the basic financial statements of the State as a result of major fund determination.

Cash Equivalents

For purposes of the statement of cash flows, the Authority considers all highly liquid investment securities purchased with an original maturity of three months or less to be cash equivalents.

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES (Continued)

Investments

Investments are reported at fair value as determined by published sources and realized and unrealized gains or losses are reported in the statements of revenues, expenses, and changes in net position as a component of investment income.

Allowance for Doubtful Accounts

It is the Authority’s policy to provide for future losses on uncollectible accounts based on an evaluation of the underlying accounts, the historical collectability experienced by the Authority on such balances and such other factors which, in the Authority’s judgment, require consideration in estimating doubtful accounts.

As of June 30, 2017 and 2016, management believes that all accounts receivable will be collected; therefore, no allowance for doubtful accounts has been booked.

Inventory

Inventory is valued at the lower of cost (first-in, first-out method) or market.

Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g. roads, bridges, and similar items), are reported at historical cost and include interest on funds borrowed to finance construction. Capital assets are defined by the Authority as assets with an initial, individual cost of more than $30,000 for Turnpike activities and $2,500 for economic development activities and an estimated useful life in excess of one year. Contributed infrastructure assets are stated at the Department of Highways cost basis, adjusted for depreciation occurring from the date the assets were placed in service through the date of transfer of such assets to the Authority. Depreciation is computed using the straight-line method over the following estimated economic useful lives of the assets; buildings (30 years); equipment (5-10 years); and infrastructure (10-50 years).

Deferred Outflow of Resources

A deferred outflow of resources is a consumption of net position by the government that is applicable to a future reporting period.

Compensated Absences

Employees fully vest in all earned but unused vacation and the Authority accrues for obligations that may arise in connection with compensated absences for vacation at the current rate of employee pay. To the extent that accumulated sick leave is expected to be converted to benefits on termination or retirement, the Authority participates in another post-employment benefit plan (see Note 7).

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES (Continued)

Pensions

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Public Employee Retirement System (PERS) and additions to/deductions from PERS's 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 are reported at fair value.

Customer Deposits

Customer deposits consist of prepaid deposits made by personal and commercial customers into E-ZPass® toll collection accounts held by the Authority.

Bond Discounts, Premiums and Deferred Loss on Advance Refunding

Bond discounts and premiums are being accreted and amortized over the varying terms of the bonds issued. The difference between the reacquisition price and the net carrying amount of refunded debt is reported in the financial statements as a deferred outflow of resources, with the related amortization of such deferral being charged to interest expense using the straight-line method.

Net Position

Net position represents assets, plus deferred outflows of resources, less liabilities, less deferred inflows of resources. Net investment in capital assets consists of all capital assets, plus deferred refunding loss on debt related to the acquisition, construction or improvement of those assets, less accumulated depreciation and any outstanding debt related to the acquisition, construction or improvement of those assets. Net position is restricted when there are legal limitations imposed on their use by legislation or external restrictions by other governments, creditors, or grantors. When an expense is incurred for purposes for which both restricted and unrestricted net position are available, restricted resources are applied first.

Restricted net position consists of amounts restricted by trust indenture and the tri-party agreement that can only be used for maintenance and operation of the Turnpike and for debt service.

Deferred Inflow of Resources

A deferred inflow of resources is an acquisition of net position by the government that is applicable to a future reporting period.

Operating Revenues and Expenses

Operating revenues and expenses are those that result from providing services and producing and delivering goods. Revenues and expenses related to capital and related financing, non-capital financing, or investing activities are not included as operating revenues and expenses. Other items not meeting these definitions are reported as nonoperating revenues and expenses.

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES (Continued)

Other Revenues

Other revenues primarily consist of concession sales at the travel centers on the West Virginia Turnpike and craft and food sales at the Caperton Center (also known as TAMARACK-*The Best of West Virginia*). The amount of sales reported is net of costs of goods sold. The related general and administrative expenses are included under operating expenses in the statements of revenues, expenses, and changes in net position.

Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America 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 expenditures during the reporting period. Actual results could differ from those estimates.

Subsequent Events

In preparing these financial statements, the Authority has evaluated events and transactions for potential recognition or disclosure through October 2, 2017, the date the financial statements were issued.

NOTE 3 - DEPOSITS AND INVESTMENTS

All of the Authority's cash on hand is held with outside bank accounts and the West Virginia State Treasurer's Office, totaling approximately $31,872 and $31,713 in 2017 and 2016, respectively.

A reconciliation of the investments disclosed in this Note to the amounts reported in the Statements of Net Position is as follows:

As disclosed in this Note:		
Total deposits with outside banks	$ 26,185	
Total WV State Treasurer's Office	5,687	
Total WV Short Term Bond Pool	3,248	
Total other investments	53,348	
		$ 88,468
As reported on the Statement of Net Position:		
Cash and cash equivalents	$ 31,872	
Short-term investments	28,790	
Investments in securities maturing beyond one year	27,806	
		$ 88,468

NOTE 3 - DEPOSITS AND INVESTMENTS (Continued)

The cost of investment securities is allocated at June 30, 2017 and 2016, among the following restricted and designated accounts created under the various Trust Indentures or by the adoption of Authority resolution (in thousands):

	June 30 2017	2016
Restricted and designated assets:		
Assets restricted by trust indenture and tri-party agreement		
Series 1993, 2002, and 2008 Reserves	$ 10,808	$ 10,851
Renewal and replacement	13,832	14,437
Operating and maintenance	4,974	4,976
Series 2002 debt service	1,191	1,426
Series 2008 debt service	2,052	700
Reserve revenue, restricted by tri-party agreement	41,230	29,292
Insurance liability	1,000	1,000
Patron account	2,357	2,459
Total restricted	77,444	65,141
Non toll revenue fund	3,030	3,026
Total restricted and designated assets as allocated by trust indentures	$ 80,474	$ 68,167

The assets restricted by the 1993 Trust Indenture, as supplemented, must be used for construction, Turnpike maintenance and operation, and debt service. The Trust Indentures require that the balance in the 1993, 2002, and 2008 Reserve Account equal maximum annual debt service for such bonds. The balance in the 1993, 2002, and 2008 Debt Service Accounts are required by the Trust Indentures to have a balance equal to accrued debt service for the current year plus one-twelfth of the debt service which will accrue in the next succeeding fiscal year. The Trust Indentures also require that a reserve be established for Renewal and Replacement that equals the consulting engineer's recommendations for the year. The Operations and Maintenance Account is required by the Trust Indentures to maintain a balance equal to one-eighth of budgeted operating expenses for the fiscal year.

The Insurance Liability account is a self-insured fund that covers the Authority against risk of loss from natural disaster, among other items, and is designated as the Authority's percentage of contribution in the event of a disaster.

The Non Toll Revenue Fund is designated to be used for Non Turnpike activities. This balance is shown as unrestricted net position on the Statements of Net Position.

The Reserve Revenue Account, restricted by the Tri-Party Agreement dated December 1988 among the West Virginia Department of Transportation, the Federal Highway Administration, and the Authority, can only be used for maintenance and operation of the Turnpike and for debt service.

(In thousands)

NOTE 3 - DEPOSITS AND INVESTMENTS (Continued)

Interest rate risk - Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. All of the Authority's investments are subject to interest rate risk. As a means of limiting its exposure to fair value losses resulting from rising interest rates, the Authority's investment policies limit individual securities in the Authority's investment portfolio to remaining maturities of less than five years and the weighted dollar average maturity is capped at three years. As of June 30, 2017, the Authority had the following investments and maturities (in years):

Investment Type	Fair Value	Less than 1	1 - 5	6 - 10	10+
Government agency bonds	$ 42,103	$ 15,442	$ 26,661	$ -	$ -
Corporate bonds	3,248	3,248	-	-	-
Certificate of deposit – financial institution	11,245	10,100	1,145	-	-
	$ 56,596	$ 28,790	$ 27,806	$ -	$ -

Concentration of credit risk - Concentration of credit risk is the risk of loss attributed to the magnitude of the Authority's investment in a single issuer. The Authority's cash deposits with financial institutions were $26,185 and $29,080 at June 30, 2017 and 2016, respectively. These deposits, which had a bank balance of $25,883 and $25,610, respectively, are insured by the Federal Deposit Insurance Corporation and/or collateralized with securities held in the Authority's name by its agent.

As of June 30, 2017, the Authority had investment balances with the following issuers which were greater than or equal to 5% of the Authority's total investment balance:

Security Type	Issuer	Percentage of Investments
Government agency bonds	Federal Home Loan Mortgage Corp.	30%
	Federal National Mortgage Association	28
	Federal Farm Credit Bank	7
	Freddie Mac Sovereign Agency	5

Custodial credit risk - Custodial credit risk of deposits is the risk that in the event of failure of a depository financial institution, the Authority will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. Deposits include nonnegotiable certificates of deposit. None of the Authority's investments contain nonnegotiable certificates of deposit.

Foreign currency risk - Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The Authority does not hold any foreign currency or hold any interests in foreign currency.

NOTE 3 - DEPOSITS AND INVESTMENTS (Continued)

BTI DISCLOSURE INFORMATION

The BTI has adopted an investment policy in accordance with the "Uniform Prudent Investor Act." The "prudent investor rule" guides those with responsibility for investing the money for others. Such fiduciaries must act as a prudent person would be expected to act, with discretion and intelligence, to seek reasonable income, preserve capital, and, in general, avoid speculative investments. The BTI's investment policy is to invest assets in a manner that strives for maximum safety, provides adequate liquidity to meet all operating requirements, and achieves the highest possible investment return consistent with the primary objectives of safety and liquidity. The BTI recognizes that risk, volatility, and the possibility of loss in purchasing power are present to some degree in all types of investments. Due to the short-term nature of the Consolidated Fund, the BTI believes that it is imperative to review and adjust the investment policy in reaction to interest rate market fluctuations/trends on a regular basis and has adopted a formal review schedule. Investment policies have been established for each investment pool and account of the Consolidated Fund.

WV Short Term Bond Pool:

Credit Risk — The BTI limits the exposure to credit risk in the WV Short Term Bond Pool by requiring all corporate bonds to be rated BBB- or higher by Standard & Poor's (or its equivalent). Commercial paper must be rated at least A-1 by Standard & Poor's and P-1 by Moody's. Mortgage-backed and asset-backed securities must be rated AAA by Standard & Poor's and Aaa by Moody's. The pool must have at least 15% of its assets in U.S. Treasury obligations or obligations guaranteed as to repayment of interest and principal by the United States of America. The following table provides information on the credit ratings of the WV Short Term Bond Pool's investments:

	Credit Rating			
Security Type	Moody's	S&P	Carrying Value	Percent of Pool Assets
Commercial paper	P-1	A-1+	$ 9,963	1.32%
	P-1	A-1	13,940	1.85
Corporate asset backed securities	Aaa	AAA	68,441	9.06
	Aaa	NR	79,853	10.58
	NR	AAA	67,375	8.92
	NR	AA	2,003	0.26
Corporate bonds and notes	Aaa	AA+	2,935	0.39
	Aaa	AA+	4,019	0.53
	Aa1	AA+	5,027	0.67
	Aa2	AA+	4,036	0.53
	Aa2	AA	6,989	0.93
	Aa2	AA-	17,124	2.27
	Aa3	AA-	15,106	2.00
	Aa2	A	4,011	0.53
	Aa3	A+	1,104	0.15
	A1	AA-	16,588	2.20
	A1	A+	19,078	2.53
	A1	A	6,355	0.84
	A1	A-	7,276	0.96
	A2	A+	2,616	0.35
	A2	A	25,032	3.32
	A2	A-	10,079	1.33
	A3	A	10,747	1.42

NOTE 3 - DEPOSITS AND INVESTMENTS (Continued)

Corporate bonds and notes (continued)	A3	A-	30,242	4.01
	A3	BBB+	20,183	2.67
	Baa1	A	1,501	0.20
	Baa1	A-	11,991	1.59
	Baa1	BBB+	47,392	6.28
	Baa1	BBB	8,495	1.12
	Baa2	A-	1,018	0.13
	Baa2	BBB	28,770	3.81
	Baa2	BBB-	3,000	0.40
	Baa2	NR	2,000	0.26
	Baa2	BBB+	10,268	1.36
	Baa3	BBB	15,627	2.07
	Baa3	BBB-	7,166	0.95
	Ba1	BBB	2,005	0.27
	Ba1	BBB-	2,304	0.31
	Ba2	BBB-	824	0.11
	NR	BBB+	2,637	0.35
	NR	BBB-	1,990	0.26
U.S. agency mortgage backed securities	Aaa	AA+	37,287	4.94
Corporate mortgage backed securities	Aaa	AAA	4,217	0.56
	Aaa	NR	17,281	2.29
U.S. Treasury notes *	Aaa	AA+	87,588	11.60
Money market funds	Aaa	AAAm	11,479	1.52
			$ 754,962	100.00%

NR = Not Rated

* U.S. agency mortgage-backed securities are explicitly guaranteed by the United States Government and are not subject to credit risk.

At June 30, 2017 and 2016, the Authority ownership of approximately $3,248 represents 0.4% and ownership of approximately $3,208 represents 0.4%, respectively, of these amounts held by the BTI.

Interest Rate Risk **-** Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. All the BTI's Consolidated Fund pools and accounts are subject to interest rate risk.

The overall effective duration of the investments of the WV Short Term Bond Pool cannot exceed 731 days. Maximum effective duration of individual securities cannot exceed 1,827 days (five years) from date of purchase. The following table provides information on the effective duration for the various asset types in the WV Short Term Bond Pool:

	2017		2016	
Security Type	Carrying Value (In Thousands)	Effective Duration (Days)	Carrying Value (In Thousands)	Effective Duration (Days)
Corporate mortgage-backed securities	$ 21,498	347	$ 29,402	338
Corporate bonds and notes	355,535	412	386,556	480
Corporate asset-backed securities	217,672	423	227,907	302
Commercial paper	23,903	113	-	-
U.S. Treasury bonds and notes	87,588	766	89,497	1,034
U.S. agency mortgage-backed securities	37,287	148	47,311	175
Money market funds	11,479	1	10,077	1
	$ 754,962	426	$ 790,750	462

NOTE 3 - DEPOSITS AND INVESTMENTS (Continued)

Other Investment Risks - Other risks of investing include concentration of credit risk, custodial credit risk, and foreign currency risk.

Concentration of credit risk is the risk of loss attributed to the magnitude of a Consolidated Fund pool or account's investment in a single corporate issuer. The BTI investment policy prohibits those pools and accounts permitted to hold corporate securities from investing more than 5% of their assets in any one corporate name or one corporate issue.

The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the BTI will not be able to recover the value of investment or collateral securities that are in the possession of an outside party. Repurchase agreements are required to be collateralized by at least 102% of their value, and the collateral is held in the name of the BTI. The BTI or its agent does not release cash or securities until the counterparty delivers its side of the transaction.

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. None of the Consolidated Fund's investment pools or accounts holds interests in foreign currency or interests valued in foreign currency.

NOTE 4 - FAIR VALUE MEASUREMENTS

The Authority uses fair value measurements of certain assets and liabilities to record fair value adjustments and to determine fair value disclosures. Professional standards establish a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy, as defined below, gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs.

- Level 1 is defined as observable inputs such as quoted prices in active markets for identical assets or liabilities or the publicly available amount at which the asset or liability can be redeemed. Level 1 assets include the Authority's bond investments.

- Level 2 is defined as observable inputs other than Level 1 prices. These include quoted prices for similar assets or liabilities in an active market, quoted prices for identical assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 2 assets include certificates of deposit not considered cash equivalents.

- Level 3 is defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions. Level 3 assets include the interest rate swap on the series 2008 refunding variable rate bonds.

(In thousands)

NOTE 4 - FAIR VALUE MEASUREMENTS (Continued)

Fair values of assets measured on a recurring basis at December 31, are as follows:

Fair Value Measurements at Reporting Date Using

June 30, 2017	Fair Value	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Government agency bonds	$ 42,103	$ 42,103	$ -	$ -
Corporate bonds	3,248	3,248	-	-
Certificates of deposit	11,245	-	11,245	-
Total investments at fair value	$ 56,596	$ 45,351	$ 11,245	$ -
Deferred outflows of hedging derivative instrument	$ 633	$ -	$ -	$ 633
Deferred inflows of hedging derivative instrument	(633)	-	-	(633)
Total hedging derivative instrument at fair value	$ -	$ -	$ -	$ -

June 30, 2016	Fair Value	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Government agency bonds	$ 31,518	$ 31,518	$ -	$ -
Corporate bonds	3,208	3,208	-	-
Certificates of deposit	11,261	-	11,261	-
Total investments at fair value	$ 45,987	$ 34,726	$ 11,261	$ -
Deferred outflows of hedging derivative instrument	$ 1,484	$ -	$ -	$ 1,484
Deferred inflows of hedging derivative instrument	(1,484)	-	-	(1,484)
Total hedging derivative instrument at fair value	$ -	$ -	$ -	$ -

NOTE 5 - CAPITAL ASSETS

A summary of capital assets at June 30 follows:

2017	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets, non-depreciable:				
Land	$ 53,247	$ -	$ -	$ 53,247
Capital assets, depreciable:				
Buildings	103,237	-	-	103,237
Equipment	16,785	2,483	-	19,268
Infrastructure	1,005,361	32,043	-	1,037,404
Total capital assets being depreciated	1,125,383	34,526	-	1,159,909
Less accumulated depreciation for:				
Buildings	(76,791)	(2,531)	-	(79,322)
Equipment	(11,167)	(796)	-	(11,963)
Infrastructure	(636,839)	(33,991)	-	(670,830)
Total accumulated depreciation	(724,797)	(37,318)	-	(762,115)
Total depreciable capital assets, net	400,586	(2,792)	-	397,794
Total capital assets, net	$ 453,833	$ (2,792)	$ -	$ 451,041

2016	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets, non-depreciable:				
Land	$ 53,247	$ -	$ -	$ 53,247
Capital assets, depreciable:				
Buildings	103,237	-	-	103,237
Equipment	14,861	1,924	-	16,785
Infrastructure	974,815	30,546	-	1,005,361
Total capital assets being depreciated	1,092,913	32,470	-	1,125,383
Less accumulated depreciation for:				
Buildings	(73,252)	(3,539)	-	(76,791)
Equipment	(10,472)	(695)	-	(11,167)
Infrastructure	(604,144)	(32,695)	-	(636,839)
Total accumulated depreciation	(687,868)	(36,929)	-	(724,797)
Total depreciable capital assets, net	405,045	(4,459)	-	400,586
Total capital assets, net	$ 458,292	$ (4,459)	$ -	$ 453,833

Interest cost capitalized was $138 and $177 for the years ended June 30, 2017 and 2016, respectively.

(In thousands)

NOTE 6 - REVENUE BONDS PAYABLE

Revenue bonds payable consisted of the following at June 30:

	2017	2016
Series 2002 Serial Bonds, issued $44,205 in February 2002 at 3.50% to 5.25%, due in varying installments from May 2002 through May 2019	$ 6,990	$ 10,200
Series 2008 Variable Rate Demand Revenue Refunding Bonds, $59,100 at variable rates, due in varying installments through April 2019	13,100	19,200
Total revenue bonds payable	20,090	29,400
Add:		
Unamortized premium	238	389
Less:		
Current portion of revenue bonds payable	(9,805)	(9,310)
Total long term revenue bonds payable	10,523	20,479
Less:		
Unamortized deferred loss on advance refunding	(1,441)	(2,403)
	$ 9,082	$ 18,076

The Revenue Bonds under the 1993, 2002, 2003, and 2008 Trust Indentures are secured by a pledge of the Authority's toll revenues and all monies deposited into accounts created by the Trust Indentures. Total debt service was $10,760, $10,755, and $10,577, for the years ended June 30, 2017, 2016, and 2015, respectively. Total pledged revenues were approximately $50,815, $54,100, and $47,721, which represents 472.26%, 503.02%, and 451.18% of the total debt service, respectively, for the years ended June 30, 2017, 2016, and 2015.

In 2002, $44,205 of Revenue Refunding Bonds were issued for the express purpose of defeasing $36,036 of Series 1993 Bonds. The advance refunding resulted in a $6,313 deferred loss arising from the difference between the reacquisition price and the net carrying amount of the refunded debt. Amortization of this deferral, charged annually to interest expense through 2019, approximated $371 in 2017 and 2016. The Authority completed the advance refunding to reduce its aggregate debt service payments by almost $3,003 over an 18-year period (life of the refunding bonds) and obtain an economic gain (difference between the present values of the old and new debt service payments) of $1,624.

In July 2008, the Authority issued $59,100 of Variable Rate Demand Revenue Refunding Bonds for the express purpose of refunding $59,100 of the Authority's Series 2003 Bonds. This refunding resulted in a $5,972 deferred loss arising from the difference between the reacquisition price and the net carrying amount of the refunded debt. Amortization of this deferral, charged annually to interest expense through 2019, approximated $569 in 2017 and 2016, respectively. The Authority completed the refunding to remove the requirement for bond insurance that was included in the Series 2003 Bonds.

NOTE 6 - REVENUE BONDS PAYABLE (Continued)

In July 2011, the Authority converted the Series 2008 Variable Rate Demand Revenue Refunding Bonds to a LIBOR Index rate and placed the bonds with a direct purchaser. The supplemental indenture established eight distinct registered bonds in principal amounts identical to the principal maturity schedule prior to the conversion. The Indenture establishes an applicable factor ranging from 67% to 82% of the one-month LIBOR Index with an additional spread ranging from 70 to 110 basis points on each bond. The Interest Rate Swap associated with the Series 2008 Variable Rate Bonds was amended to relate to the new index rate bonds under substantially similar terms.

The Authority has an interest rate swap derivative instrument to synthetically fix, on a current basis, the Series 2008 Refunding Variable Rate Bonds in order to hedge interest rate fluctuations. The key provisions of the instrument are:

Type	Pay-fixed interest rate swap
Objective	Hedge changes in cash flows on the Series 2008 Refunding Variable Rate Bonds
Notional Amount	$13,100
Effective Date	July 2, 2008
Maturity Date	April 15, 2019
Terms	Pay 4.387%, receive 67% of One Month LIBOR

The fair value of this interest rate swap is estimated using the zero-coupon method. This method calculates the future net settlement payments required by the swap, assuming that the current forward rate implied by the yield curve correctly anticipates future spot interest rates. These payments are then discounted using the spot rate implied by the current yield curve for hypothetical zero-coupon bonds due on the date of the future net settlement on the swap. At June 30, 2017 and 2016, the decrease in the value of the swap since inception was equal to the market value of the swap creating a deferred inflow of resources that offsets the deferred outflow of resources in the Statements of Net Position.

The fair value balance for the hedging derivative instrument outstanding at June 30, 2017, and the change in fair value of the instrument for the year ended June 30, 2017, as reported in the 2017 financial statements are as follows:

Changes in fair value:	
Increase (decrease)	$ (851)
Fair value at June 30, 2017	
Amount	$ 633

Risks

Credit Risk - The credit ratings of the counterparty to the interest rate swap are A1 from Moody's, A+ from Standard & Poor's, and A+ from Fitch. The interest rate swap agreement requires certain collateralization if the credit rating of the counterparty falls below specific levels. As of June 30, 2017, no collateralization was required by the interest rate swap agreement.

Interest Rate Risk - Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of the interest rate swap.

(In thousands)

NOTE 6 - REVENUE BONDS PAYABLE (Continued)

Basis Risk - The Authority is exposed to basis risk on the fixed interest rate swap because the variable-rate payments received by the Authority on this hedging derivative instrument are based on rates other than the interest rate the Authority pays on the hedged variable-rate debt.

Termination Risk - The interest rate swap agreement provides for certain events that could cause the counterparty or the Authority to terminate the swap. The swap may be terminated by the counterparty or the Authority if the other party fails to make payments when due, there is a material breach of representations and warranties, an event of illegality occurs, and failure to comply with any other provisions of the agreement after a specified notice period.

In addition, if the counterparty fails to maintain ratings of at least Baa3 by Moody's and BBB- by Standard and Poor's, the swap may be terminated by the Authority. If the Authority fails to maintain ratings of at least Baa3 by Moody's and BBB- by Standard and Poor's, the swap may be terminated by the counterparty. The amount of the termination payment is determined by market quotation by obtaining pricing levels from at least three reference market makers.

The Authority has the right to optionally terminate the swap agreement at any time. The termination amount owed by either the Authority or the counterparty may be determined by market quotation. If at the time of termination the swap has a negative fair value, the Authority would owe the counterparty a payment equal to the swap's fair value.

Rollover Risk - The Authority is exposed to rollover risk on the hedging interest rate swap that may be terminated prior to the maturity of the hedged debt.

Swap Payments and Associated Debt - Using rates as of June 30, 2017, debt service requirements of the variable rate debt and net swap payments, assuming current interest rates remain the same for their term, were as follows. As rates vary, variable rate bond interest payments and net swap payments will vary.

Year Ending	Variable-Rate Bonds		Interest Rate	
June 30	Principal	Interest	Swap, Net	Total
2018	$ 6,400	$ 246	$ 472	$ 7,118
2019	6,700	128	241	7,069
	$ 13,100	$ 374	$ 713	$ 14,187

Bonds Payable Progression and Maturities

The following schedule summarizes the revenue bonds outstanding as of June 30:

2017	Beginning Balance	Additions	Retired	Amortization	Ending Balance	Due Within One Year
Series 2002	$ 10,589	$ -	$ (3,210)	$ (150)	$ 7,229	$ 3,405
Series 2008	19,200	-	(6,100)	-	13,100	6,400
	$ 29,789	$ -	$ (9,310)	$ (150)	$ 20,329	$ 9,805

NOTE 6 - REVENUE BONDS PAYABLE (Continued)

2016	Beginning Balance	Additions	Retired	Amortization	Ending Balance	Due Within One Year
Series 2002	$ 13,834	$ -	$ (3,095)	$ (150)	$ 10,589	$ 3,210
Series 2008	25,100	-	(5,900)	-	19,200	6,100
	$ 38,934	$ -	$ (8,995)	$ (150)	$ 29,789	$ 9,310

Debt service requirements for the Revenue Bonds subsequent to June 30, 2017, are as follows:

Year Ending June 30	Principal Maturities	Interest, Including Accretion	Total
2018	$ 9,805	$ 914	$ 10,719
2019	10,285	454	10,739
	$ 20,090	$ 1,368	$ 21,458

Principal outstanding June 30, 2017	$ 20,090
Add:	
Unamortized premium	238
Less:	
Current portion of revenue bonds payable	(9,805)
Long-term portion	$ 10,523

The Revenue Bonds are subject to the arbitrage rebate provisions of the Internal Revenue Code (the Code). The Code requires that 90% of excess investment earnings on the Bond proceeds be paid to the Internal Revenue Service every five years in order for the Bonds to maintain their tax-exempt status. At June 30, 2017 and 2016, the Authority's estimated arbitrage rebate liability was zero.

NOTE 7 - POST-EMPLOYMENT BENEFITS OTHER THAN PENSIONS

Plan Description

The Authority participates in the West Virginia Other Post-employment Benefit Plan (OPEB Plan) of the West Virginia Retiree Health Benefit Trust Fund (RHBT), a cost-sharing multiple-employer defined benefit post-employment healthcare plan administered by the West Virginia Public Employees Insurance Agency (WVPEIA). The OPEB Plan provides retiree post-employment health care benefits for participating state and local government employers. The provisions of the Code of West Virginia, 1931, as amended (the Code), assigns the authority to establish and amend benefit plans to the WVPEIA Board of Trustees. The WVPEIA issues a publicly available financial report that includes financial statements and required supplementary information for the OPEB Plan. That report may be obtained by writing to Public Employees Insurance Agency, 601 57th Street, S.E., Suite 2, Charleston, West Virginia, 25304-2345, or by calling 1-888-680-7342.

NOTE 7 - POST-EMPLOYMENT BENEFITS OTHER THAN PENSIONS (Continued)

Funding Policy

The Code requires the OPEB Plan to bill the participating employers 100% of the Annual Required Contribution (ARC), an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) of the plan over a period not to exceed thirty years. Participating plan employers are billed per active health policy per month.

The Authority's OPEB liability was $11,234, $10,923, and $10,293, and total OPEB expense was $1,024, $1,368, and $1,320, for the years ended June 30, 2017, 2016, and 2015, respectively. The Authority has paid premiums of $713, $738, and $779, which represents approximately 70%, 54%, and 59% of the required contributions, respectively, for the years ended June 30, 2017, 2016, and 2015.

During fiscal year 2012, the West Virginia Legislature passed legislation to provide alternate funding sources for the RHBT OPEB unfunded liability. In addition, the WVPEIA Finance Board imposed limits on the retiree subsidy currently provided for WVPEIA premiums for retirees. Future increases in the subsidy will be limited to no more than 3% per year. These actions have had a material impact on the amounts billed by the RHBT to the Authority as well as an expected material impact on amounts billed in the future, resulting in decreases in the recorded OPEB liability.

NOTE 8 - PENSION PLAN

All full-time Authority employees are eligible to participate in the State of West Virginia Public Employees' Retirement System (PERS), a cost-sharing multiple-employer public employee retirement system. PERS also provides delayed retirement, early retirement, death and disability benefits. The West Virginia Consolidated Public Retirement Board issues a publicly available financial report that includes financial statements and required supplementary information for PERS. That report may be obtained by writing to West Virginia Consolidated Public Retirement Board, 4101 MacCorkle Avenue S.E., Charleston, WV 25304-1636 or by calling (304) 558-3570.

Benefits Provided

Benefits are provided through PERS using a two-tiered system. Effective July 1, 2015, PERS implemented the second tier, Tier II. Employees hired, for the first time, on or after July 1, 2015 are considered Tier II members. Tier I and Tier II members are subject to different regulations.

NOTE 8 - PENSION PLAN (Continued)

Tier I: Employees who retire at or after age 60 with five or more years of credited service, or at least age 55 with age and service equal to 80 years or greater, are entitled to a retirement benefit established by State statute, payable monthly for life, in the form of a straight-life annuity equal to two percent of the employee's final average salary multiplied by years of service. Final average salary is the average of the highest annual compensation received by an employee during any period of three consecutive years of credited service included within fifteen years of credited service immediately preceding the termination date of employment with a participating public employer or, if the employee has less than three years of credited service, the average of the annual rate of compensation received by the employee during the total years of credited service. Terminated members with at least five years of contributory service who do not withdraw their accumulated contributions may elect to receive their retirement annuity beginning at age 62.

Tier II: Employees who retire at or after age 62 with ten or more years of credited service are entitled to a retirement benefit established by State statute, payable monthly for life, in the form of a straight-life annuity equal to two percent of the employee's final average salary multiplied by years of service. Final average salary is the average of the highest annual compensation received by an employee during any period of five consecutive years of credited service included within fifteen years of credited service immediately preceding the termination date of employment with a participating public employer. Terminated members with at least ten years of contributory service who do not withdraw their accumulated contributions may elect to receive their retirement annuity beginning at age 64.

Contributions

While contribution rates are legislatively determined, actuarial valuations are performed to assist PERS and the State Legislature in determining contribution rates. Current funding policy requires employer contributions of 12.0%, 13.5%, and 14.0% for the years ended June 30, 2017, 2016, and 2015, respectively. Effective July 1, 2017, a decrease in the contribution rate of 1.0%, will decrease the Authority's contribution rate to 11.0%. The employee contribution rate is 4.5% and 6.0% for Tier I and Tier II employees, respectively. Total contributions to PERS, for the fiscal years ended June 30, 2017, 2016, and 2015, were $1,873, $2,081, and $2,053 from the Authority and $703, $773, and $660 from the covered employees, respectively.

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At June 30, 2017 and 2016, the Authority reported a liability of $10,007 and $5,848, respectively, for its proportionate share of the net pension liability. The June 30, 2017 net pension liability was measured as of June 30, 2016 and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of June 30, 2015, rolled forward to the measurement date of June 30, 2016. The June 30, 2016 net pension liability was measured as of June 30, 2015 and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of June 30, 2014, rolled forward to the measurement date of June 30, 2015. The Authority's proportion of the net pension liability was based on a projection of the Authority's long-term share of contributions to the pension plan relative to the projected contributions of all participating employers, actuarially determined. At June 30, 2016, the Authority's proportionate share was 1.09%, which was an increase of .04% from its proportionate share measured as of June 30, 2015.

(In thousands)

NOTE 8 - PENSION PLAN (Continued)

For the years ended June 30, 2017 and 2016, the Authority recognized pension expense of $1,669 and $628, respectively. At June 30, 2017 and 2016, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	June 30, 2017	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Net difference between projected and actual earnings on pension plan investments	$ 3,145	$ -
Difference between expected and actual experience	834	-
Changes of assumptions	-	488
Changes in proportion and differences between Authority contributions and proportionate share of contributions	200	80
Authority contributions subsequent to the measurement date	1,873	-
Total	$ 6,052	$ 568

	June 30, 2016	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Net difference between projected and actual earnings on pension plan investments	$ -	$ 1,282
Difference between expected and actual experience	1,196	-
Changes of assumptions	-	703
Changes in proportion and differences between Authority contributions and proportionate share of contributions	-	126
Authority contributions subsequent to the measurement date	2,319	-
Total	$ 3,515	$ 2,111

$1,873 reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2017. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended June 30:	
2018	$ 649
2019	664
2020	1,336
2021	962
Total	$ 3,611

NOTE 8 - PENSION PLAN (Continued)

Actuarial assumptions and methods - The total pension liability in the June 30, 2016 actuarial valuation was determined using the following actuarial assumptions, applied to all periods in the measurement:

Inflation	3.00%
Salary increases	3.0% – 6.0%, average, including inflation
Investment rate of return	7.5%, net of pension plan investment expense

Mortality rates were based on 110% of RP-2000 Non-Annuitant, Scale AA for healthy males, 101% of RP-2000 Non-Annuitant, Scale AA for healthy females, 96% of RP-2000 Disabled Annuitant Scale AA for disabled males, and 107% of RP-2000 Disabled Annuitant, Scale AA for disabled females.

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period July 1, 2009 through June 30, 2014.

Long-term expected rates of return - The long-term rates of return on pension plan investments were determined using a building-block method in which estimates of expected 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 percentages and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Core Fixed Income	7.5%	2.7%
High Yield Fixed Income	7.5%	5.5%
Domestic Equity	27.5%	7.0%
International Equity	27.5%	7.7%
Real Estate	10.0%	5.6%
Private Equity	10.0%	9.4%
Hedge Funds	10.0%	4.7%
Total	100.0%	

Discount rate - The discount rate used to measure the total pension liability was 7.5%. The projections of cash flows used to determine the discount rate assumed that employee contributions will be made at the current contribution rate and that employer contributions from employers will continue to be made at statutorily required rates, which are determined annually based on actuarial valuations. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rates of return on pension plan investments were applied to all periods of projected benefit payments to determine the total pension liability. Although discount rates are subject to change between measurement dates, there were no changes in the discount rate in the current period.

(In thousands)

NOTE 8 - PENSION PLAN (Continued)

Sensitivity of the Authority's proportionate share of the net pension liability to changes in the discount rate - The following table presents the Authority's proportionate share of the net pension liability calculated using the current discount rate of 7.5% as well as what the Authority's proportionate share of the net pension liability would be if it were calculated using a discount rate that is one-percentage-point lower or one-percentage-point higher than the current rate:

	1% Decrease 6.5%	Total Net Pension Liability Discount Rate 7.5%	1% Increase 8.5%
PERS	$ 18,114	$ 10,007	$ 3,122

Pension plan fiduciary net position - Detailed information about the pension plan's fiduciary net position is available in the separately issued PERS financial report available at the Consolidated Public Retirement Board's website at www.wvretirement.com.

NOTE 9 - NONCURRENT LIABILITIES

The following is a summary of long-term obligation transactions for the Authority for the years ended June 30:

2017	Beginning Balance	Additions	Reductions	Ending Balance	Current Portion
Compensated absences	$ 997	$ -	$ -	$ 997	$ 773
OPEB liability	10,923	1,024	(713)	11,234	-
Net pension liability	5,848	6,478	(2,319)	10,007	-
Total noncurrent liabilities	$ 17,768	$ 7,502	$ (3,032)	$ 22,238	$ 773

2016	Beginning Balance	Additions	Reductions	Ending Balance	Current Portion
Compensated absences	$ 997	$ -	$ -	$ 997	$ 735
OPEB liability	10,293	1,368	(738)	10,923	-
Net pension liability	3,925	3,976	(2,053)	5,848	-
Total noncurrent liabilities	$ 15,215	$ 5,344	$ (2,791)	$ 17,768	$ 735

NOTE 10 - LEASES

The Authority leases certain facilities and service areas to third party businesses under operating lease agreements. The cost of the facilities and service areas were $36,180 and $36,180 at June 30 2017 and 2016, respectively. Accumulated depreciation on the facilities and service areas was $27,561 and $26,334 at June 30, 2017 and 2016, respectively.

The Authority receives both guaranteed payments and contingent payments under the leases. Aggregate rental income from the lease agreements was approximately $3,344 and $3,296 for the years ended June 30, 2017 and 2016, respectively. Total contingent rental income received was approximately $2,577 and $2,529 for the years ended June 30, 2017 and 2016, respectively. Future minimum rentals are as follows at June 30:

2018	$ 767
2019	383
	$ 1,150

NOTE 11 - RISK MANAGEMENT

The Authority is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to and illnesses of employees; and natural disasters.

The Authority has obtained coverage for job-related injuries of employees and health coverage for its employees from a commercial insurer, and the West Virginia Public Employees Insurance Agency (PEIA). In exchange for the payment of premiums to PEIA and the commercial insurer, the Authority has transferred its risks related to health coverage for employees and job-related injuries of employees.

The Authority, for an annual premium, obtains insurance coverage for general liability, property damage, business interruption, errors and omissions, and natural disasters through the West Virginia Board of Risk and Insurance Management, a public risk pool entity insuring the State of West Virginia, its component units, local government entities, and eligible not-for-profit organizations. Liability coverage provided to all insured entities under this policy is limited to $1,000 per occurrence, subject to an annual aggregate limit of coverage of $22,000. To further reduce its risk of loss, the Authority, for an annual premium paid to a commercial insurer, has obtained an additional liability policy which provides coverage of $10,000 over and above the coverage provided by the West Virginia Board of Risk and Insurance Management. For the fiscal years ended June 30, 2017, 2016, and 2015, the Authority's insurance coverage has been sufficient to meet all claims and settlements against the Authority.

NOTE 12 - COMMITMENTS AND CONTINGENCIES

Litigation

The Authority is a defendant in certain legal proceedings pertaining to matters incidental to routine operations. Based on the current status of these legal proceedings, it is the opinion of Authority management and counsel that the ultimate resolution of these matters will not have a material effect on the Authority's financial position.

NOTE 12 - COMMITMENTS AND CONTINGENCIES (Continued)

Construction Commitments

At June 30, 2017, the Authority had contractual commitments totaling $28,722 for various Turnpike System improvement projects. Subsequent to June 30, 2017, the Authority entered into additional contractual commitments totaling $5,131.

Potential Bond Issuance

On June 27, 2017 Senate Bill 1003 was enacted giving the Authority the ability to issue bonds for the purpose of funding infrastructure projects as defined in the statute. The legislation created a special revenue account known as the State Road Construction Account within the State Road Fund to be expended by the Division of Highways for construction, maintenance and repair of public highways and bridges in the state. The bill also included new authorizations, requirements and limitations on the Authority's electronic toll collection programs and discounts to the published cash rates. An unlimited use single annual fee discount program for passenger cars utilizing an Authority issued EZPass transponder is required under these new provisions.

NOTE 13 - ACCOUNTING PRONOUNCEMENTS

Newly Adopted Statements Issued by the Governmental Accounting Standards Board

The Authority implemented Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, effective for fiscal years beginning after June 15, 2016. The requirements of this Statement will improve the usefulness of information about postemployment benefits other than pensions (other postemployment benefits or OPEB) included in the general purpose external financial reports of state and local governmental OPEB plans for making decisions and assessing accountability. The adoption of GASB Statement No. 74 had no impact on the June 30, 2017 financial statements.

The Authority implemented Statement No. 77, *Tax Abatement Disclosures*, effective for fiscal years beginning after December 15, 2015. The requirements of this Statement will improve financial reporting by giving users of financial statements essential information that is not consistently or comprehensively reported to the public at present. Disclosure of information about the nature and magnitude of tax abatements will make these transactions more transparent to financial statement users. As a result, users will be better equipped to understand (1) how tax abatements affect a government's future ability to raise resources and meet its financial obligations and (2) the impact those abatements have on a government's financial position and economic condition. The adoption of GASB Statement No. 77 had no impact on the June 30, 2017 financial statements.

The Authority implemented Statement No. 80, *Blending Requirements for Certain Component Units an amendment of GASB Statement No. 14*, effective for fiscal years beginning after June 15, 2016. The objective of this Statement is to improve financial reporting by clarifying the financial statement presentation requirements for certain component units. This Statement amends the blending requirements established in paragraph 53 of Statement No. 14, *The Financial Reporting Entity*, as amended. The adoption of GASB Statement No. 80 had no impact on the June 30, 2017 financial statements.

NOTE 13 - ACCOUNTING PRONOUNCEMENTS (Continued)

The Authority implemented Statement No. 81, *Irrevocable Split-Interest Agreements*, effective for fiscal years beginning after December 15, 2016. The objective of this Statement is to improve accounting and financial reporting for irrevocable split-interest agreements by providing recognition and measurement guidance for situations in which a government is a beneficiary of the agreement. The adoption of GASB Statement No. 81 had no impact on the June 30, 2017 financial statements.

The Authority implemented Statement No. 86, *Certain Debt Extinguishment Issues*, effective for fiscal years beginning after June 15, 2017. The requirements of this Statement will increase consistency in accounting and financial reporting for debt extinguishments by establishing uniform guidance for derecognizing debt that is defeased in substance, regardless of how cash and other monetary assets placed in an irrevocable trust for the purpose of extinguishing that debt were acquired. The requirements of this Statement also will enhance consistency in financial reporting of prepaid insurance related to debt that has been extinguished. In addition, this Statement will enhance the decision-usefulness of information in notes to financial statements regarding debt that has been defeased in substance. The adoption of GASB Statement No. 86 had no impact on the June 30, 2017 financial statements.

Recent Statements Issued by the Governmental Accounting Standards Board

The Governmental Accounting Standards Board has issued Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, effective for fiscal years beginning after June 15, 2017. The requirements of this Statement will improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions (other postemployment benefits or OPEB). It also improves information provided by state and local governmental employers about financial support for OPEB that is provided by other entities. The Authority has not yet determined the effect that the adoption of GASB Statement No. 75 may have on its financial statements.

The Governmental Accounting Standards Board has also issued Statement No. 83, *Certain Asset Retirement Obligations*, effective for fiscal years beginning after June 15, 2018. The requirements of this Statement will enhance comparability of financial statements among governments by establishing uniform criteria for governments to recognize and measure certain asset retirement obligations (AROs), including obligations that may not have been previously reported. This Statement also will enhance the decision-usefulness of the information provided to financial statement users by requiring disclosures related to those AROs. The Authority has not yet determined the effect that the adoption of GASB Statement No. 83 may have on its financial statements.

The Governmental Accounting Standards Board has also issued Statement No. 84, *Fiduciary Activities*, effective for fiscal years beginning after December 15, 2018. The requirements of this Statement will enhance consistency and comparability by (1) establishing specific criteria for identifying activities that should be reported as fiduciary activities and (2) clarifying whether and how business-type activities should report their fiduciary activities. Greater consistency and comparability enhances the value provided by the information reported in financial statements for assessing government accountability and stewardship. The Authority has not yet determined the effect that the adoption of GASB Statement No. 84 may have on its financial statements.

NOTE 13 - ACCOUNTING PRONOUNCEMENTS (Continued)

The Governmental Accounting Standards Board has also issued Statement No. 85, *Omnibus 2017*, effective for fiscal years beginning after June 15, 2017. The requirements of this Statement will enhance consistency in the application of accounting and financial reporting requirements. Consistent reporting will improve the usefulness of information for users of state and local government financial statements. The Authority has not yet determined the effect that the adoption of GASB Statement No. 85 may have on its financial statements.

The Governmental Accounting Standards Board has also issued Statement No. 87, *Leases*, effective for fiscal years beginning after December 15, 2019. The requirements of this Statement will increase the usefulness of governments' financial statements by requiring reporting of certain lease liabilities that currently are not reported. It will enhance comparability of financial statements among governments by requiring lessees and lessors to report leases under a single model. This Statement also will enhance the decision-usefulness of the information provided to financial statement users by requiring notes to financial statements related to the timing, significance, and purpose of a government's leasing arrangements. The Authority has not yet determined the effect that the adoption of GASB Statement No. 87 may have on its financial statements.

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WEST VIRGINIA PARKWAYS AUTHORITY
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF PROPORTIONATE SHARE OF THE NET PENSION LIABILITY
June 30, 2017

Public Employees Retirement System
Last 10 Fiscal Years*
(In Thousands)

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Authority's proportion of the net pension liability (asset) (percentage)	1.09%	1.05%	1.06%	1.07%						
Authority's proportionate share of the net pension liability (asset)	$ 10,007	$ 5,848	$ 3,925	$ 9,756						
Authority's covered-employee payroll	$ 15,415	$ 14,664	$ 14,241	$ 14,321						
Authority's proportionate share of the net pension liability (asset) as a percentage of its covered-employee payroll	64.92%	39.88%	27.56%	68.12%						
Plan fiduciary net position as a percentage of the total pension liability	86.11%	91.29%	93.98%	79.70%						

* - The amounts presented for each fiscal year were determined as of June 30th of the previous year.
This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.

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WEST VIRGINIA PARKWAYS AUTHORITY
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF PENSION CONTRIBUTIONS
June 30, 2017

Public Employees Retirement System
Last 10 Fiscal Years
(In Thousands)

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Contractually required contribution	$ 1,873	$ 2,081	$ 2,053	$ 2,065	$ 2,005	$ 2,061	$ 1,787	$ 1,681	$ 1,541	$ 1,594
Contributions in relation to the contractually required contribution	(1,873)	(2,081)	(2,053)	(2,065)	(2,005)	(2,061)	(1,787)	(1,681)	(1,541)	(1,594)
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Authority's covered-employee payroll	$ 15,612	$ 15,415	$ 14,664	$ 14,241	$ 14,321	$ 14,214	$ 14,296	$ 15,282	$ 14,676	$ 15,181
Contributions as a percentage of covered-employee payroll	12.00%	13.50%	14.00%	14.50%	14.00%	14.50%	12.50%	11.00%	10.50%	10.50%

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WEST VIRGINIA PARKWAYS AUTHORITY
(A Component Unit of the State of West Virginia)
NOTE TO REQUIRED SUPPLEMENTARY INFORMATION
Year Ended June 30, 2017

Amounts reported during the year ended June 30, 2017 reflect an assumed inflation rate of 3.0% rather than an assumed rate of 1.9% that was used in the prior year.

There were no other factors that affected trends in the amounts reported. If necessary, additional information can be obtained from the CPRB Comprehensive Annual Financial Report for the year ended June 30, 2016.

Statistical Section

West Virginia Parkways Authority

Statistical Section

This part of the West Virginia Parkways Authority's Comprehensive Annual Financial Report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information say about the Authority's overall financial health.

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WEST VIRGINIA PARKWAYS AUTHORITY

CONDENSED SCHEDULES OF NET POSITION

(In Thousands)

	Year Ended June 30,									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES										
Current assets	$ 68,601	$ 61,088	$ 61,774	$ 53,678	$ 49,513	$ 42,259	$ 62,391	$ 48,626	$ 29,262	$ 18,633
Long-term investments	27,806	25,603	22,989	26,240	20,401	24,528	8,662	11,894	15,408	27,589
Capital assets, net	451,041	453,833	458,292	458,490	470,889	470,161	466,398	472,092	484,038	506,746
Deferred outflows of resources	8,126	7,402	7,663	7,603	9,717	12,481	13,046	-	-	-
Total assets plus deferred outflows of resources	$ 555,574	$ 547,926	$ 550,718	$ 546,011	$ 550,520	$ 549,429	$ 550,497	$ 532,612	$ 528,708	$ 552,968
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION										
Current liabilities	$ 21,367	$ 18,720	$ 24,704	$ 20,689	$ 22,363	$ 18,356	$ 21,516	$ 20,697	$ 15,753	$ 16,443
Long-term revenue bonds, net	10,523	20,479	29,939	39,084	47,775	55,836	63,881	62,254	73,754	80,763
Other long-term liabilities	21,465	17,033	14,495	10,039	9,901	9,522	6,908	4,415	1,868	1,638
Deferred inflows of resources	1,201	3,595	6,463	3,316	4,489	6,314	5,938	-	-	-
Total liabilities plus deferred inflows of resources	54,556	59,827	75,601	73,128	84,528	90,028	98,243	87,366	91,375	98,844
Net position:										
Net investment in capital assets	432,154	426,447	422,704	415,153	420,432	412,527	408,157	402,069	401,735	416,812
Restricted by trust indenture and tri-party agreement	65,834	58,626	51,094	56,020	43,824	45,127	40,961	39,570	30,175	32,096
Unrestricted	3,030	3,026	1,319	1,710	1,736	1,747	3,136	3,607	5,423	5,216
Total net position	501,018	488,099	475,117	472,883	465,992	459,401	452,254	445,246	437,333	454,124
Total liabilities, deferred inflows of resources and net position	$ 555,574	$ 547,926	$ 550,718	$ 546,011	$ 550,520	$ 549,429	$ 550,497	$ 532,612	$ 528,708	$ 552,968

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Source: West Virginia Parkways Authority

WEST VIRGINIA PARKWAYS AUTHORITY

CONDENSED SCHEDULES OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

(In Thousands)

	Year Ended June 30,									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Operating revenues:										
Toll revenues	$ 92,739	$ 93,579	$ 88,697	$ 84,907	$ 83,519	$ 83,907	$ 81,960	$ 79,871	$ 53,341	$ 56,563
Other revenues	7,370	7,404	6,797	6,749	6,944	7,217	7,010	7,087	6,923	7,459
	100,109	100,983	95,494	91,656	90,463	91,124	88,970	86,958	60,264	64,022
Operating expenses:										
Maintenance	24,546	24,791	25,488	23,028	21,907	22,337	23,827	21,287	17,664	17,448
Toll collection	9,857	9,566	9,273	9,826	10,332	11,411	10,984	11,058	10,207	10,117
Traffic enforcement	3,231	3,172	3,912	3,487	3,581	3,744	3,188	2,650	2,973	2,815
General and administrative	10,308	11,248	9,093	9,154	9,159	9,590	9,446	9,605	9,022	9,896
Depreciation	37,318	36,929	35,357	36,294	35,595	32,924	32,227	31,160	31,406	31,064
	85,260	85,706	83,123	81,789	80,574	80,006	79,672	75,760	71,272	71,340
Operating income (loss)	14,849	15,277	12,371	9,867	9,889	11,118	9,298	11,198	(11,008)	(7,318)
Nonoperating revenues (expenses):										
Net investment revenue	280	336	338	302	122	242	355	1,377	1,307	2,293
Intergovernmental	-	-	-	-	-	-	2,834	993	-	-
Interest expense	(2,210)	(2,631)	(2,784)	(3,278)	(3,420)	(4,213)	(4,630)	(5,655)	(7,090)	(7,330)
On-behalf contributions	-	-	-	-	-	-	-	-	-	496
	(1,930)	(2,295)	(2,446)	(2,976)	(3,298)	(3,971)	(1,441)	(3,285)	(5,783)	(4,541)
Change in net position	12,919	12,982	9,925	6,891	6,591	7,147	7,857	7,913	(16,791)	(11,859)
Cumulative effect of implementation of GASB Statement 68 (2015), 65 (2011), and 43 (2008)	-	-	(7,691)	-	-	-	(849)	-	-	2,557
Net position, beginning of year	488,099	475,117	472,883	465,992	459,401	452,254	445,246	437,333	454,124	463,426
Net position, end of year	$ 501,018	$ 488,099	$ 475,117	$ 472,883	$ 465,992	$ 459,401	$ 452,254	$ 445,246	$ 437,333	$ 454,124

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Source: West Virginia Parkways Authority

WEST VIRGINIA PARKWAYS AUTHORITY

FINANCIAL RATIOS

	Year Ended June 30,									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Long-term series 2001 revenue bonds to total assets plus deferred outflows of resources	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.99%	1.10%
Long-term series 2002 revenue bonds to total assets plus deferred outflows of resources	0.65%	1.28%	1.85%	2.43%	3.10%	3.63%	4.14%	4.08%	4.52%	4.67%
Long-term series 2003 revenue bonds to total assets plus deferred outflows of resources	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.83%
Long-term series 2008 revenue bonds to total assets plus deferred outflows of resources	1.21%	2.39%	3.49%	4.60%	5.58%	6.53%	7.46%	7.61%	8.44%	0.00%
Total long-term revenue bonds to total assets plus deferred outflows of resources	1.85%	3.67%	5.34%	7.03%	8.68%	10.16%	11.60%	11.69%	13.95%	14.60%
Net position to total assets plus deferred outflows of resources	90.18%	89.08%	86.27%	86.61%	84.65%	83.61%	82.15%	83.60%	82.72%	82.12%
Long-term bonds to lane miles	24.14	47.16	69.01	90.13	112.15	131.07	149.96	146.14	173.13	189.58
Long-term bonds to number of transactions/vehicles	0.28	0.54	0.82	1.10	1.39	1.39	1.62	1.81	2.19	2.34

Source: West Virginia Parkways Authority

WEST VIRGINIA PARKWAYS AUTHORITY

REVENUE BOND COVERAGE (1)

(In Thousands)

	Year Ended June 30									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Revenues:										
Toll revenues	$ 92,739	$ 93,579	$ 88,697	$ 84,907	$ 83,519	$ 83,907	$ 81,960	$ 79,871	$ 53,341	$ 56,563
Adjustment to toll revenues per Trust Indentures	(303)	(356)	(72)	(177)	(81)	(333)	480	(683)	200	127
Total revenues	92,436	93,223	88,625	84,730	83,438	83,574	82,440	79,188	53,541	56,690
Operating expenses	85,260	85,706	83,123	81,789	80,574	80,006	79,496	75,760	71,272	71,340
Adjustments to operating expenses per Trust Indentures:										
Depreciation	(37,318)	(36,929)	(35,357)	(36,294)	(35,595)	(32,924)	(32,227)	(31,160)	(31,406)	(31,064)
Renewal and replacement provided for by reserves	(2,031)	(2,701)	(2,476)	(3,139)	(2,789)	(2,888)	(3,280)	(2,617)	(2,963)	(2,714)
Economic development and tourism costs	(4,931)	(4,899)	(4,850)	(5,087)	(5,132)	(6,748)	(5,000)	(5,102)	(5,020)	(5,590)
Other	641	(2,054)	464	1,801	(1,286)	(2,403)	(3,098)	(3,747)	(975)	(789)
Total operating expenses	41,621	39,123	40,904	39,070	35,772	35,043	35,891	33,134	30,908	31,183
Net revenues available for debt service	$ 50,815	$ 54,100	$ 47,721	$ 45,660	$ 47,666	$ 48,531	$ 46,549	$ 46,054	$ 22,633	$ 25,507
Revenue bond coverage items:										
Total debt service	10,760	10,755	10,577	10,529	11,186	10,541	10,515	10,670	12,218	11,852
Renewal and replacement reserve requirement per recommendation of consulting engineer	12,553	13,952	11,187	11,163	10,280	11,128	8,673	8,743	10,077	9,073
Total debt service and renewal and replacement	$ 23,313	$ 24,707	$ 21,764	$ 21,692	$ 21,466	$ 21,669	$ 19,188	$ 19,413	$ 22,295	$ 20,925
Coverage percentages:										
Total debt service (150% required since 2002, 125% previously required) (1)	472.26%	503.02%	451.18%	433.66%	426.12%	460.40%	442.69%	431.62%	185.24%	215.21%
Total debt service and renewal and replacement per recommendation of consulting engineer (100% required)	217.97%	218.97%	219.27%	210.49%	222.05%	223.97%	242.59%	237.23%	101.52%	121.90%

(1) On March 11, 1993, $111,245,000 of Series 1989 Revenue Bonds were refunded with 1993 Series Revenue Bonds issued under a Trust Indenture dated February 15, 1993. On February 1, 2002, $36,036,000 of the Series 1993 Revenue bonds were refunded with the 2002 Series Revenue Bonds issued under a Trust Indenture dated February 1, 2002. On February 18, 2003, $61,280,000 of the Series 1993 Revenue bonds were refunded with the Series 2003 Variable Rate Demand Refunding Bonds issued under a Trust Indenture dated February 18, 2003. During fiscal year 2009, the Series 2003 Bonds were refunded by the Series 2008 Variable Rate Demand Refunding Bonds issued under a Supplemental Trust Indenture dated July 2, 2008. The revenue bond coverage requirements increased to 150% from 125% under the 2003 trust indenture and remain under the 2008 trust indenture at 150%. The above presentation for each of the ten years ended June 30, 2017, relates only to debt service requirements under the 1993, 2002, 2003, and 2008 Trust Indentures. Under the terms of these trust indentures, revenues available for debt service are comprised of collected toll revenues less operating expenses, exclusive of depreciation, other costs funded by bond proceeds or designated established reserves and accruals, and further reduced by capital expenditures funded by amounts other than bond proceeds.

Source: West Virginia Parkways Authority

WEST VIRGINIA PARKWAYS AUTHORITY

TRAFFIC STATISTICS

(In Thousands, except per transaction and per mile amounts)

	Year Ended June 30, 2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Number of transactions:										
Passenger cars	29,146	28,924	28,006	27,154	26,934	27,549	27,140	27,043	26,511	26,413
Commerical vehicles	8,250	8,057	7,890	7,621	7,462	7,515	7,328	7,329	7,098	8,018
Total transactions	37,396	36,981	35,896	34,775	34,396	35,064	34,468	34,372	33,609	34,431
ETC penetration rate - transactions	38.83%	37.24%	36.54%	35.70%	34.20%	32.69%	30.16%	29.00%	26.25%	26.30%
Number of miles:										
Passenger cars	680,261	676,651	651,789	629,908	623,890	639,854	634,053	633,550	616,633	601,891
Commercial vehicles	336,067	328,146	320,245	308,082	300,589	302,644	296,473	297,710	285,689	322,683
Total miles	1,016,328	1,004,797	972,034	937,990	924,479	942,498	930,526	931,260	902,322	924,574
Total revenues:										
Passenger cars	$ 48,847	$ 50,333	$ 46,309	$ 44,032	$ 43,429	$ 43,280	$ 42,066	$ 40,685	$ 26,584	$ 26,381
Commercial vehicles	43,892	43,246	42,388	40,875	40,090	40,627	39,894	39,186	26,757	30,182
Total toll revenues	$ 92,739	$ 93,579	$ 88,697	$ 84,907	$ 83,519	$ 83,907	$ 81,960	$ 79,871	$ 53,341	$ 56,563
ETC penetration rate - revenue	45.66%	43.63%	42.15%	40.80%	39.09%	36.70%	35.60%	33.37%	35.06%	35.20%
Toll revenue per transaction:										
Passenger cars	$ 1.68	$ 1.74	$ 1.65	$ 1.62	$ 1.61	$ 1.57	$ 1.55	$ 1.50	$ 1.00	$ 1.00
Commercial vehicles	5.32	5.37	5.37	5.36	5.37	5.41	5.44	5.35	3.77	3.76
Toll revenue per mile:										
Passenger cars	$ 0.072	$ 0.074	$ 0.071	$ 0.070	$ 0.070	$ 0.068	$ 0.066	$ 0.064	$ 0.043	$ 0.044
Commercial vehicles	0.131	0.132	0.132	0.133	0.133	0.134	0.134	0.132	0.094	0.094
Miles per transaction:										
Passenger cars	23	23	23	23	23	23	23	23	23	23
Commercial vehicles	41	41	41	40	40	40	40	41	40	40

Source: West Virginia Parkways Authority

WEST VIRGINIA PARKWAYS AUTHORITY

NUMBER OF EMPLOYEES

	Year Ended June 30, 2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Permanent employees										
Toll	154	156	160	156	160	160	162	168	161	163
Maintenance	159	147	145	146	141	140	141	143	147	144
Other	61	60	55	57	53	53	55	49	49	59
	374	363	360	359	354	353	358	360	357	366
Temporary	75	76	74	78	43	98	82	69	36	65
Leased employees										
State police	30	28	28	29	31	31	27	23	24	25
Tamarack	134	144	132	147	149	146	146	139	139	135

Source: West Virginia Parkways Authority

TRAFFIC ACCIDENT AND POLICING STATISTICS

	Year Ended June 30, 2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Number of fatalities	8	7	5	1	8	7	7	6	9	4
Fatality rate per 100 million miles traveled	0.8	0.7	0.5	0.1	0.9	0.8	0.8	0.6	1.0	0.4
Policing statistics										
Arrests	6,065	10,445	9,604	10,189	12,019	10,943	11,033	6,254	5,793	5,959
Warning tickets	17,870	20,794	25,089	24,677	24,377	20,069	16,340	17,415	23,968	24,932
Assists to motorists	2,322	3,222	2,948	2,914	3,633	2,816	2,382	2,083	2,605	2,581

Source: West Virginia Parkways Authority

WEST VIRGINIA PARKWAYS AUTHORITY

POPULATION DEMOGRAPHICS

	Year Ended June 30, 2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Population - WV (1)	1,852,994	1,852,994	1,852,994	1,852,994	1,852,994	1,852,994	1,852,994	1,808,344	1,808,344	1,808,344
Personal income - WV ($ in thousands) (2)	$ 68,548,511	$ 68,272,316	$ 67,804,094	$ 66,037,342	$ 63,968,460	$ 62,178,478	$ 60,484,487	$ 58,631,433	$ 57,410,905	$ 54,555,485
Per capital personal income - WV (2)	$ 37,386	$ 37,047	$ 36,644	$ 35,613	$ 34,477	$ 33,513	$ 32,641	$ 32,219	$ 31,634	$ 30,121
Unemployment Rate - WV (3)	4.60%	6.00%	7.40%	6.20%	7.30%	8.00%	9.10%	7.70%	4.20%	4.20%

(1) Data based on the US Decennial Census
(2) Bureau of Economic Analysis
(3) Work Force WV Labor Market Information

Principal Employers in the State of West Virginia

	Ranking 2016	2007
Local Government	1	1
State Government	2	2
Federal Government	3	3
West Virginia United Health System	4	5
Wal-Mart Associates, Inc.	5	4
Charleston Area Medical Center, Inc.	6	6
Kroger	7	7
Mylan Pharmaceuticals, Inc.	8	
Lowe's Home Centers, Inc.	9	10
St. Mary's Medical Center, Inc.	10	13
Cabell-Huntington Hospital, Inc.	11	
Wheeling Hospital, Inc.	12	
Res-Care, Inc.	13	
American Electric Power		8
Eldercare Resources Corporation		9
CSX/CSX Hotels, Inc.		11
Pilgrim's Pride Corporation of WV		12

Population - WV

White	1,739,961	93.90%
Black	63,002	3.40%
Hispanic & Other	5,559	0.30%
Native American	3,706	0.20%
Asian & Pacific Islanders	12,971	0.70%
Two or more Races	27,795	1.50%
Total Population	1,852,994	100.00%

Source: WorkForce WV

Most Current Data Available

Note: Due to confidentiality issues, the number of people employed is not available.

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Significant Dates

June 30, 2017

February 1947	West Virginia Turnpike Commission created by State Legislature
October 1949	West Virginia Turnpike Commission organized
April 1952	$96 million revenue bonds issued to construct Turnpike
August 1952	Groundbreaking
April 1954	$37 million revenue bonds issued
September 1954	36 miles of Turnpike opened (Princeton to Beckley)
November 1954	Final 52 miles of Turnpike opened (Beckley to Charleston)
August 1971	Tri-Party Agreement of 1971
May 1973	Commenced first contract for upgrade to interstate standards
December 1979	Interest paid up-to-date on 1952 and 1954 bonds for first time
October 1982	First bonds retired from 1952 and 1954 issues
September 1987	Final upgrade to interstate standards
July 1988	Final segment of I-64 completed
December 1988	Tri-Party Agreement of 1988
June 1989	West Virginia Parkways, Economic Development and Tourism Authority created to succeed the West Virginia Turnpike Commission by State Legislature
November 1989	Issued $143 million of Revenue Bonds
November 1989	Removed side toll charges
April 1990	Implemented commuter passes at North Beckley
March 1991	The GFOA awarded the Authority a Certificate of Achievement for Excellence in Financial Reporting for the Authority's first component unit financial report for the year ended June 30, 1990

Significant Dates (Continued)

June 30, 2017

March 1993	Issued $118 million of Series 1993 Revenue Refunding Bonds resulting in approximately $5.2 million in net present value savings
January 1994	Implemented Parkways Authority Commuter ("PAC") card program
December 1994	Issued $9 million of Series 1994 Raleigh County, West Virginia Commercial Development Revenue Bonds to partially finance construction of *TAMARACK-The Best of West Virginia* arts and crafts center
May 1996	Opened *TAMARACK-The Best of West Virginia* and the new Beckley Interchange (Exit 45)
December 1999	New Electronic Toll Collection System with E-ZPass interoperability through Inter Agency Group membership began operations at the Ghent toll facility. The remaining mainline toll facilities began operation in January 2000 and North Beckley began operations in March 2000
December 2001	Issued $5.7 million of Series 2001A Taxable Commercial Development Refunding Revenue Bonds and $5.9 million of Series 2001B Commercial Development Bonds to advance refund series 1994 and 1996 Bonds and to construct Educational, Cultural, and Banquet facilities at the Caperton Center
February 2002	Issued $44.2 million of Series 2002 Refunding Revenue Bonds to advance refund for savings $36 million of Series 1993 Bonds
February 2003	Issued $63.9 million of Series 2003 Variable Rate Demand Revenue Refunding Bonds to advance refund for savings $61.3 million of Series 1993 Bonds
June 2003	Opened Tamarack Conference Center
February 2004	Passage of House Bill #4033 raising bonding capacity to $200 million
November 2004	Celebrated 50th Anniversary of the WV Turnpike
January 1, 2006	Tolls Increased for first time since 1981
February 14, 2006	Court orders Preliminary Injection to roll tolls back to December 31, 2005 levels. Parkways Board passes resolution to roll tolls back

Significant Dates
(Continued)

June 30, 2017

March 11, 2006	Senate Bill #557 passes Legislature that restricts bonding authority, requires public notice and hearings for future toll or rate increases, requires discount program prior to any increase in rates
April 2007	Board adopted Resolution to refocus the core mission of the Parkways Authority to maintenance and upkeep of the Turnpike
September 2007	Board adopted Resolution concerning the toll tax deduction pursuant to Senate Bill #2001. WV Citizens who participate in the E-ZPass non-commercial commuter pass program are able to deduct from adjusted gross income up to $1,200 per year on their state income tax return for taxable years beginning on or after January 1, 2007 (minimum amount eligible for deduction is $25)
July 2008	Issued $59.1 million of Series 2008 Variable Rate Demand Revenue Refunding Bonds to advance refund for savings $59.1 million of Series 2003 Bonds
August 2009	Adopted new toll rate schedule, the first increase in 28 years. Cash toll rates increased 60%. Discounts were given to E-ZPass users
July 2010	Renamed and reorganized as the West Virginia Parkways Authority
December 2011	Completed upgrade of electronic toll collection system
April 2012	Board approval of the final Incident Management Plan including use of new detour system and barrier wall gates

Source: West Virginia Parkways Authority

Miscellaneous Data and Statistics

June 30, 2017

Length of West Virginia Turnpike	88 miles
Number of lane miles	426
Number of bridges	116
Steel surface of bridges	4 million square feet
Interchanges	18
Toll plazas	4
Service plazas	3
Welcome Center	1
Rest areas	2
Overlooks	2
Maintenance areas	7
Administration building	1
State Police administration buildings	2

Source: West Virginia Parkways Authority

WEST VIRGINIA PARKWAYS AUTHORITY

Toll Rates and Vehicle Classifications

June 30, 2017

Toll Class	Axles	Description	Cash Rate: Mainline Plazas	Cash Rate: Corridor "L" (U.S. Route 119)
1*	2	Passenger car	$ 2.00	$ 0.40
2*	3+	Passenger car with trailer	2.50	0.80
3	2/3	Motor home	2.50	0.80
4	3+	Motor home with trailer	3.25	1.20
5	2	2-Axle, dual tire trucks, RVs and buses	3.25	0.80
6	3	3-Axle trucks and buses	4.50	1.20
7	4	4-Axle trucks and semi-trailers	6.50	1.60
8	5	5-Axle trucks and semi-trailers	6.75	1.60
9	6+	6-Axle trucks and semi-trailers	9.50	2.40
10	-	Oversize trucks	12.00	7.20

* Vehicle must be less than 7'6" in height. Passenger cars include station wagons, pickups, vans, panel trucks, recreational vehicles, sport utility vehicles, motorcycles, and other two axle single-tired trucks.

DISCOUNT PLANS

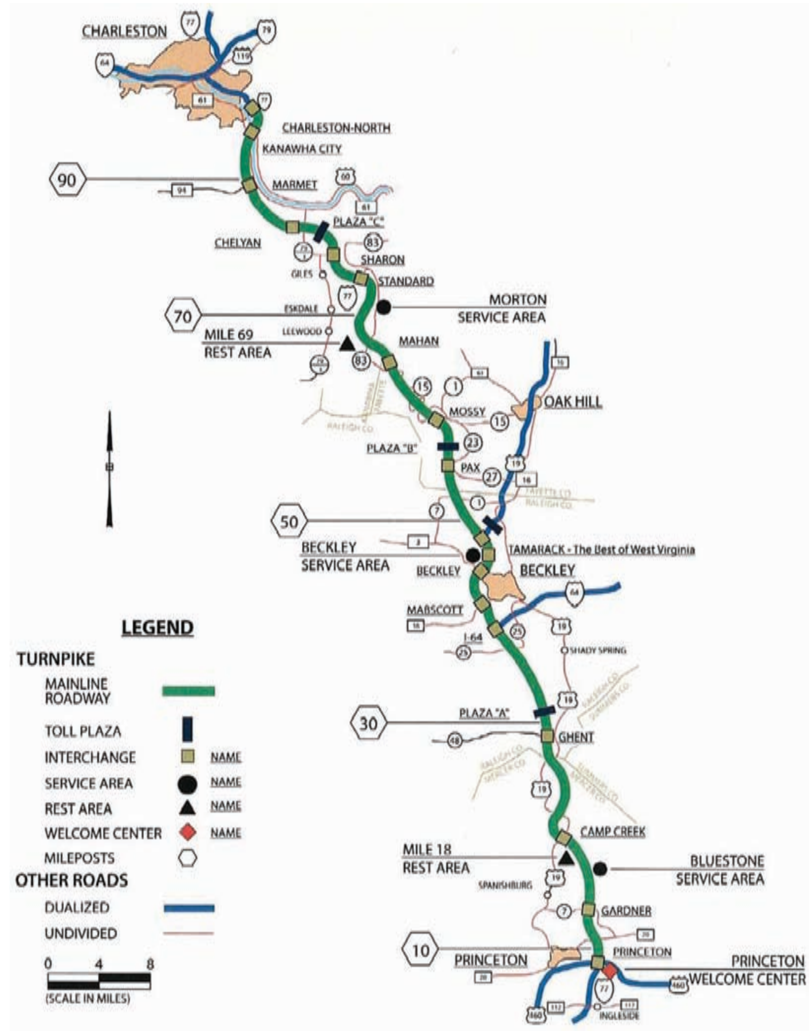
Personal Discount (Plan #1) - Formerly the Parkways Authority Commuter Card is available for noncommercial passenger cars and pickup trucks at $100 per year per mainline toll plaza, which includes the Corridor "L" Ramp Plaza, or $5 per year for the Corridor "L" Ramp Plaza only. A discount is allowed when buying an annual plan.

Plaza Location	Fee
Ghent (A)	$25/quarter or $95/year
Pax (B)	$25/quarter or $95/year
Chelyan (C)	$25/quarter or $95/year
Corridor "L" Ramp Plaza	$5/year

Personal Discount (Plan #2) and Commercial Discount (Plan #3) - User prepays via a credit card or ACH and is issued an E-ZPass transponder ($25 fee to purchase transponder for commercial plan). The plan provides a 35% discount from the cash rate for mainline plazas for Toll Class 1 through 4 and a 20% discount for Toll Class 5 through 10.

Commercial Discount (Plan #4) - For non-West Virginia issued E-ZPass and provides a 13% discount from the cash rate for mainline plazas for Toll Class 5 through 10.

Source: West Virginia Parkways Authority



APPENDIX C

FORM OF OPINION OF BOND COUNSEL

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August 14, 2018

West Virginia Parkways Authority
Charleston, West Virginia

Re: $166,370,000 West Virginia Parkways Authority
Senior Lien Turnpike Toll Revenue Bonds, Series 2018

Ladies and Gentlemen:

We have acted as Bond Counsel in connection with the issuance by the West Virginia Parkways Authority (the "Authority"), of its Senior Lien Turnpike Toll Road Revenue Bonds, Series 2018 (the "Series 2018 Bonds"), in the aggregate principal amount of $166,370,000. We have examined such law and such certified proceedings and other papers as we have deemed necessary to render this opinion. We have also examined an unauthenticated specimen Series 2018 Bond.

As to questions of fact material to our opinion, we have relied upon representations of the Authority contained in the documents described herein and other certifications of public officials furnished to us without undertaking to verify the same by independent investigation.

The Series 2018 Bonds are issued pursuant to the Constitution and the laws of the State of West Virginia (the "State"), including particularly Chapter 17, Article 16A of the Code of West Virginia, 1931, as amended, (the "Act"), and pursuant to a Direction of the Governor Approving Issuance of Bonds dated July 20, 2018, a Resolution adopted by the Authority on June 7, 2018 (the "Resolution"), a Master Trust Indenture dated as of August 1, 2018 (the "Master Trust Indenture"), and the First Supplemental Bond Indenture dated as of August 1, 2018 (the "First Supplemental Indenture" and, together with the Master Trust Indenture, the "Indenture"), between the Authority and United Bank, a Virginia banking corporation with a corporate trust office in Charleston, West Virginia, as trustee (the "Trustee"). The Authority has also entered into a Tax Compliance Certificate, dated as of August 14, 2018 (the "Tax Certificate").

We have not been engaged to review the accuracy, completeness or sufficiency of the Official Statement prepared in connection with the Series 2018 Bonds (the "Official Statement") or other offering material related to the Series 2018 Bonds (except to the extent, if any, stated in the Official Statement) and we express no opinion relating thereto.

Based upon the foregoing, we are of the opinion, under existing law, as follows:

1. The Authority is duly created and validly existing pursuant to the Act, with power under the laws of the State, including the Act, to adopt the Resolution, to execute and deliver the Indenture and the Tax Certificate, and to perform the agreements on its part contained therein and to issue the Series 2018 Bonds.

2. The Resolution has been duly adopted by the Authority, is in full force and effect, and is valid and binding upon the Authority and enforceable against the Authority in accordance with its terms.

3. The Indenture creates the valid pledge which it purports to create of the funds, accounts and property pledged under the Indenture, subject to the terms thereof.

4. The Series 2018 Bonds have been duly authorized, executed and delivered by the Authority and, assuming proper authentication, are valid and binding limited obligations of the Authority, payable solely from the sources provided therefor in the Indenture.

5. The 2018 Bonds are limited obligations of the Authority payable solely out of the Trust Estate (as defined in the Indenture) and other revenues, funds and accounts pledged or available for payment of debt service on the Series 2018 Bonds under the Indenture. The State is not obligated to pay the principal or redemption price of or interest on the Series 2018 Bonds. The Series 2018 Bonds shall not constitute or give rise to a general obligation or other indebtedness of the Authority or the State within the meaning of any constitutional limitation.

6. Under existing laws, regulations, rules and published rulings and judicial decisions of the United States of America, as presently written and applied, and assuming among other matters, the accuracy of certain representations and compliance with certain covenants, the interest on the Series 2018 Bonds is excludable from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the "Code"), and such interest will not be treated as a preference item for purposes of the alternative minimum tax imposed under the Code with respect to individuals and corporations. Under the Code, however, for the taxable years that began prior to January 1, 2018, such interest is included in the adjusted current earnings of a corporation for purposes of computing the alternative minimum tax.

In giving the foregoing opinion we have assumed and relied upon compliance with the covenants of the Authority and the accuracy, which we have not independently verified, of the representations and certifications of the Authority, all as contained in the Tax Certificate. The accuracy of certain of those representations and certifications, and compliance by the Authority with those covenants subsequent to the issuance of the Series 2018 Bonds, may be necessary for the interest on the Series 2018 Bonds to be and to remain excluded from gross income for federal income tax purposes. Failure to comply with certain of those covenants subsequent to the issuance of the Series 2018 Bonds could cause the interest thereon to be included in gross income for federal income tax purposes retroactively to the date of issuance of the Series 2018 Bonds.

7. Under the Act, the Series 2018 Bonds, their transfer and the income therefrom (including any profit made on the sale thereof) shall at all times be free from taxation within the State of West Virginia.

The validity and enforceability of the documents described above are subject to the provisions of applicable bankruptcy, insolvency, reorganization, moratorium or similar laws relating to the enforcement of creditors' rights generally or against public agencies such as the Authority or the State, whether now or hereafter in effect. Such obligations are also subject to the exercise of judicial discretion and to general equity principles, whether considered at law or in equity, which may, among other things, limit the specific enforcement under state law of certain remedies.

Our services as Bond Counsel to the Authority have been limited to rendering the foregoing opinion based upon our review of such proceedings and documents as we deem necessary to approve the validity of the Series 2018 Bonds and the tax-exempt status of the interest thereon.

This opinion is rendered as of the date hereof. We are under no obligation to, nor will we, update or revise this opinion due to events occurring after the date hereof which change the facts or law upon which this opinion is based.

Respectfully submitted,

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APPENDIX D

TRAFFIC AND REVENUE STUDY

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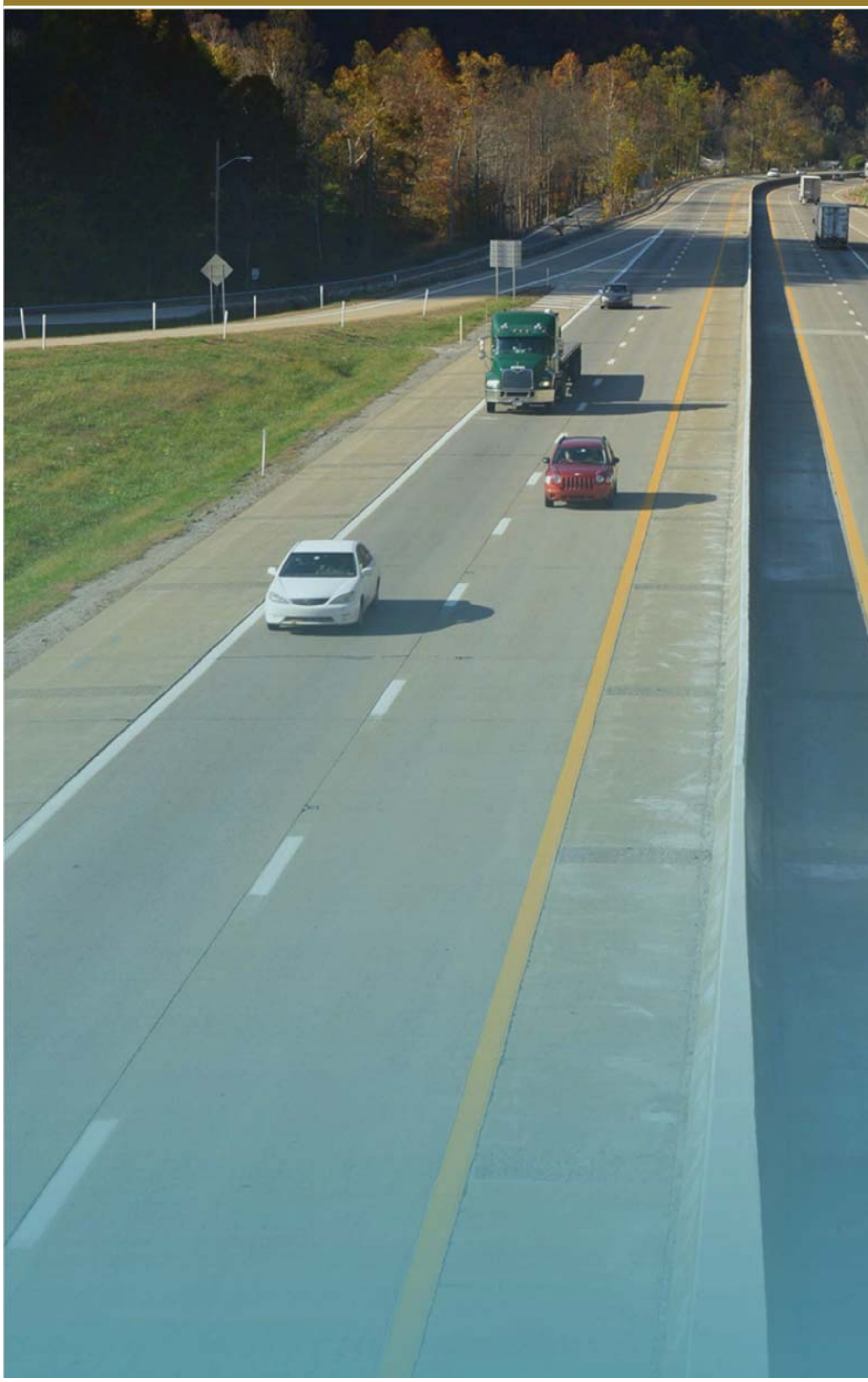
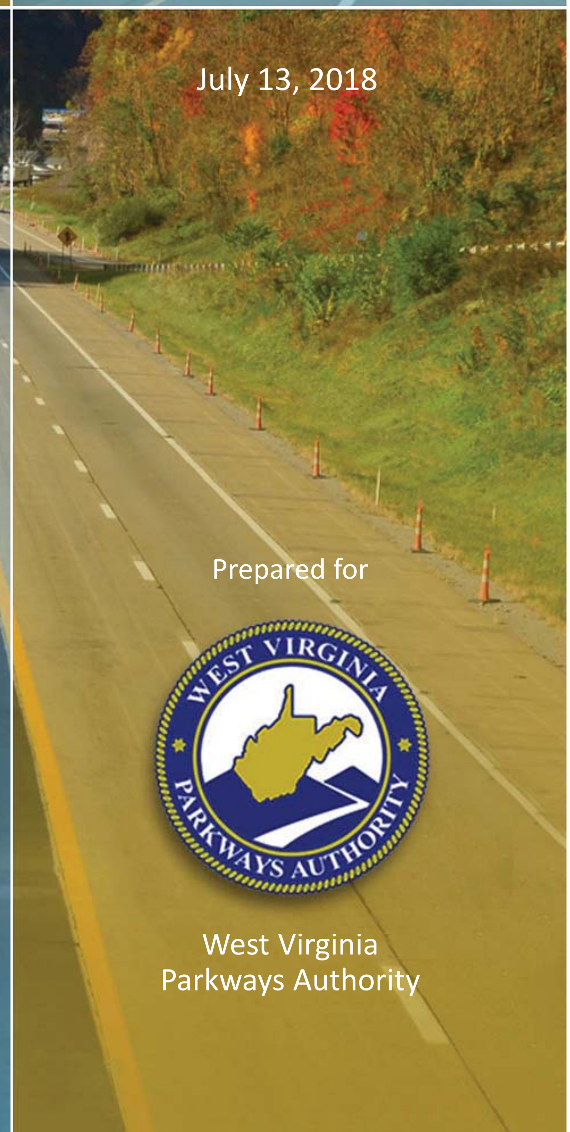
West Virginia Turnpike
2018 Revenue Bond Study





July 13, 2018

Prepared for

West Virginia
Parkways Authority

CDM Smith

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Executive Summary

The West Virginia Parkways Authority (WVPA) studied the effects of potential changes in toll policy on traffic and toll revenue on the West Virginia Turnpike (Turnpike). The changes considered included increases in toll rates as well as the introduction of a revised flat fee program offered to customers driving passenger cars, available through the West Virginia electronic toll collection program (WV E-ZPass). WVPA's goal throughout was to provide for continued funding for Turnpike capital projects and operations and maintenance costs, as well as to generate additional bonding capacity for the state's ***Roads to Prosperity*** program to improve access to the Turnpike and other major highways that ultimately connect to the Turnpike for business, individuals, and commercial transportation providers alike.

As used in this report, the terms "flat fee program" and/or "flat fee" refer to the single fee discount program authorized under Chapter 17, Article 16A of the West Virginia Code, 1931, as amended (the "Authority Act") for Class 1 passenger vehicle customers. Under this program, a Class 1 passenger car customer can obtain unlimited travel on the Turnpike for an annual fee plus a one-time issuance fee for the vehicle transponder. CDM Smith also analyzed a limited (one-time) early enrollment option that will allow Class 1 passenger car customers to participate in the flat fee program for calendar years 2019, 2020, and 2021 at a lower price if such customers opted, prior to December 31, 2018, to participate in the flat fee program and paid the lower price (and any issuance fee) covering all three years. As used in this report, this option is generally referred to as the "early enrollment option" and is assumed to be available starting September 1st, 2018. The full terms and conditions of any toll increases, the flat fee program, the early enrollment option, issuance fee, and any related temporary price adjustments are subject to applicable law and further action of WVPA.

As part of this study, CDM Smith collected and analyzed background data on the Turnpike, detailed traffic and revenue (T&R) data covering the last twenty-five years of operation, and customer frequency of use data. By examining prior Turnpike performance, historic local and regional economics, and economic forecasts, a Baseline forecast without toll policy changes was established. A stated preference (SP) survey was conducted to determine the likely reaction of existing customers to a variety of toll policy changes. T&R models were developed to be sensitive to potential toll policy changes and several alternatives were examined. WVPA staff and advisors identified one of these alternatives as best balancing the relevant considerations and variables. The WPVA board ultimately approved a very similar scenario with minor adjustments for toll rate increases, known as the "final approved scenario." Finally, CDM Smith conducted sensitivity tests on key assumptions.

ES.1 Study Objectives and Approach

The objective of this study is to understand current travel on the Turnpike, future baseline conditions, likely future conditions based on revised toll policies, and to generate an investment-grade T&R forecast suitable for supporting toll revenue bonds. The study approach is summarized below by task.

Task 1 – Data Collection and Analysis

- Review relevant studies and reports

- Examine and analyze detailed historical data including toll class and payment type shares by plaza, as well as E-ZPass based frequency data
- Evaluate historical traffic data for nearby roadways
- Establish and analyze frequency of use patterns from Location-Based Services (LBS) data

Task 2 – Stated Preference Survey

- Develop on-line survey instrument to cover range of possible tolling policies
- Distribute information on survey through handouts to customers at plazas, emails to WV and Non-WV E-ZPass customers, and general information posters
- Consolidate survey results and develop statistical payment choice models for Class 1

Task 3 – Econometric Model

- Assemble historical data and forecasts of socioeconomic conditions in the region and nearby areas that contribute traffic to the Turnpike
- Perform econometric modeling against Turnpike data compiled in Task 1
- Prepare a base case forecast of normal traffic growth for the Turnpike under a scenario with no toll policy change
- Prepare baseline, low, and high forecasts of future annual T&R

Task 4 – Traffic and Toll Revenue Estimates

- Assess the impact of transportation improvement projects that would likely affect the usage of the Turnpike in the future
- Analyze impacts of the prior toll rate increase to estimate the toll elasticity of the Turnpike
- Develop a spreadsheet model which applies market shares from Task 2, baseline forecasts from Task 3, and toll policies to develop T&R streams
- Analyze scenarios, as identified by WVPA, producing estimates of annual T&R
- Produce final Investment Grade T&R forecast based on WVPA "final approved scenario"

Task 5 – Documentation

- Develop a comprehensive report documenting data, analysis, and findings suitable for use in an Official Statement

Task 6 – Meetings

- Present draft results to WVPA staff, finance working group, board subcommittees, and WVPA board as needed
- Attend WVPA public meetings on proposed toll rate increases
- Attend and present at bond rating agency meetings and investors

ES.2 Background

Construction on the Turnpike began in 1952 and the first segment was opened in 1954. A series of upgrades in the 1970s and 80s resulted in the entire Turnpike being brought up to Interstate standards by 1987. The Turnpike is 88 miles in length with four travel lanes (two in each direction) between Charleston and Princeton. The Turnpike is designated as Interstate 77 along its entire length, but also carries the Interstate 64 designation from Charleston to just south of Beckley.

The Turnpike is an important north-south Interstate travel corridor linking eastern Ohio and western Pennsylvania in the north to eastern Kentucky, Virginia, North Carolina, and other states in the southeastern U.S. The Turnpike extends through mountainous terrain over much of its length; these mountains are a barrier to travel as shown on the regional location map (**Figure ES-1**). Posted speed limits are up to 70 miles per hour, reflecting the high design standards of the facility. The Turnpike serves as a “land bridge” across these mountains. The alternative routes are I-75 in the west and I-68 in the east. For many trips these are not very strong competitors to the Turnpike.

CDM Smith has provided T&R forecasting services for the Turnpike for several decades. The most recent major studies include:

- A comprehensive T&R forecast conducted in 2005
- A Traffic and Toll Revenue Study conducted in 2009 to determine the effect of permanent toll increases and E-ZPass based discounts on transactions and toll revenue

After the 2009 study, WVPA established a toll increase as well as discounts for all WV E-ZPass customers and Non-WV E-ZPass commercial vehicle customers. Those toll rates remain in place today.

ES.3 Existing Conditions

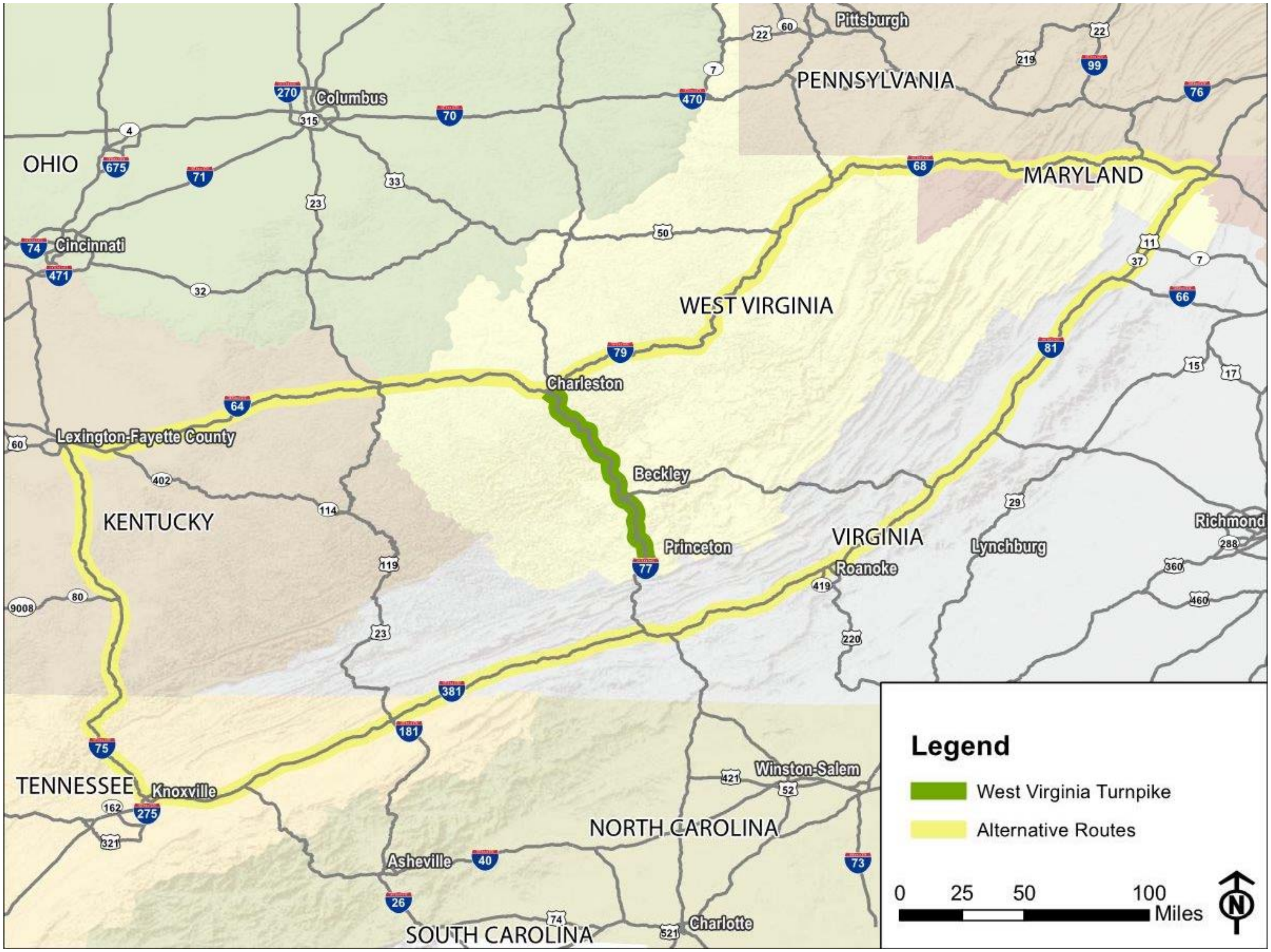
There are three mainline toll plazas along the Turnpike, at Ghent (Toll Plaza A) located at milepost 30, Pax (Toll Plaza B) at milepost 56, and Chelyan (Toll Plaza C) at milepost 83. There is also one ramp toll plaza located on Route 19, the North Beckley Exit at milepost 48. Tolls are collected in both directions at the mainline plazas and to and from the south at the North Beckley Plaza.

The Turnpike passes through the West Virginia counties of Kanawha, Fayette, Raleigh, and Mercer, serving cities including Charleston, Beckley, and Princeton. In addition to these cities, smaller communities with more localized trip origins and destinations are served. A large proportion of travel on the Turnpike consists of long-distance interstate trips.

A summary of the toll rate schedule currently in place on the Turnpike is presented in **Table ES-1**.

Currently, a Personal Discount Plan #1 provides unlimited usage of any number of plazas for an annual flat fee. The program is restricted to passenger cars and trucks without a trailer and having a gross vehicle weight of less than 8,000 pounds and height under seven feet six inches that are not being used for commercial or business purposes. Subscribers can choose any combination of the three mainline plazas for a flat fee of $25 per plaza per quarter of the year. A $5 discount per mainline toll plaza is offered for an annual plan. Customers can obtain unlimited usage of the entire length of the Turnpike for an annual cost of $285. Included with any of the mainline plazas is the North Beckley ramp, which costs $5 annually if purchased separately. Subscribers are issued an E-ZPass transponder which provides unlimited access to the selected plazas, while also processing regular pay-per-use transactions at other plazas.

Figure ES-1 West Virginia Regional Location Map



Source: CDM Smith

Table ES-1 Current West Virginia Parkways Toll Rates – Aug. 1, 2009 to Present

Toll Class	Vehicle Type	No. of Axles	Barriers A, B & C			North Beckley		
			Cash	WV E-ZPass	Non-WV E-ZPass	Cash	WV E-ZPass	Non-WV E-ZPass
1	Passenger cars/pickup trucks (under 7' 6")	2	$2.00	$1.30	$2.00	$0.40	$0.26	$0.40
2	All Class 1 vehicles with a trailer (under 7' 6")	3+	$2.50	$1.63	$2.50	$0.80	$0.52	$0.80
3	Motorhomes only (over 7' 6")	2-3	$2.50	$1.63	$2.50	$0.80	$0.52	$0.80
4	Class 3 vehicles with a trailer (over 7' 6")	3+	$3.25	$2.11	$3.25	$1.20	$0.78	$1.20
5	2-axle trucks	2	$3.25	$2.60	$2.83	$0.80	$0.64	$0.70
6	3-axle trucks	3	$4.50	$3.60	$3.92	$1.20	$0.96	$1.04
7	4-axle trucks	4	$6.50	$5.20	$5.66	$1.60	$1.28	$1.39
8	5-axle trucks	5	$6.75	$5.40	$5.87	$1.60	$1.28	$1.39
9	6 or more-axle trucks	6+	$9.50	$7.60	$8.27	$2.40	$1.92	$2.09
10	Oversize trucks		$12.00	$9.60	$10.44	$7.20	$5.76	$6.26

Source: WVPA

Note: Class 1 refers to 2-axle vehicles with a gross vehicle weight less than 8,000 lbs. and under 7'6" not being used for commercial purposes.

Passenger Cars (PC) refers to Classes 1-4. Commercial Vehicles (CV) refers to Classes 5-10.

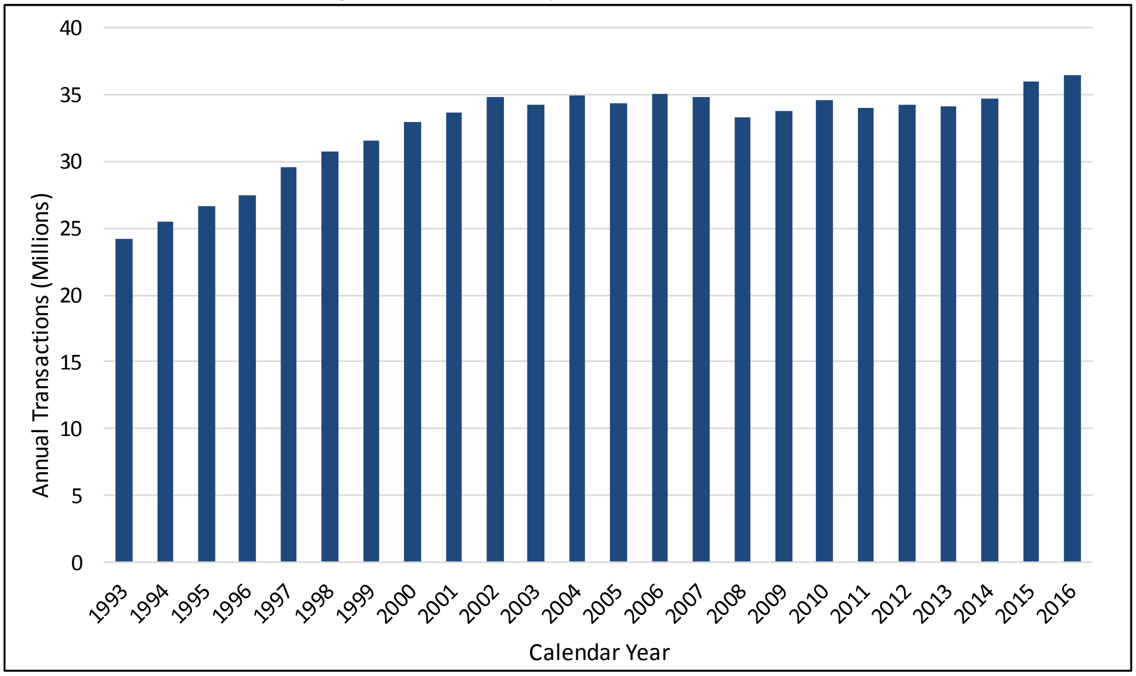
A Personal Discount Plan #2 currently provides a 35% discount from the cash toll rates for passenger cars and motor homes (Classes 1 through 4) as shown in Table ES-1.

A Commercial Discount Plan #3 currently provides a 20% discount from the cash toll rates for large vehicles (Classes 5 through 10) using a WV E-ZPass account as shown in Table ES-1.

Commercial Discount Plan #4 currently provides a 13% discount from the cash toll rates for large vehicles (Classes 5 through 10) using an account opened and managed by E-ZPass issued by an agency other than the Turnpike as shown in Table ES-1.

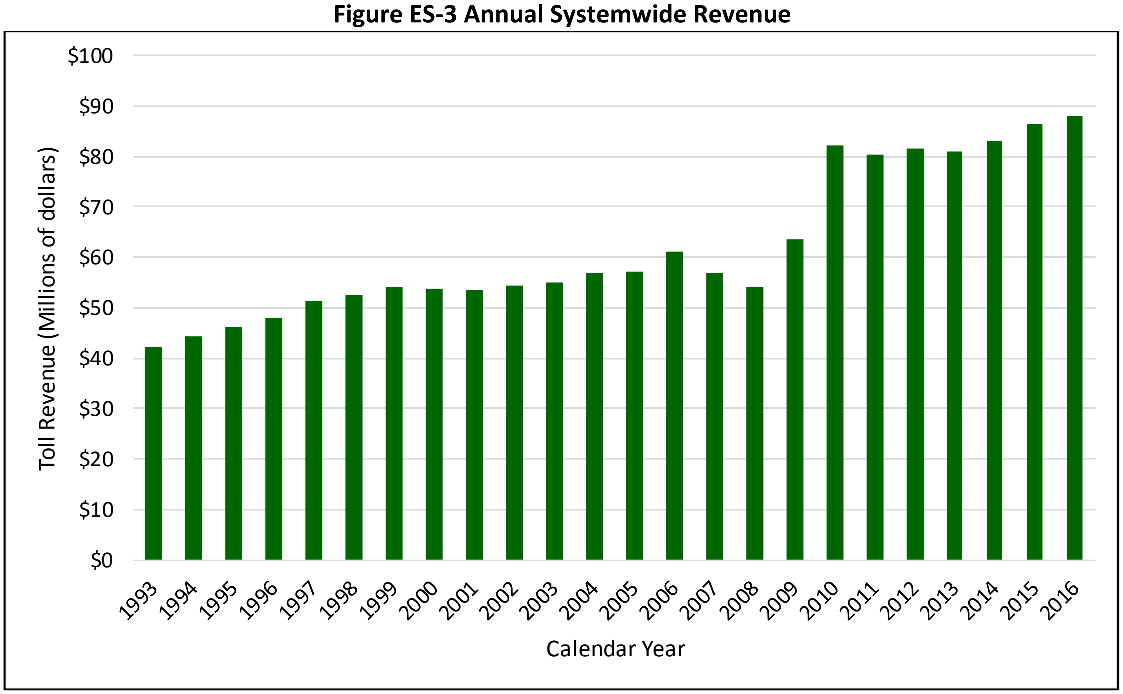
Figures ES-2 and **ES-3** provide historic systemwide information on Turnpike usage. Travel on the Turnpike has been steady for several decades. The roadway serves as an important conduit for local residents as well as a vital connection between the Midwest and the southeastern United States. Economic activity levels appear to have had only a minor effect on traffic in the 2006-2008 timeframe. The large toll rate increase, approximately 60% in August 2009, did not have a significant impact on transactions. In fact, annual transactions grew in the two-year period from 2008 to 2010. Annual toll revenue increased by approximately 52% from 2008 to 2010.

Figure ES-2 Annual Systemwide Transactions



Source: WVPA

Figure ES-3 Annual Systemwide Revenue



Source: WVPA

Passenger car traffic volumes on the Turnpike peak during the summer season whereas commercial traffic volumes are steady most of the year. The three mainline plazas have roughly equal numbers of transactions per year (approximately 10 million in 2016) whereas North Beckley has about half that amount (approximately 5.5 million in 2016). Many of the trips on the Turnpike travel the full length, based on available E-ZPass data.

Two-axle passenger car customers (Class 1) dominate transactions on the Turnpike at 76% while 5-axle trucks (Class 8) make up another 18% of transactions. Passenger car customers (Classes 1 to 4) make up about 51% of total revenue and commercial vehicle customers (Classes 5 to 10) make up about 49% of total revenue. As a share of transactions, payment by passenger car customers is about 72% cash, 18% WV E-ZPass, and 10% Non-WV E-ZPass. Payment by commercial vehicles is about 25% cash, 16% WV E-ZPass, and 59% Non-WV E-ZPass.

CDM Smith developed a frequency of use profile of existing E-ZPass customers from detailed transactions records. Frequency of use is very low, particularly for passenger car customers. About half of the passenger car customers using WV E-ZPass have 10 or fewer transactions in a year. Roughly 95% of all passenger car customers using Non-WV E-ZPass have 10 or fewer transactions a year.

The majority of WV E-ZPass commercial vehicle customers also travel on the Turnpike infrequently. Among WV E-ZPass commercial vehicle customers, the proportion of travelers using the Turnpike less than 50 times a year in 2016 was found to be approximately 82%. The level of frequency is even lower among Non-WV E-ZPass commercial vehicle customers, with the proportion of travelers using the Turnpike less than 10 times a year reaching about 91%.

CDM Smith obtained frequency of use information from StreetLight Data, Inc. This data represented a sample of the customers passing through each of the four tolling plazas during the year-long period July 2016 through June 2017 and established the number of times each device was observed at each location over the year, presented as the number of occurrences per year. Unfortunately, it was not possible to separate customer payment method, vehicle classification, or state of residence. The data included personal devices using Location Based Services (LBS) and did not include corporate fleet information. It was found that most customers were very infrequent users, with nearly 80% making only one one-way trip per year. About 96% of customers make less than 4 one-way trips per year. The frequency distribution was found to be very similar at all toll plazas.

Knowing the frequency of use of all customers both from the StreetLight data and E-ZPass data (and the size of each market), it was possible to deduce the frequency of use for cash customers. All data received was generic so individual privacy was protected.

Governor Jim Justice's ***Roads to Prosperity*** program contains hundreds of transportation improvement projects worth over $2.6 billion. This program will have a significant beneficial impact on the state economy. The program includes a widening project on the Turnpike. None of the projects included in the program will provide major improvements to roadways that compete with the Turnpike. As a result, the ***Roads to Prosperity*** program is expected to have relatively-small, positive impacts on the competitive advantages of the Turnpike.

ES.4 Stated Preference Survey

The primary objective of the SP survey was to understand how the choice of payment method and travel behavior will likely change if the revised annual flat fee WV E-ZPass is offered. The SP survey presented hypothetical scenarios within the context of the respondent's actual travel, and asked respondents to choose from a set of possible options: joining the flat fee program, paying the higher toll at each plaza, or stop making trips on the Turnpike. Resource Systems Group (RSG) with help from CDM Smith and input from WVPA, designed the survey, administered it to current customers, and evaluated the results.

The survey included questions on qualification of the respondent to take the survey (such as making sure they are Class 1 customers); general travel questions such as segments of the turnpike used, frequency, and payment type; questions about trip characteristics for a specific one-way "reference" trip; questions for the SP experiments with varying toll rates, flat fee rates, and other parameters; debriefing questions which help explain any unusual responses; and demographic questions to expand the survey to the general population.

A total of 6,438 valid surveys were completed representing nearly 43,000 SP experiments. For the purpose of asking the survey questions, frequent users were defined as those who made six or more trips per month on the Turnpike, while infrequent users were defined as individuals who made five or fewer monthly trips on the Turnpike. (As noted later, when the survey results were analyzed, "frequent" and "infrequent" were redefined due to the resulting behavioral differences at very low frequency of use.) Overall, frequent users were much more likely to travel for work-related purposes, while most infrequent users drove on the Turnpike for social or recreational trip purposes. WV E-ZPass customers had the highest average and median number of trips, while Non-WV E-ZPass customers tended to make the least. The median number of annual trips for all respondents was 8 trips, and the average was 51 trips.

In the SP experiments, as the per plaza toll rates increased, respondents increasingly chose to either stop making trips or to join the flat fee program. As the annual flat fee increased, respondents increasingly chose to pay toll per plaza or to a lesser extent, stop making trips on the Turnpike.

Statistical analysis and discrete choice model estimation were conducted using the SP survey data. The statistical estimation and specification testing were completed using a conventional maximum likelihood procedure that estimated coefficients for a set of multinomial logit (MNL) models. Payment choice models were constructed for each of the original payment methods (cash, WV E-ZPass. and Non-WV E-ZPass). Frequency of use appeared as an important determinant of customer choice, leading to separate formulations for infrequent and frequent users with the WV and Non-WV E-ZPass. The model estimation showed distinction between those who make three or more trips per year and those who make two or less and the definition of frequent and infrequent were refined. Frequency of use is also an independent variable in the models for frequent users. These market share models support revenue projections under the proposed new payment policies. Separate regression models were also estimated to forecast trip suppression and induction rates. The suppression/induction models were fitted with a total of 3,056 observations to support estimates of overall trip reductions based on proposed per plaza toll increases. Overall, the statistical fit and explanatory power of the discrete choice and suppression models was good.

The results from the models were incorporated into an Excel-based market share simulation tool. The equations behind the market share simulator were incorporated into tolling models used to estimate reaction to tolling policy.

ES.5 Economic Growth Analysis

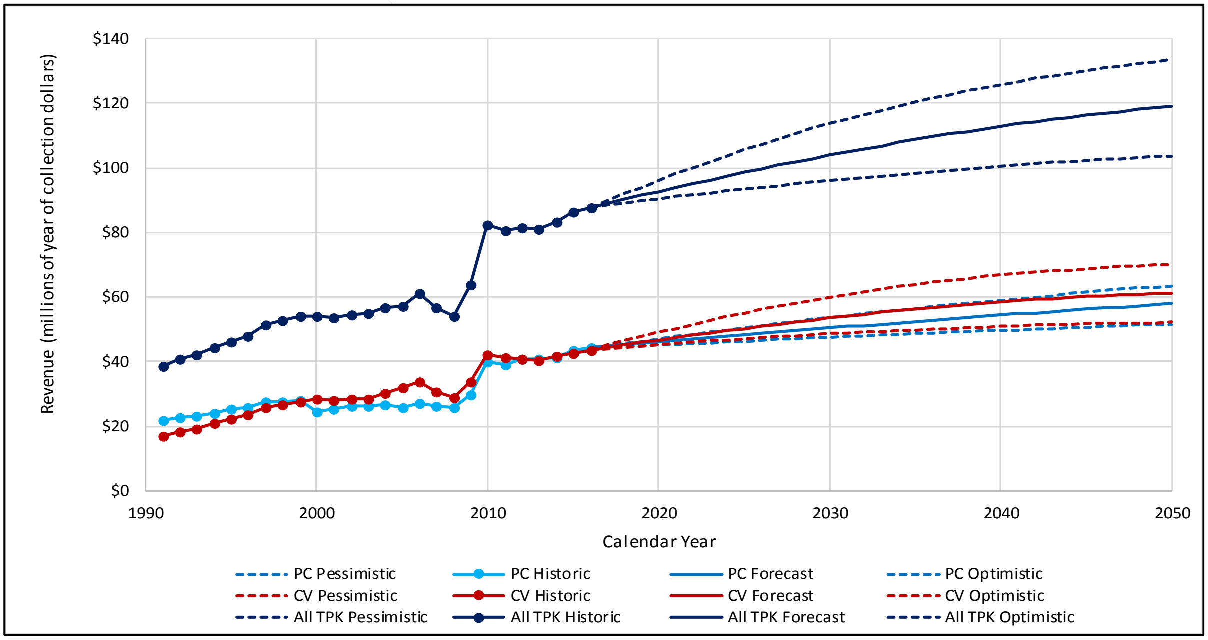
CDM Smith developed a series of econometric models to gauge trends in long-term travel demand on the Turnpike, with no change in toll policies. These models review trends in independent variables such as population and employment against historic transaction trends. Multiple regression equations were tested and evaluated for each plaza-vehicle category to account for the numerous possible combinations of relevant geographies (county and/or state clusters) for each socioeconomic variable, and inclusion of effective toll rates. A final equation for each combination of vehicle class (PC and CV) at each plaza was selected based on multiple criteria, including overall equation robustness (adjusted R^2), independent variable robustness (t-statistics and p-values), logic and reasonableness of equation coefficients, logic and reasonableness of geographic catchment area, and the credibility of the independent variable(s) and source(s).

Geographic combinations of counties are the most-logical and statistically-valid catchment areas for PC transactions for all four plazas. CV transactions at the mainline plazas are related to the socioeconomics of a cluster of states, which include West Virginia, Virginia, Ohio, and Kentucky. However, the geographic catchment for commercial vehicles for North Beckley (NB) is more-closely related to a county cluster. PC transactions along the mainline plazas are related to real GRP, whereas for North Beckley (NB) PC and all CV transactions for all plazas, the socioeconomic variable is employment. Average effective annual toll rates are statistically significant for North Beckley (NB) PC transactions and Pax (B) and Chelyan (C) CV transactions. Adjusted R^2 (overall statistical robustness) is between 87.8% and 96.0%, indicating very good relationships throughout the eight equations (PC and CV for each of the four plazas).

With the final regression equations, forecasts of the regional socioeconomic variables were applied to the regression coefficients to estimate future long-term travel demand. Socioeconomic forecasts compiled from Woods & Poole Economics, Inc. (W&P) were compared with historical patterns; and were observed as generally more aggressive than the long-term historical patterns (1990 to 2016) and certainly more aggressive than more-recent timeframes (2000 to 2016). As such, the socioeconomic forecasts from W&P were designated as the optimistic scenario. A linear extrapolation of the long-term historical trends of the socioeconomics variables from 1990 to 2016 was designated the baseline scenario. A linear extrapolation of the socioeconomics from 2000 to 2016 was designated the pessimistic scenario. Once established, dampening or deceleration of the long-term growth rates was added to the forecasts to account for unknown factors including economic changes, travel pattern changes, and travel characteristics. Annual transaction streams were developed and existing revenue per transaction was applied to generate annual revenue streams. Existing class and payment shares were assumed to remain stable in the baseline forecast.

Generally, the Turnpike exhibited 3.6% average annual toll transaction growth in the 1990s, followed by a notable deceleration around the millennium, resulting in a 0.8% average growth between 2000 and 2016. Over the entire historical timeframe available from 1990 to 2016, the average annual toll transaction growth amounted to 1.9% annually. Over the future horizon through 2050, Turnpike toll transactions are projected to increase by 0.8% per year on average, annually. In the pessimistic alternative, the average future growth is 0.4% per year, and for the optimistic, 1.1% per year. Commercial vehicles are projected to grow faster than passenger vehicles for all plazas, at 1.0% versus the 0.8% average annual toll transaction growth for passenger cars. **Figure ES-4** provides a graphical view of historic and forecast baseline toll revenues along with pessimistic and optimistic ranges if current toll policies were to be extended.

Figure ES-4 Baseline Toll Revenue Forecast



Note: PC = Classes 1-4, CV = Classes 5-10
Source: CDM Smith Analysis

ES.6 Toll Modeling Approach

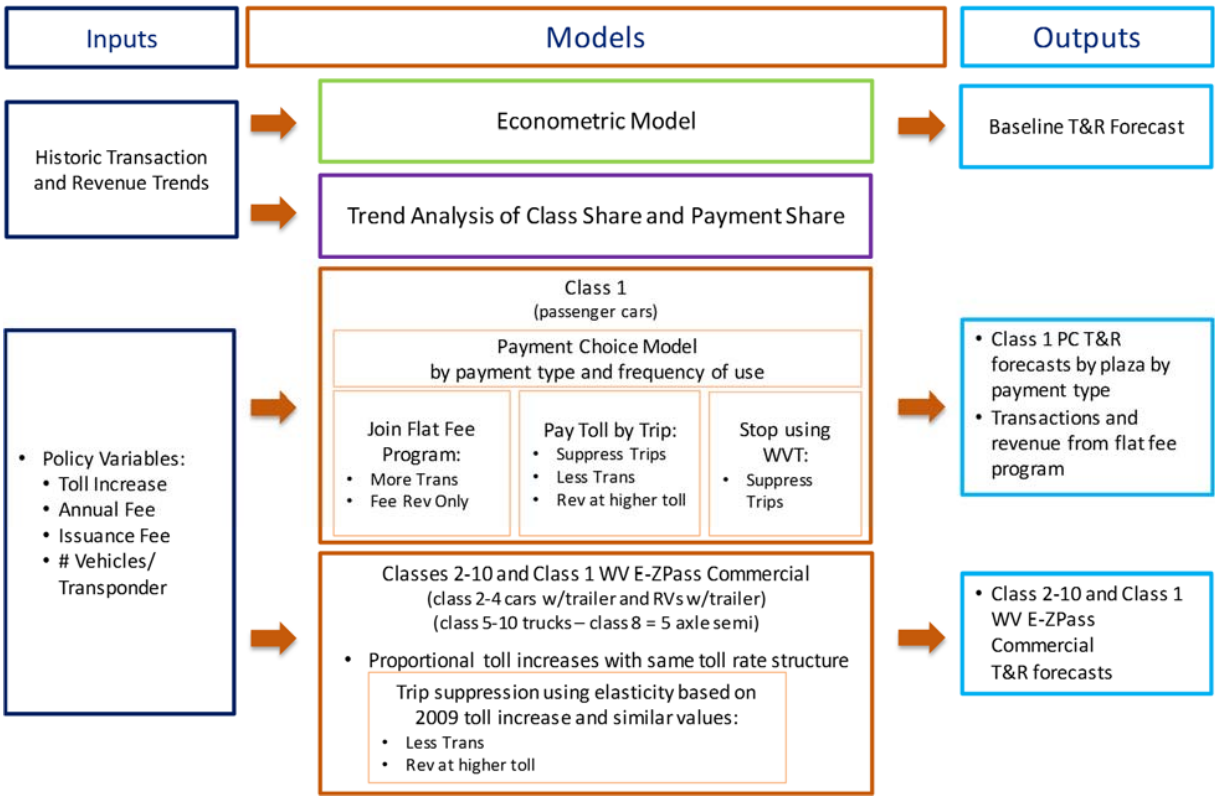
CDM Smith applied the existing conditions analysis, SP survey results, and economic baseline growth as well as decades of experience and industry accepted techniques to develop a spreadsheet-based toll modeling tool. The overall approach is shown in **Figure ES-5.**

As noted earlier, the baseline T&R forecast was developed from econometric analysis of historic transactions trends for PCs and CVs against socioeconomic variables and forecasts of socioeconomic variables. To test proposed toll policies, modeling was divided into two main modules, one for Class 1 and the other for Classes 2-10. Model years included 2018, 2019, 2020, 2021, 2022, 2030, 2040, and 2050. Interim years were derived by interpolation at each class and payment type level.

The Class 1 module uses the baseline forecast and trend analysis of class and payment shares as primary inputs. It also uses the frequency of use data derived from E-ZPass transactions and StreetLight data described earlier. The Class 1 module handles customers by annual frequency “bins” to better explain infrequent and frequent traveler behavior. The existing proportion of customers in current frequency bins by payment type is factored up such that when multiplied by the frequency in each bin, they meet future baseline transaction forecasts. Then the Payment Choice Model derived from the SP survey is applied by each original payment type plaza (cash, WV E-ZPass, and Non-WV E-ZPass) and frequency to determine future payment shares including joining the flat fee program, paying per plaza (cash, WV E-ZPass, and Non-WV E-ZPass), or stop using the Turnpike all together. The results are then summarized for further use.

For Classes 2-10, a more traditional approach is applied since traditional toll rate increases are contemplated for these customers and flat fee tolling is not being studied. The traditional approach looks at the baseline forecast, applies class and payment share trend forecasts, and then applies tolling elasticity factors to determine reductions in transactions as toll rates are increased. The elasticity applied was derived from analysis of the 2009 toll increase as well as through CDM Smith's extensive experience in toll road forecasting and results analysis. The results are then summarized for further use.

Figure ES-5 Toll Modeling Approach



ES.7 Traffic and Revenue Forecast

WVPA's goal has been to support the improvements to the Turnpike and to access roads connecting to the Turnpike, as identified in Governor Justice's ***Roads to Prosperity*** program. The intent of WVPA staff has been to maximize the amount of toll revenue bonds that can be sold, while maintaining the benefits of the flat fee program and retaining reasonable toll rates, as well as providing funds to keep the Turnpike in a good state of repair and operating efficiently.

Of the many potential tolling policies considered, WVPA staff and advisors identified a scenario for further evaluation that was later approved by the WVPA Board with minor revisions. The final approved scenario includes a revised flat fee program with an early enrollment option, a large toll rate increase in 2019, and modest long-term escalation of toll rates and flat fee program costs.

With the introduction of the final approved scenario, assumed to start on September 1, 2018, Class 1 passenger car customers will have the opportunity to choose an early enrollment option which covers tolls for a three-year period at a discounted cost of $24 (plus a $13 issuance fee if not already part of the WV E-ZPass program). To participate in this early enrollment option, customers will need to enroll in the flat fee program and pay the $24 early enrollment fee by December 31, 2018. Customers in this program will enjoy unlimited, toll-free use of the Turnpike from time of joining through December 31, 2021. For all other customers:

- The CY 2018 toll rates will remain the same as CY 2017
- In CY 2019, the annual cost of the Class 1 flat fee program will be $25 and cover CY 2019 only; and toll rates for all other customers paying tolls (Classes 1-10) will double
- The toll policies in CY 2020 and 2021 are the same as CY 2019
- Starting in CY 2022 and beyond, all toll rates will increase nominally at 1.6% annually subject to rounding and the $25 flat fee program will increase by 5% every third year (including CY 2022).

Table ES-2 provides a summary of the toll rates beginning January 1, 2019.

The T&R forecast for the final approved scenario is presented in **Table ES-3**, **Figures ES-6** and **ES-7**. Annual transactions increase from about 37 million in 2017 to about 38 million in 2018 due to the unlimited transactions allowed under the flat fee program and the early enrollment option which draws more customers. However, the increase is transactions is modest as the new program is available only starting September 1st, 2018. Transactions drop to about 34 million in 2019 due to the toll rate increase. There is a noticeable decrease in transactions in 2022 due to the ending of the early enrollment option coverage. Transactions increase slowly to about 35 million by 2030, but then begin to decrease as toll rates escalate and overall growth tapers off, shrinking to about 32 million by 2050.

Table ES-2 West Virginia Parkways Toll Rate Schedule - Effective January 1, 2019

Toll Class	Vehicle Type	Number of axles	Barriers A, B & C			North Beckley		
			Cash	WV E-ZPass	Non-WV E-ZPass	Cash	WV E-ZPass	Non-WV E-ZPass
1	Single Fee Discount Program including Limited (One-Time) Early Enrollment Option	2	$ 0.00 with valid Single Fee Discount Plan or Early Enrollment Option			$ 0.00 with valid Single Fee Discount Plan or Early Enrollment Option		
1	Passenger cars/pickup trucks (under 7' 6")	2	$4.00	$2.60	$4.00	$0.75	$0.52	$0.80
2	All Class 1 vehicles with a trailer (under 7' 6")	3+	$5.00	$3.25	$5.00	$1.50	$1.04	$1.60
3	Motorhomes only (over 7' 6")	2-3	$5.00	$3.25	$5.00	$1.50	$1.04	$1.60
4	Class 3 vehicles with a trailer (over 7' 6")	3+	$6.50	$4.22	$6.50	$2.50	$1.56	$2.40
5	2-axle trucks	2	$6.50	$5.20	$5.66	$1.50	$1.28	$1.40
6	3-axle trucks	3	$9.00	$7.20	$7.84	$2.50	$1.92	$2.08
7	4-axle trucks	4	$13.00	$10.40	$11.32	$3.25	$2.56	$2.78
8	5-axle trucks	5	$13.50	$10.80	$11.74	$3.25	$2.56	$2.78
9	6 or more-axle trucks	6+	$19.00	$15.20	$16.54	$4.75	$3.84	$4.18
10	Oversize trucks		$24.00	$19.20	$20.88	$14.50	$11.52	$12.52

Automatic Adjustment: (i) Beginning in 2022, the toll rate schedule set forth above shall be subject to an automatic increase of 1.60% per year; provided, that the amount of any resulting increased rate shall be rounded to the nearest $0.25 for the Cash Rate at each Mainline Toll Plaza and the North Beckley Plaza, (ii) the corresponding WV E-ZPass Rates and Non-WV E-ZPass Rates thus shall also be subject to the automatic increase of 1.60% per year, (iii) the annual automatic increases described in this paragraph shall be calculated from the pre-rounded Cash Rates, not the rounded Cash Rates, and (iv) beginning on January 1, 2022, in accordance with the Act, the $25 fee charged for the Single Fee Discount Program shall be automatically increased by 5.00% and then shall be automatically increased by 5.00% every three years thereafter (that is, on the January 1st that is the third anniversary of the previous automatic 5.00% increase) without further action of the Authority. Single Fee Discount Program: Beginning on January 1, 2019, a customer driving a Toll Class 1 passenger motor vehicle (i.e., two axle passenger vehicles weighing less than 8,000 pounds and under 7'6" for personal - non-commercial use) may obtain (upon submission of a complete application, payment of applicable fees and receipt of a special transponder from the West Virginia Parkways Authority) unlimited travel on the West Virginia Turnpike for one year (from the month of purchase) for that vehicle for an annual fee of $25 per year per vehicle (subject to the subsequent 5.00% increases as provided above), plus applicable costs of issuing a special transponder for that vehicle. Non-Commercial Vehicles in Toll Class II, III and IV – Discount Plan for West Virginia E-ZPass Customers: Customers with vehicles in Class 2-4 (i.e. Vehicles greater than 7'6" in height or Class 1 vehicles towing trailers) having a WV E-ZPass will continue to receive a 35% discount off of the pre-rounded Cash Rates at each toll plaza on the West Virginia Turnpike; provided, however, that the applicable Cash Rate at each Mainline Toll Plaza and the North Beckley Toll Plaza shall be rounded to the nearest $0.25. Commercial Discount Plan #A: There is a $25.00 charge for the purchase of each E-ZPass transponder (non-refundable). Rates are based on the West Virginia Toll Rates table above under the column "WV E-ZPass". Commercial Discount Plan #B: Accounts are opened and managed by other E-ZPass agencies, so there is no paperwork, account maintenance, or charge for transponders. Rates are based on the West Virginia Toll Rates table above under the column "Non-WV E-ZPass". *Effective Date: This Tolling Policy and Toll Rate Schedule shall become effective as of January 1, 2019; provided, that the Limited (One Time) Early Enrollment Option shall become available and effective as of September 1, 2018.

Annual revenue increases from about $90 million in 2017 to $105 million in 2018 with a large increase in the Class 1 Flat Fee revenue from the early enrollment option and a large decrease in Class 1 tolled revenue. During the period 2019-2021, total revenue increases due to the initial toll rate increase but is moderated by the early enrollment option. In 2022, a noticeable jump up in revenue accompanies the end of the early enrollment coverage and revenue increases over time due to escalating toll rates. The revenue generated by the flat fee program represents about 19% of all revenue in 2018, about 1% to 2% in the years 2019-2021 (those who missed the early enrollment period but choose the flat fee program just for each year), and about 10% starting in 2022 growing to 16% by 2050. Among total tolled revenue, about one-third comes from passenger cars while two-thirds comes from commercial vehicles. From 2023 to 2030, total revenue is expected to grow about 1.7% annually, slowing to about 1.1% growth annually through 2040, and slowing further to about 0.3% growth through 2050. Every third year, the 5% increase in the annual flat fee generates a slightly higher annual growth in revenue.

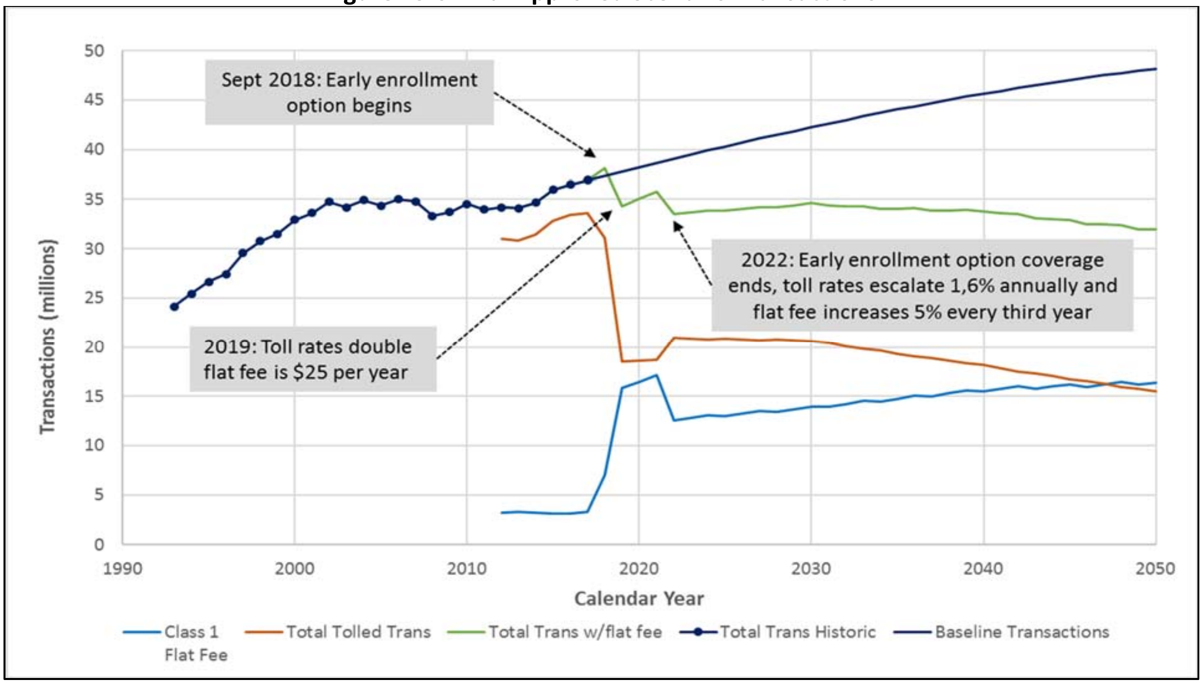
Note that the flat fee program was assumed to start on September 1, 2018.

Table ES-3 Annual Toll Transactions and Revenue Forecast

Calendar Year	Toll Transactions (millions)					Revenue (millions year of collection dollars)				
	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Trans w/flat fee	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Revenue w/flat fee
2012 (1)	3.16	22.86	0.78	7.40	**34.20**	$ 1.18	$ 39.02	$ 1.83	$ 40.67	**$ 82.70**
2013 (1)	3.30	22.63	0.79	7.40	**34.12**	$ 1.17	$ 38.79	$ 1.83	$ 40.41	**$ 82.20**
2014 (1)	3.23	22.99	0.80	7.64	**34.66**	$ 1.06	$ 39.51	$ 1.87	$ 41.79	**$ 84.23**
2015 (1)	3.13	24.11	0.87	7.84	**35.95**	$ 1.23	$ 41.53	$ 2.03	$ 42.81	**$ 87.60**
2016 (1)	3.09	24.50	0.92	7.98	**36.49**	$ 1.15	$ 42.24	$ 2.14	$ 43.46	**$ 88.99**
2017 (2)	3.31	24.55	0.93	8.11	**36.90**	$ 1.13	$ 42.37	$ 2.18	$ 44.33	**$ 90.01**
2018 (3)	7.01	21.89	0.95	8.26	**38.11**	$ 19.90	$ 37.27	$ 2.21	$ 45.33	**$ 104.71**
2019 (4)	15.82	10.99	0.77	6.75	**34.33**	$ 1.42	$ 34.75	$ 3.60	$ 74.06	**$ 113.83**
2020	16.46	10.95	0.78	6.86	**35.05**	$ 2.13	$ 34.62	$ 3.63	$ 75.18	**$ 115.56**
2021	17.11	10.92	0.78	6.97	**35.78**	$ 2.84	$ 34.51	$ 3.67	$ 76.30	**$ 117.32**
2022 (5)	12.55	13.18	0.79	7.02	**33.54**	$ 14.42	$ 42.33	$ 3.71	$ 78.04	**$ 138.50**
2023	12.79	13.04	0.79	7.05	**33.67**	$ 14.73	$ 42.45	$ 3.79	$ 79.54	**$ 140.51**
2024	13.03	12.92	0.80	7.08	**33.83**	$ 15.05	$ 42.61	$ 3.86	$ 81.09	**$ 142.61**
2025	12.99	12.94	0.80	7.11	**33.84**	$ 15.57	$ 43.24	$ 3.94	$ 82.67	**$ 145.42**
2026	13.24	12.82	0.80	7.14	**34.00**	$ 15.91	$ 43.42	$ 4.03	$ 84.31	**$ 147.67**
2027	13.49	12.71	0.80	7.17	**34.17**	$ 16.25	$ 43.63	$ 4.11	$ 85.98	**$ 149.97**
2028	13.44	12.75	0.81	7.20	**34.20**	$ 16.80	$ 44.37	$ 4.20	$ 87.71	**$ 153.08**
2029	13.70	12.65	0.81	7.23	**34.39**	$ 17.16	$ 44.61	$ 4.28	$ 89.48	**$ 155.53**
2030	13.96	12.56	0.81	7.27	**34.60**	$ 17.53	$ 44.89	$ 4.37	$ 91.30	**$ 158.09**
2031	13.92	12.38	0.81	7.25	**34.36**	$ 18.24	$ 44.86	$ 4.43	$ 92.54	**$ 160.07**
2032	14.21	12.07	0.81	7.24	**34.33**	$ 18.79	$ 44.31	$ 4.49	$ 93.80	**$ 161.39**
2033	14.51	11.77	0.80	7.22	**34.30**	$ 19.36	$ 43.78	$ 4.54	$ 95.08	**$ 162.76**
2034	14.44	11.62	0.80	7.20	**34.06**	$ 20.11	$ 43.81	$ 4.60	$ 96.39	**$ 164.91**
2035	14.75	11.34	0.80	7.19	**34.08**	$ 20.72	$ 43.30	$ 4.66	$ 97.71	**$ 166.39**
2036	15.06	11.06	0.80	7.17	**34.09**	$ 21.35	$ 42.81	$ 4.72	$ 99.05	**$ 167.93**
2037	14.98	10.94	0.79	7.16	**33.87**	$ 22.14	$ 42.90	$ 4.78	$ 100.42	**$ 170.24**
2038	15.30	10.68	0.79	7.14	**33.91**	$ 22.81	$ 42.43	$ 4.84	$ 101.81	**$ 171.89**
2039	15.63	10.42	0.79	7.12	**33.96**	$ 23.51	$ 41.97	$ 4.90	$ 103.22	**$ 173.60**
2040	15.52	10.32	0.78	7.11	**33.73**	$ 24.33	$ 42.12	$ 4.96	$ 104.66	**$ 176.07**
2041	15.75	10.06	0.78	7.03	**33.62**	$ 24.70	$ 41.43	$ 5.00	$ 105.18	**$ 176.31**
2042	15.98	9.80	0.77	6.96	**33.51**	$ 25.07	$ 40.76	$ 5.04	$ 105.71	**$ 176.58**
2043	15.75	9.69	0.76	6.88	**33.08**	$ 25.50	$ 40.71	$ 5.07	$ 106.25	**$ 177.53**
2044	15.99	9.45	0.75	6.81	**33.00**	$ 25.89	$ 40.08	$ 5.11	$ 106.80	**$ 177.88**
2045	16.23	9.22	0.75	6.74	**32.94**	$ 26.28	$ 39.47	$ 5.15	$ 107.36	**$ 178.26**
2046	15.97	9.13	0.74	6.67	**32.51**	$ 26.67	$ 39.48	$ 5.19	$ 107.93	**$ 179.27**
2047	16.21	8.91	0.73	6.60	**32.45**	$ 27.09	$ 38.90	$ 5.23	$ 108.50	**$ 179.72**
2048	16.45	8.69	0.73	6.53	**32.40**	$ 27.50	$ 38.34	$ 5.27	$ 109.09	**$ 180.20**
2049	16.16	8.62	0.72	6.46	**31.96**	$ 27.85	$ 38.40	$ 5.31	$ 109.68	**$ 181.24**
2050	16.41	8.42	0.71	6.40	**31.94**	$ 28.28	$ 37.87	$ 5.35	$ 110.28	**$ 181.78**

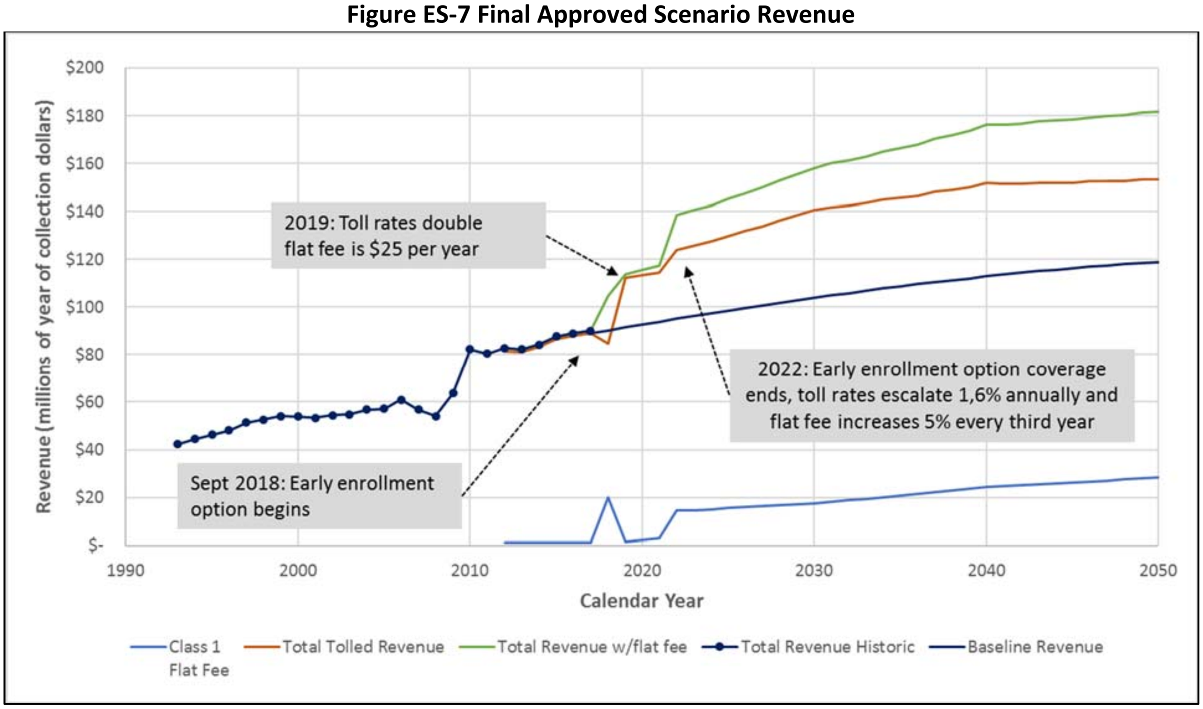
(1) 2012-2016: Actual values
(2) 2017: Estimated values subject to change
(3) 2018: Early enrollment option assumed to begin 9/1/18
(4) 2019: Toll rates double, flat fee is $25 per year
(5) 2022: Early enrollment option coverage ends 12/31/2021, toll rates escalate 1.6% annually, flat fee increases 5% every third year
Source: CDM Smith Analysis

Figure ES-6 Final Approved Scenario Transactions



Source: CDM Smith Analysis

Figure ES-7 Final Approved Scenario Revenue



Source: CDM Smith Analysis

ES.8 Sensitivity Tests

As described in CDM Smith's Disclaimer, the T&R estimates are forecasts of an uncertain future. For this reason, it is important to test assumptions which might have a major impact on the T&R forecasts. The assumptions chosen for the tests are those that present risks and have a potential impact on the estimates. The purpose of the sensitivity tests is to help identify the sources of risk. All sensitivity tests were conducted for year 2030, and results were compared to the WVPA board final approved scenario.

A sensitivity test concerning regional growth was performed to assess the impact on overall T&R estimates for all vehicle classes. For 2030, under the downside regional growth scenario, total transactions and revenue are expected to be reduced by approximately 7.0% and 7.8%, respectively.

Toll rate sensitivity tests were prepared to identify revenue-maximizing toll rates relative to the adopted toll rates. Class 1 and Classes 2-10 were tested separately and then jointly. The Class 1 toll rates were varied from $3.50 to $5.50 in $0.50 increment. The Class 1 revenue maximizing toll is $4.50 which is the selected toll rate for 2030. To test Classes 2-10, the Class 8 (5 axle semi) toll rate was varied from $3.50 to $25.25 and results showed the selected toll rate of $15.50 is well below the revenue maximizing rate of $20.25. Finally, in the joint test where all the toll rates were varied proportionally, the corresponding revenue maximizing rate of $5.50 for Class 1 cash payment was higher than the selected rate of $4.50 for Class 1.

Toll rate elasticity was tested for both Class 1 and Classes 2-10 separately. For Class 1, the elasticity only applies to those who continue to pay with cash since the other payment options are determined through the payment choice model. The test showed when Class 1 cash elasticity is decreased from - 0.18 to - 0.30, total toll revenue decreases by -1.1%. For Classes 2-10, baseline elasticity was assumed to be - 0.196. Lower elasticity of - 0.231 resulted in a -3.7% decrease in overall revenue and lower elasticity of - 0.266 resulted in a -7.4% decrease overall revenue.

For Class 1, initial cash share for each year is an input to the Class 1 model. The final approved scenario shares were derived from existing historic trends on the Turnpike as well as the overall trend in less cash payments for all types of transactions. Lowering the initial cash share by 10% of all Class 1 transactions results in -2.9% overall less revenue. For the Classes 2-10 payment share sensitivity test, two tests were performed. The first test involved lowering the initial cash share by 10% and distributing the remainder proportionally to WV E-ZPass and Non-WV E-ZPass. The result was a reduction of -0.9% in overall total revenue. The second test consisted of keeping the initial cash share unchanged, but lowering the Non-WV E-ZPass share by 10% and increasing the WV E-ZPass share to compensate. The result was a reduction of -0.5% in overall total revenue.

For Class 1 only, the distribution of existing frequency of use is an important input. Actual frequency data obtained was fitted to a Pareto curve statistical distribution. The Pareto distributions at each plaza and model year were then adjusted so that the number of overall trips in the 30+ trips per year bin prior to implementation of the flat fee program exceeded the number of E-ZPass trips in that bin by 10%. The total trips met the baseline transactions forecast for the year being modeled. The sensitivity test held the number of WV E-ZPass trips constant but increased the cash exceedance to 15%, resulting in more high frequency trips than the original assumption. This test resulted in a -0.5% reduction in overall revenue.

The Class 1 annual flat fee is another important factor for the overall revenue forecast. In 2030, the T&R forecasts are based on the assumption of a $28.94 flat fee annual cost. The sensitivity test showed a decrease to $25 is estimated to lower the overall total revenue by -1.4% and an increase to $30 would likely increase the overall revenue by +0.3%.

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Chapter 1
Introduction

The West Virginia Parkways Authority (WVPA) is studying the effects of potential changes in toll policy on traffic and toll revenue on the West Virginia Turnpike (Turnpike). The changes include increases in toll rates as well as the introduction of a revised flat fee program offered to customers driving a passenger car (Class 1) available through the West Virginia electronic toll collection program (WV E-ZPass). WVPA requires updated traffic and revenue (T&R) forecasts for the Turnpike. WVPA will use the forecasts to plan for continued Turnpike capital projects and operations and maintenance funding, as well as additional bonding capacity for other roadway projects in the state to improve access to the Turnpike and other major highways that ultimately connect to the Turnpike for business, individuals, and commercial transportation providers alike.

As used in this report, the terms "flat fee program" and/or "flat fee" refer to the single fee discount program authorized under Chapter 17, Article 16A of the West Virginia Code, 1931, as amended (the "Authority Act") for Class 1 vehicle customers. Under this program, a Class 1 customer can obtain unlimited travel on the Turnpike for an annual fee plus a one-time issuance fee for the vehicle transponder. CDM Smith also analyzed a limited (one-time) early enrollment option that would allow Class 1 customers to participate in the flat fee program for calendar years 2019, 2020, and 2021 at a lower price if such customers opted, prior to December 31, 2018, to participate in the flat fee program and paid the lower price (and any issuance fee) covering all three years. As used in this report, this option is generally referred to as the "early enrollment option". The full terms and conditions of any toll increases, the flat fee program, the early enrollment option, issuance fee, and any related temporary price adjustments are subject to applicable law and further action of WVPA.

As part of this study, CDM Smith collected and analyzed background data on the Turnpike, detailed traffic and revenue (T&R) data covering the last twenty-five years of operation, and customer frequency of use data. By examining prior Turnpike performance, historic local and regional economics, and economic forecasts, a Baseline forecast without toll policy changes was established. A stated preference (SP) survey was conducted to determine the likely reaction of existing customers to a variety of toll policy changes. T&R models were developed to be sensitive to potential toll policy changes and several alternatives were examined. WVPA staff and advisors identified one of these alternatives as best balance of the relevant considerations and variables in calendar years 2018-2050, the "Final Approved Scenario," this alternative was adopted with some changes by the WVPA Board of Directors on June 7, 2018. Finally, CDM Smith conducted sensitivity tests on key assumptions.

1.1 Facility Description

Construction on the Turnpike began in 1952 and the first segment was opened in 1954. A series of upgrades in the 1970s and 80s resulted in the entire Turnpike being brought up to Interstate standards by 1987. The Turnpike totals 88 miles in length and is comprised of four travel lanes (two in each direction) between Charleston and Princeton. The Turnpike is designated as Interstate 77 along its entire length, but also carries the Interstate 64 designation from Charleston to just south of Beckley.

The Turnpike is an important north-south Interstate travel corridor linking eastern Ohio and western Pennsylvania in the north to western Kentucky, Virginia, North Carolina, and other states in the southeastern U.S. The Turnpike extends through mountainous terrain over much of its length; these mountains are a barrier to travel as shown on the regional location map (**Figure 1-1**). Posted speed limits are up to 70 miles per hour, reflecting the high design standards of the facility. The Turnpike serves as a “land bridge” across these mountains. The alternative routes are I-75 in the west and I-68 in the east. For many trips these are not very strong competitors to the Turnpike.

1.2 Traffic and Revenue Forecasting History

CDM Smith has provided traffic and revenue forecasting services for the Turnpike for several decades. The most recent major studies include:

- A comprehensive traffic and revenue forecast conducted in 2005
- A Traffic and Toll Revenue Study conducted in 2009 to determine the effect of permanent toll increases and E-ZPass based discounts on transactions and toll revenue

At the conclusion of the 2009 study, WVPA established a toll increase as well as discounts for all WV E-ZPass users and Non-WV E-ZPass commercial vehicle users. Those toll rates remain in place today.

CDM Smith is under contract to conduct this 2018 Revenue Bond Study. The purpose of this report is to explain the data and methods used in the analysis and to present the T&R forecast for the final approved scenario. The scope of the study includes:

Task 1 – Data Collection and Analysis

- Review of relevant studies and reports
- Assemble detailed historical data including toll class and payment type shares by plaza, as well as E-ZPass based frequency data
- Collect historical traffic data for nearby roadways
- Obtain frequency of use patterns on customer usage from Location-Based Services (LBS)

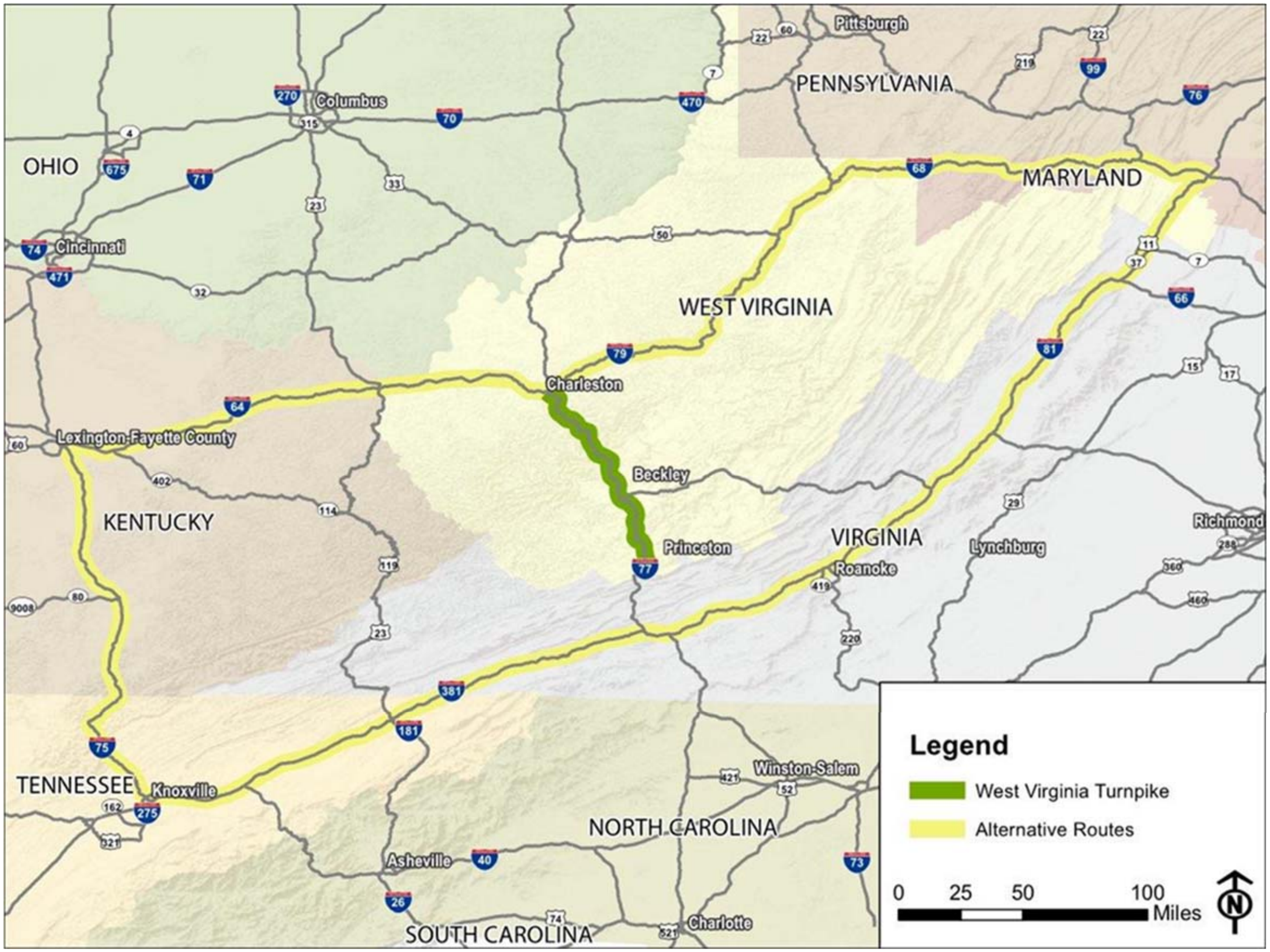
Task 2 – Stated Preference Survey

- Develop survey instrument to cover range of possible tolling policies
- Develop on-line survey
- Distribute information on survey through handouts to customers at plazas, emails to WV and Non-WV E-ZPass customers, and general information posters
- Consolidate survey results and develop statistical payment choice models for Class 1

Task 3 – Econometric Model

- Assemble historical data and forecasts of socioeconomic conditions (such as population, employment, income, and gross regional product) in the region and nearby areas that contribute traffic to the Turnpike

Figure 1-1 West Virginia Regional Location Map



Source: CDM Smith

- Perform econometric (statistical) modeling with historic socioeconomic data and Turnpike data compiled in Task 1
- Prepare a baseline forecast of normal traffic growth for the Turnpike under a scenario with no toll policy change
- Prepare low and high forecasts of traffic growth based on statistical variables

Task 4 – Traffic and Toll Revenue Estimates

- Assess the impact of transportation improvement projects that would likely affect the usage of the Turnpike in the future
- Analyze the impacts of the past toll increase to estimate the toll elasticity of the Turnpike, recalibrating and updating prior toll sensitivity analysis based on these findings
- Develop spreadsheet model which applies market shares from Task 3 and toll rates and programs to develop traffic and revenue streams
- Develop baseline T&R annual stream
- Analyze up to eight alternative scenarios, as identified by WVPA, producing estimates of annual traffic and revenue

Task 5 – Documentation

- Develop comprehensive reporting documenting data, analysis, and findings suitable for use in an Official Statement
- Develop presentation slides for use by WVPA in policy discussions and rating agency presentations

Task 6 – Meetings

- Project planning meeting
- Draft results presentations to WVPA staff, finance working group, board subcommittees, and WVPA board as needed
- Attend WVPA public meetings on proposed toll rate increases
- Attend and present at bond rating agency meetings

Task 7 – Project Management

- Project planning
- Project management including management of subconsultants and vendors
- Progress reports and invoices
- Comprehensive Quality Assurance and Quality Control to meet investment grade standards

Following is a list of the main data sources used for this study:

- Prior T&R studies by CDM Smith (2005 and 2009)
- Historical toll transactions and revenues provided by WVPA
- Comprehensive Annual Financial Reports (CAFRs)
- Annual Consulting Engineer's Reports
- Key transportation planning documents on regional and WV transportation plans, such as the latest WV Turnpike Capital Improvement Program (CIP)
- Data on frequency of usage provided by StreetLight Data, Inc.
- Transaction database (2010-2017) communicated by TransCore on behalf of WVPA

1.3 Order of Presentation

Following this introductory chapter, the remainder of this report is organized as follows.

- Chapter 2 has a summary of existing and historical traffic conditions as well as a review of current toll locations, toll schedules, and discount plans. This chapter also contains information about frequency of use.
- Chapter 3 contains a summary of the SP survey approach and results for existing customers of the Turnpike.
- Chapter 4 includes a detailed explanation of the econometric analysis that was conducted to estimate long-term travel demand for each plaza on the Turnpike.
- Chapter 5 presents the traffic and revenue forecasting approach. It includes an overview of the tolling analysis model, a description of the forecasting process, including the payment choice model, and major forecasting assumptions as well as example scenarios used to test model behavior.
- Chapter 6 includes the results of T&R analysis in the form of estimated annual transactions and toll revenue for the final adopted scenario for the period from FY 2018 through FY 2050.
- Chapter 7 contains the results of sensitivity testing of key model parameters and assumptions.

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Chapter 2

Existing Conditions

This chapter contains a summary of existing conditions starting with a description of the physical characteristics of the Turnpike and the current toll schedule. The chapter also includes a review of trends in traffic and revenue, information about frequency of use, and an overview of the capital investment programs.

2.1 Description of the West Virginia Turnpike

Figure 2-1 shows the Turnpike and the location of the four toll plazas. There are three mainline toll plazas at Ghent (Toll Plaza A) at milepost 30, Pax (Toll Plaza B) at milepost 56, and Chelyan (Toll Plaza C) at milepost 83. There is also one ramp toll plaza located on Route 19 at the North Beckley Exit (Exit 48). Tolls are collected in both directions at the mainline plazas and to and from the south at the North Beckley Plaza.

The Turnpike passes through the West Virginia counties of Kanawha, Fayette, Raleigh, and Mercer, serving cities including Charleston, Beckley, and Princeton. In addition to these cities, smaller communities with more localized trip origins and destinations are served. A large proportion of long-distance interstate trips are served by the Turnpike.

Figure 2-1 also shows several parallel roadways that offer alternatives to various sections of the Turnpike. These roads include:

- U.S. Route 19 between Princeton and North Beckley
- U.S. Route 60 / U.S Route 19 between North Beckley and Charleston
- S.R. 3/S.R. 94 between Beckley and Marmet
- S.R. 61 between Chelyan and Kanawha City

These routes do not offer the higher speeds and convenience provided by the Turnpike. Many of the alternative roads pass directly through local communities, are narrow, and have lower standards of vertical and horizontal geometry in comparison to the Turnpike, which may be of concern due to the mountainous terrain through which the Turnpike corridor runs. Because of the numerous curves and grade changes, the actual average travel speeds on these facilities are significantly lower than those that can be achieved on the Turnpike, resulting in overall longer travel times, especially for longer distance trips.

Also shown on Figures 1-1 and 2-1 are some additional key feeder routes connected to the Turnpike, such as:

- I-81 west of Fort Chiswell in Virginia
- I-77 in the south end of the state near Virginia
- U.S. Route 460 east of I-77 and west of I-77
- I-64 east of Beckley

Figure 2-1 Toll Plaza Location Map

- U.S. Route 19 at North Beckley
- U.S. Route 60 east of Chelyan
- I-77 north of Charleston
- I-79 north of Charleston
- U.S. Route 119 west of Charleston
- I-64 west of Charleston and U.S. 35

2.2 Toll Schedule and Discount Plans

A summary of the toll rate schedule currently in place on the Turnpike is presented in **Table 2-1**. The current toll rates and discount plans became effective on August 1, 2009. (The previous toll rate increase had occurred in 1981.)

The current schedule consists of toll rates for ten vehicle classifications based on the number of axles, vehicle height, and vehicle characteristics. Under the current schedule, passenger car drivers pay $2.00 in cash at each mainline toll plaza and $0.40 at the North Beckley ramp plaza. Cash tolls for five-axle trucks are $6.75 at each mainline toll plaza and $1.60 at North Beckley.

Table 2-1 Current West Virginia Parkways Toll Rates – Aug. 1, 2009 to Present

Toll Class	Vehicle Type	No. of Axles	Barriers A, B & C			North Beckley		
			Cash	WV E-ZPass	Non-WV E-ZPass	Cash	WV E-ZPass	Non-WV E-ZPass
1	Passenger cars/pickup trucks (under 7' 6")	2	$2.00	$1.30	$2.00	$0.40	$0.26	$0.40
2	All Class 1 vehicles with a trailer (under 7' 6")	3+	$2.50	$1.63	$2.50	$0.80	$0.52	$0.80
3	Motorhomes only (over 7' 6")	2-3	$2.50	$1.63	$2.50	$0.80	$0.52	$0.80
4	Class 3 vehicles with a trailer (over 7' 6")	3+	$3.25	$2.11	$3.25	$1.20	$0.78	$1.20
5	2-axle trucks	2	$3.25	$2.60	$2.83	$0.80	$0.64	$0.70
6	3-axle trucks	3	$4.50	$3.60	$3.92	$1.20	$0.96	$1.04
7	4-axle trucks	4	$6.50	$5.20	$5.66	$1.60	$1.28	$1.39
8	5-axle trucks	5	$6.75	$5.40	$5.87	$1.60	$1.28	$1.39
9	6 or more-axle trucks	6+	$9.50	$7.60	$8.27	$2.40	$1.92	$2.09
10	Oversize trucks		$12.00	$9.60	$10.44	$7.20	$5.76	$6.26

Source: WVPA
Note: Class 1 refers to 2-axle vehicles with a gross vehicle weight less than 8,000 lbs. not being used for commercial purposes. Passenger Cars (PC) refers to Classes 1-4. Commercial Vehicles (CV) refers to Classes 5-10.

Electronic toll collection was introduced on the Turnpike in 2000 through the E-ZPass system and is available in all toll plaza lanes. A significant benefit of the E-ZPass system is that motorists are not required to come to a full stop at toll plazas to pay cash for tolls. Instead E-ZPass customers have an electronic transponder in their vehicles, and all transaction information is passed electronically between the vehicle and the toll plaza.

Several discount plans are available to customers through E-ZPass, as described below.

2.2.1 Personal Discount Plan #1

A discount plan intended for high frequency users of the Turnpike has been in place since 2000 (North Beckley since 1989) with no increase in fees since then. The program is restricted to Class 1 vehicles defined as passenger cars and trucks with a gross vehicle weight of less than 8,000 pounds that are not being used for commercial or business purposes.

This existing flat fee program entitles eligible customers to unlimited travel through each plaza for which they purchase the flat fee plan. Rates are shown on **Table 2-2**. Subscribers can choose any combination of the three mainline plazas for a quarterly flat fee of $25 per plaza. A $5 discount per mainline toll plaza is offered for an annual plan, for a total cost of $285 for all three mainline toll plazas. This equates to a 5% discount per mainline plaza over the quarterly flat fee. Included with any of the mainline plazas is the North Beckley ramp, which costs $5 annually if purchased separately. Subscribers are issued a WV E-ZPass transponder which provides unlimited access to the selected plazas, while also processing regular pay-per-use transactions at other plazas at the Plan #2 rates provided prepaid funds are added to the account.

Table 2-2 Personal Discount Plan #1 Rates

Plaza	Yearly Rate	Quarterly Rate
Plaza A	$95.00	$25.00
Plaza B	$95.00	$25.00
Plaza C	$95.00	$25.00
Plaza A & B	$190.00	$50.00
Plaza A & C	$190.00	$50.00
Plaza B & C	$190.00	$50.00
Plaza A, B, & C	$285.00	$75.00
North Beckley Ramp	$5.00	NA

Source: WVPA

2.2.2 Personal Discount Plan #2

A discount program for less frequent travelers than Personal Discount Plan #1, covering all Passenger Cars (PC - Classes 1 through 4), was introduced in 2009. Customers can sign up for a WV E-ZPass at a cost of $5.00 per year, then pre-pay funds via credit card into their account ($20.00 minimum account balance). Personal Discount Plan #2 provides a 35% discount from the cash toll rates. The discounted toll is automatically deducted from the prepaid account as they drive through the toll plazas. The WV E-ZPass is available to anyone, regardless of state or country of residence. Rates are shown in Table 2-1 under the column "WV E-ZPass". (Note that no discount is offered to PCs paying with a Non-WV E-ZPass.)

2.2.3 Commercial Discount Plan #3

Commercial Discount Plan #3 provides a 20% discount from the cash toll rates for Commercial Vehicles (CV - Classes 5 through 10). This requires an E-ZPass account with the Turnpike, created through a $25.00 charge for the transponder and the creation of a prepaid account using a credit/debit card or bank account. Rates are shown in Table 2-1 under the column "WV E-ZPass".

2.2.4 Commercial Discount Plan #4

Commercial Discount Plan #4 provides a 13% discount from the cash toll rates for CVs. This requires an account opened and managed by E-ZPass issued by an agency other than WV Turnpike. There is no additional paperwork, account maintenance fee, or charge for the transponder. Rates are shown in Table 2-1 under the column "Non-WV E-ZPass".

2.3 Traffic and Transactions

Historical transaction trends on the Turnpike were reviewed and are presented in this section. Also described here are recent trends in traffic volumes, transactions by month, plaza, vehicle type, payment type, and place of residence. This data helps to develop an operating profile of Turnpike usage.

2.3.1 Average Daily Traffic

Counts of average daily traffic (ADT) on the Turnpike, which are derived from the West Virginia Division of Highways FY 2015 traffic counts, are listed by location in **Table 2-3**. Locations are shown by mile marker, from south to north. **Table 2-4** presents ADT for key connecting or competing routes.

Table 2-3 Average Daily Traffic on the Turnpike

Mile Marker	Location	ADT
9-28	Princeton to Ghent	32,400
28-40	Ghent to I-64	27,000
40-42	I-64 to Mabscott	38,800
42-44	Mabscott to Harper Rd	42,300
44-48	Harper Rd to N. Beckley	46,800
48-60	N. Beckley to Mossy	29,900
60-74	Mossy to Standard	29,600
74-78	Standard to Sharon	29,800
78-85	Sharon to Chelyan	29,400
85-90	Chelyan to Marmet	35,200
90-95	Marmet to Kanawha City	36,000
95-96	Kanawha City to Belle	53,800

Source: West Virginia Division of Highways FY 2015

Table 2-4 Average Daily Traffic on Other Routes

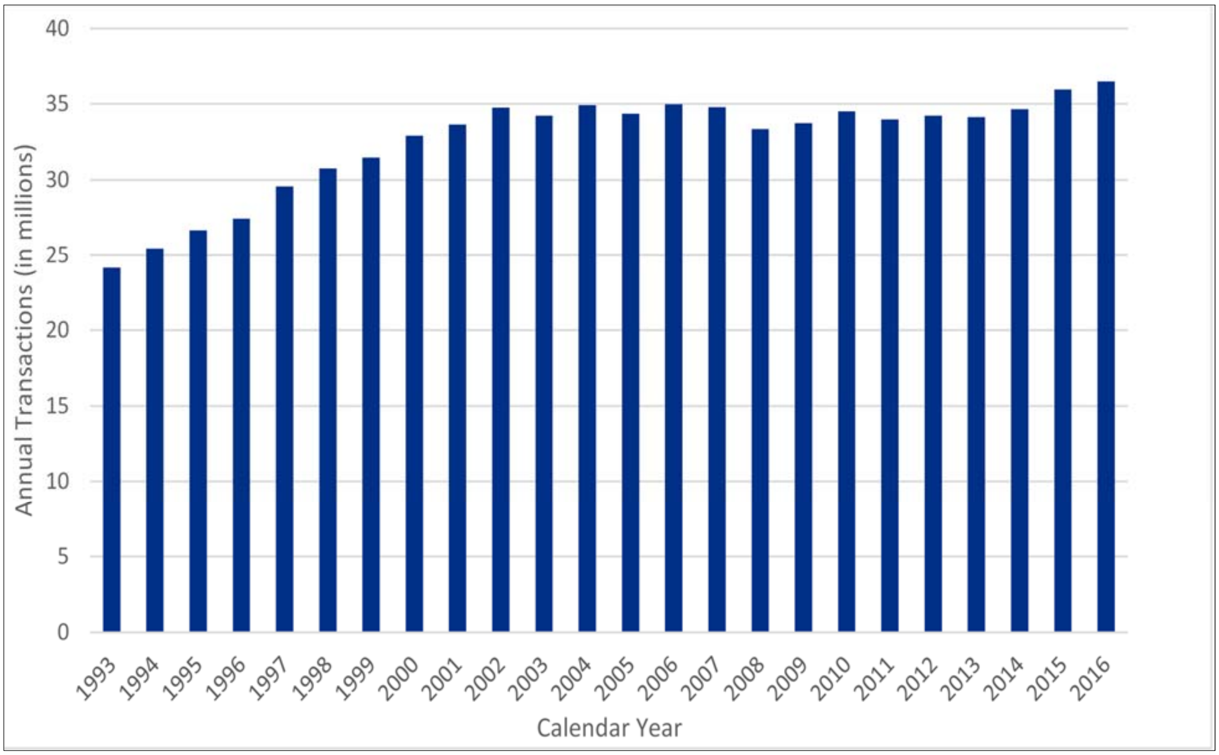
Facility	Location	Count Year	ADT
I-81	West of Fort Chiswell, VA	2015	52,000
I-77	VA state line	2015	28,000
U.S. 460	East of I-77	2015	14,400
U.S. 460	West of I-77	2015	14,300
I-64	East of Beckley	2014	24,600
U.S. 19	North of Beckley	2015	25,500
U.S. 60	East of Chelyan	2013	12,200
I-77	North of Charleston	2016	28,800
I-79	North of Charleston	2012	30,200
U.S. 119	West of Charleston	2016	34,100
I-64	West of Charleston	2015	79,800

Sources: WVDOT and VDOT

2.3.2 Historical Annual Transactions

Figure 2-2 contains total annual CY transactions on the Turnpike between 1993 and 2016. Over the entire period, systemwide toll transactions increased from 24.2 million in 1993 to 36.5 million in 2016, representing a compound annual growth rate (CAGR) of 1.8%. The Turnpike experienced strong growth in transactions from 1993 to 2002, with a CAGR of 4.1%. Between 2002 and 2013, transactions remained stable or declined. The decline of transactions in 2008 was influenced by the Great Recession. The toll rate increase of August 1, 2009 appears to have had little to no effect on overall transaction trends. In recent years, the Turnpike has experienced an upward trend with an annual average increase of 2.3% between 2013 and 2016. Variations in transactions are largely the result of the national macroeconomic climate affecting demographics and travel patterns.

Figure 2-2 Annual Systemwide Transactions

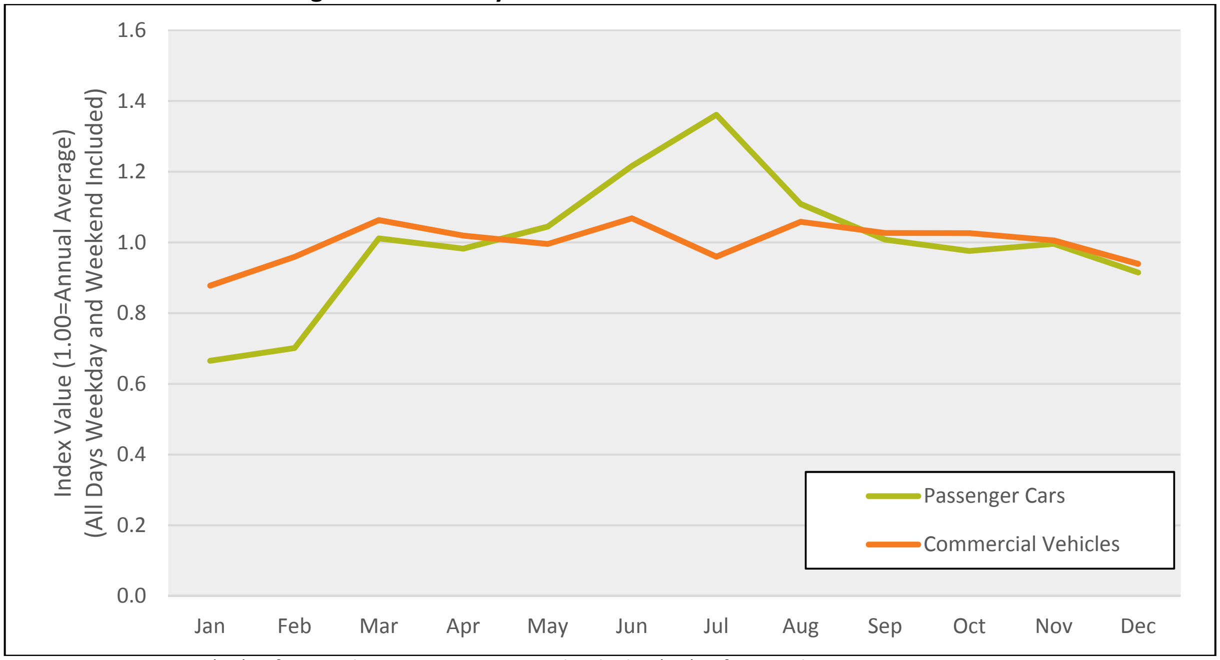


Source: WVPA

2.3.3 Seasonal Variations

Figure 2-3 provides a visual summary of the CY 2016 distribution of Turnpike transactions by month, between PCs (Classes 1-4) and CVs (Classes 5-10). PCs exhibit a distinct peaking pattern with significantly higher transactions in June through August (respectively 22%, 36%, and 11% higher than the annual average) due to the additional travel of summer tourists. Monthly total PC transactions in the peak summer month of July is approximately double that of the lowest months, January and February. Among CVs, there is considerably less variation and monthly transactions are generally stable throughout the year.

Figure 2-3 Monthly Toll Transaction Variations – CY 2016

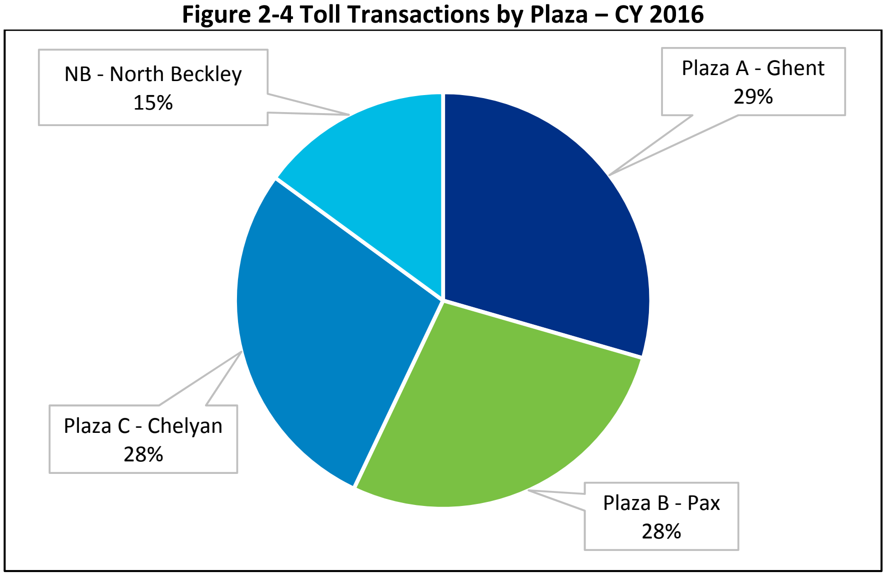


Note: Passenger Cars (PC) refers to Classes 1-4. Commercial Vehicles (CV) refers to Classes 5-10.
Source: WVPA (TransCore database) and CDM Smith Analysis

2.3.4 Transactions by Plaza

Figure 2-4 shows the relative contribution of each toll location to the Turnpike's total transactions in CY 2016. The three mainline plazas accounted for roughly the same share of overall transactions (about 28%) while the North Beckley ramp plaza represented about 15% of the total. The share of transactions by plaza has remained very stable over the last decade. For instance, in 2008, North Beckley had about 17% of all transactions and each mainline plaza had about 28%.

Figure 2-4 Toll Transactions by Plaza – CY 2016



Source: WVPA (TransCore database) and CDM Smith Analysis

2.3.5 Vehicle Classification

In CY 2016, PCs accounted for 78% of transactions and CVs accounted for almost 22% of transactions. The detailed breakout of 2016 transactions by class is shown in **Table 2-5**.

The share of CV transactions as a proportion of all transactions was the same in 2012 (22%). In 2016, all mainline plazas had a similar share of CV transactions, about 22% at Plaza A-Ghent, 25% at Plaza B-Pax, and 24% at Plaza C-Chelyan. However, the North Beckley ramp plaza had much fewer CVs at less than 10% of total transactions.

Table 2-5 Transactions by Class – CY 2016

Toll Class	Vehicle Type	Axles	Transactions	% Trans
1	Passenger cars/pickup trucks (under 7' 6")	2	27,588,560	75.6%
2	All Class 1 vehicles with a trailer (under 7' 6")	3+	795,590	2.2%
3	Motorhomes only (over 7' 6")	2-3	63,854	0.2%
4	Class 3 vehicles with a trailer (over 7' 6")	3+	58,277	0.2%
		Passenger Cars (PC) Sub Total	**28,506,282**	**78.1%**
5	2-axle trucks	2	544,502	1.5%
6	3-axle trucks	3	341,945	0.9%
7	4-axle trucks	4	129,246	0.4%
8	5-axle trucks	5	6,675,330	18.3%
9	6 or more-axle trucks	6+	174,140	0.5%
10	Oversize trucks		33,779	0.1%
		Commercial Vehicles (CV) Sub Total	**7,898,943**	**21.6%**
		Unclassified	80,661	0.2%
		Total	**36,485,886**	**100.0%**

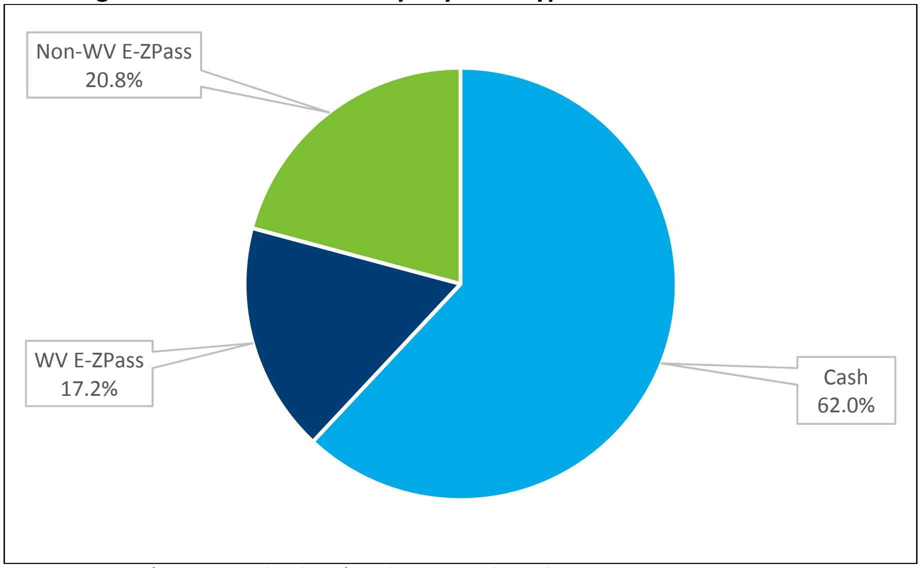
Source: WVPA (TransCore database) and CDM Smith Analysis
Note: About 80,700 transactions were not linked to a specific toll class and are shown as "Unclassified." However, nearly all of these occur at the North Beckley Automatic Coin Machines which mostly serve Class 1 vehicles. Transactions from the current flat fee Discount Program 1 are approximately 3.2 million annually and are included in the Class 1 results above.

2.3.6 Method of Payment

Only cash and E-ZPass can be used to pay tolls on the Turnpike. No debit/credit cards are accepted at toll plazas. **Figure 2-5** presents the breakout of CY 2016 annual toll transactions by payment category (cash, WV E-ZPass, and Non-WV E-ZPass).

The WVPA is a full member agency of the E-ZPass Group along with multiple other toll agencies equipped with the E-ZPass system. This allows any vehicle equipped with a transponder to travel seamlessly without stopping throughout 16 eastern states, including 27 public toll agencies where the E-ZPass standard is accepted. These states range from Illinois to the west, North Carolina in the south, and up to Maine in the north. The program overall includes over 20 million accounts with over 34 million transponders in circulation and the collection of over $9 billion in electronic toll revenues in CY 2016.

Figure 2-5 Toll Transaction by Payment Type – All Vehicles – CY 2016



Source: WVPA (TransCore database) and CDM Smith Analysis

All toll plaza lanes accept E-ZPass. In addition to staffed and E-ZPass capability, the North Beckley Toll Plaza includes two lanes in each direction that provide the option to pay by coin via automatic coin machines when operated unstaffed with “EXACT CHANGE” signs displayed. The use of these lanes provides additional options for patrons and operational efficiencies for WVPA. Advance E-ZPass signage is presented along the roadways approaching the toll plazas to further communicate that all lanes are available for E-ZPass customers. Temporary tandem toll booths continue to be available as a tool to relieve congestion during holiday periods as necessary at the Ghent, Pax, and Chelyan toll plazas.

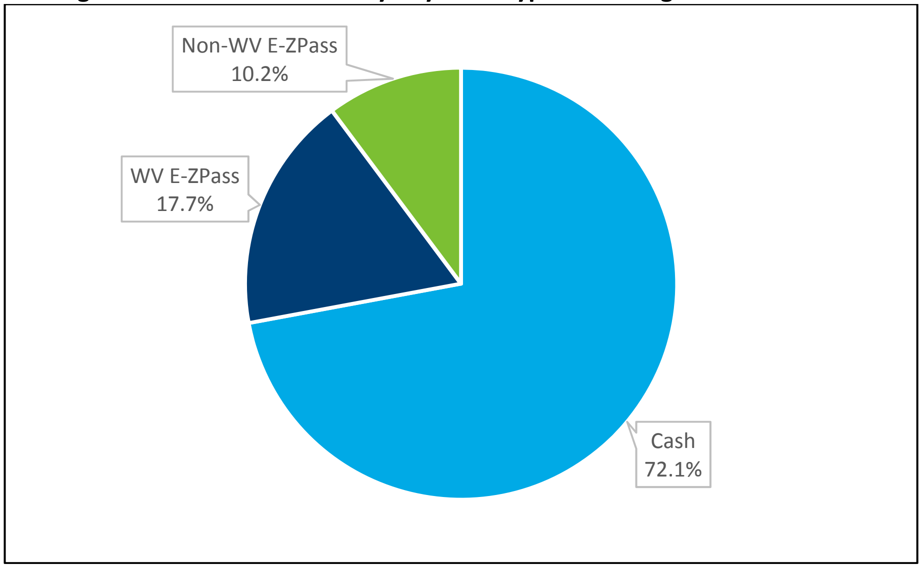
As shown in Figure 2-5, about 62% of CY 2016 transactions were paid by cash, 17% were WV E-ZPass transactions, and the remaining 21% were Non-WV E-ZPass transactions. In 2016, payment via automated coin machines at the North Beckley ramp plaza accounted for about 6% of all systemwide transactions (included in the cash total).

The method of payment varies significantly between passenger cars and commercial vehicles, as illustrated in **Figures 2-6** and **2-7**. Among PC transactions, cash is by far the method of payment used most often, representing 72% of all transactions. WV E-ZPass transactions represent 18% of PC transactions and 10% are Non-WV E-ZPass transactions.

Among CV transactions, E-ZPass is by far the most common method of payment at 75% total. Non-WV E-ZPass transactions represent 59% of CV transactions, WV E-ZPass are 16%, and the remaining 25% are cash transactions.

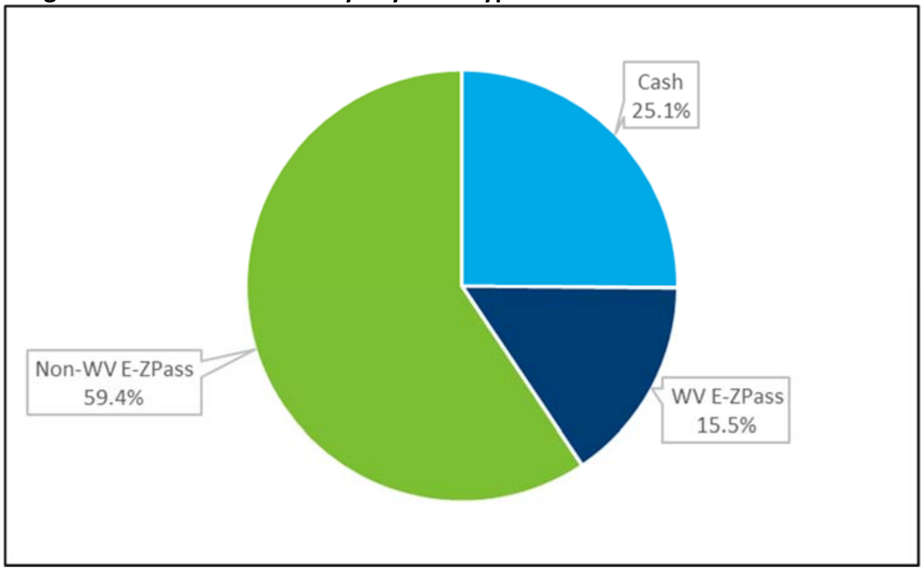
All three mainline plazas have a similar E-ZPass market (about 37%), while at the North Beckley ramp plaza, the share of E-ZPass transactions reached 43% in 2016.

Figure 2-6 Toll Transaction by Payment Type – Passenger Cars – CY 2016



Source: WVPA (TransCore database) and CDM Smith Analysis

Figure 2-7 Toll Transaction by Payment Type – Commercial Vehicles – CY 2016



Source: WVPA (TransCore database) and CDM Smith Analysis

As of 2017, the WV E-ZPass system has approximately 46,000 accounts. The WV E-ZPass system currently permits several vehicles to be associated with an individual E-ZPass account, however most of the accounts (87%) have just one vehicle registered. Two-vehicle accounts represent about 11%, and three-vehicle accounts about 2% of all WV E-ZPass accounts. The number of vehicles per account is shown in **Table 2-6**.

Table 2-6 Number of Vehicles per WV E-ZPass Account

# of Vehicles	# of Accounts	Share (%)
1	39,836	87%
2	4,972	11%
3	858	2%
4	177	0%
5	48	0%
Total	**45,891**	**100%**

Source: WVPA, as of September 2017

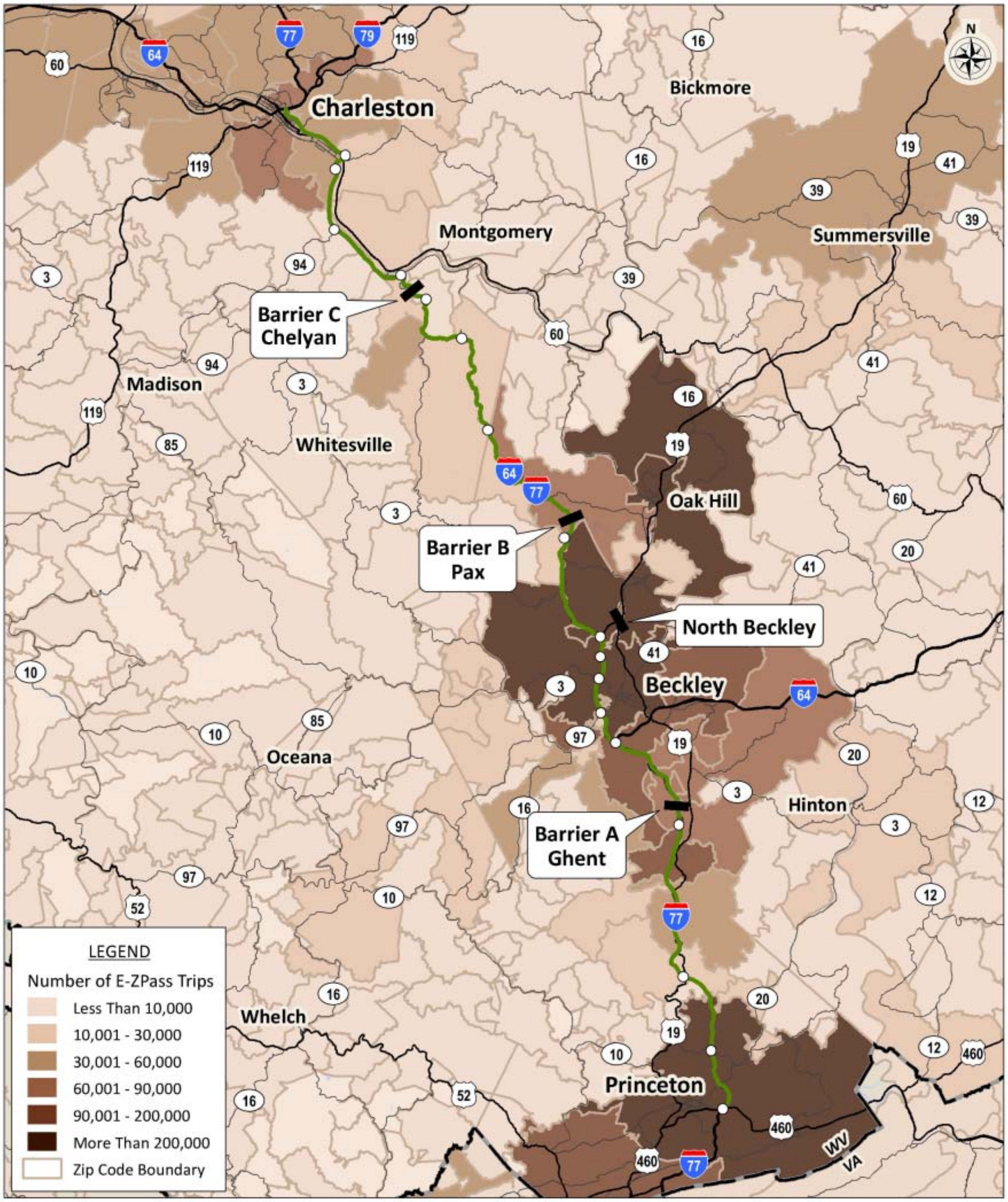
2.3.7 E-ZPass Trips by Zip Code

Figure 2-8 illustrates the number of CY 2016 E-ZPass trips by zip code. The zip codes are based upon the location of E-ZPass account registration. The share of E-ZPass trips with in-state accounts is 45%. The county with the highest share of E-ZPass trips is Raleigh County that includes Beckley and represents about 16% of all E-ZPass trips. More generally, a high share of E-ZPass trips are associated with Beckley and the surrounding areas. Other locations with high densities of E-ZPass trips include Princeton and Charleston.

2.3.8 E-ZPass End-to-End Trips

The CY 2016 E-ZPass transactions were analyzed to estimate the share of trips traveling end-to-end on the facility i.e., between Ghent and Chelyan. It was found that end-to-end trips represent about 31% of the WV E-ZPass trips and about 70% of the Non-WV E-ZPass trips. These percentages are based on total trips at Ghent and Chelyan.

Figure 2-8 Number of E-ZPass Trips by Zip Code (CY 2016)



Source: TransCore data and CDM Smith Analysis

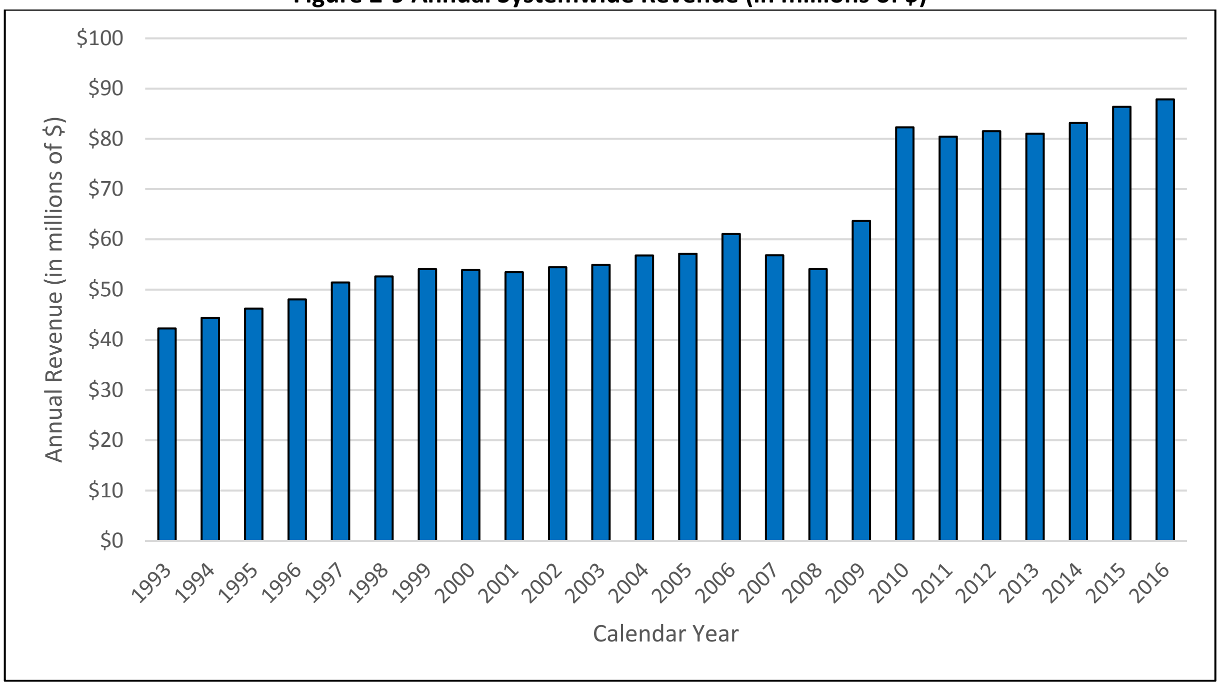
2.4 Annual Toll Revenue

Historical revenue trends on the Turnpike were reviewed and are presented in this section. Also described here are recent trends in revenue by plaza, vehicle class, and payment type.

2.4.1 Historical Annual Revenue

Figure 2-9 is a graph showing total CY annual revenue on the Turnpike between 1993 and 2016. Over the entire period, systemwide toll revenue increased from $42.3 million in 1993 to $87.8 million in 2016, representing a CAGR of 3.2%. Variations in revenue are largely the result of the national macroeconomic climate, toll rate adjustments made by WVPA, and increases in utilization of the E-ZPass discount programs. In general, the revenue trend followed the transaction pattern previously described, including a drop in 2007/2008 due to the Great Recession. The effects of the toll rate increase on August 1, 2009 were seen during the last five months of 2009 and the first seven months of 2010. For the twelve-month period beginning August 1, 2009, toll transactions increased 2.5% and toll revenues increased 56.3%. Stated another way, the approximately 60% toll rate increase for cash customers, but discounted for E-ZPass customers, contributed to an approximately 52% increase in revenue over the period 2008 to 2010.

Figure 2-9 Annual Systemwide Revenue (in millions of $)



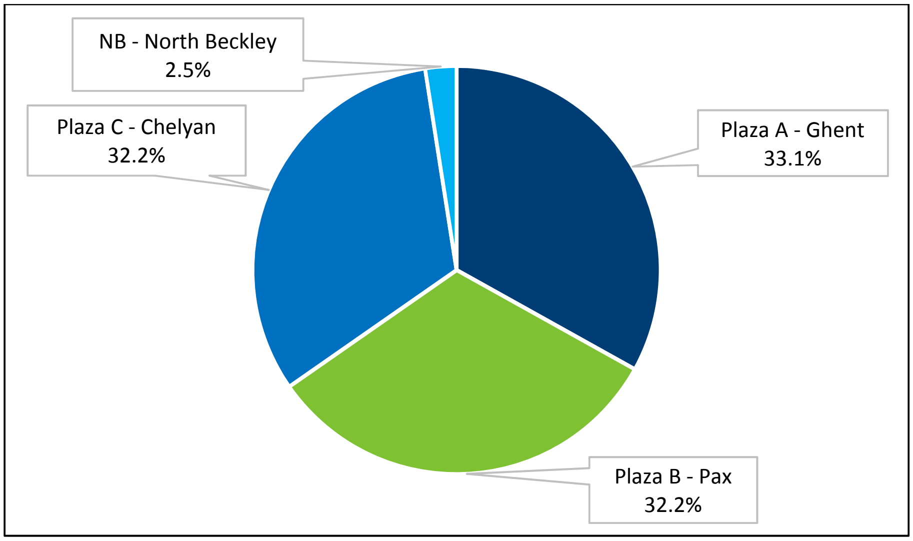
Source: WVPA

Note: Revenue from the current flat fee Discount Program 1 is tracked separately and is not included in the revenue summary results. For years 2012-2017, the average revenue from this program was $1.2M annually.

2.4.2 Revenue by Plaza

As shown on **Figure 2-10**, the three mainline plazas accounted for roughly the same share of overall revenue in CY 2016 (about 32% each) while the North Beckley ramp plaza represented only about 2% of the total. This reflects lower toll rates and fewer transactions at the North Beckley plaza. As a comparison, the share of revenue generated by North Beckley was 3% in 2000.

Figure 2-10 Revenue by Plaza



Source: WVPA (TransCore database) and CDM Smith Analysis

2.4.3 Revenue by Vehicle Classification

Commercial Vehicle (CV) toll rates are higher than passenger car toll rates, therefore the share of CVs in overall revenue is higher than the share of CVs in transactions. In CY 2016, CVs accounted for 49% of revenue. As a comparison, the share of revenue generated by CVs was 50% in 2012.

The breakdown by class is shown in **Table 2-7**. The vast majority (95%) of passenger car revenue comes from Class 1 vehicles. For commercial vehicles, Class 8 vehicles generate 88% of commercial vehicle revenue.

Table 2-7 Revenue by Class – CY 2016

Toll Class	Vehicle Type	Axles	Revenue	% Rev
1	Passenger cars/pickup trucks (under 7' 6")	2	$ 42,216,596	48.1%
2	All Class 1 vehicles with a trailer (under 7' 6")	3+	$ 1,818,479	2.1%
3	Motorhomes only (over 7' 6")	2-3	$ 147,597	0.2%
4	Class 3 vehicles with a trailer (over 7' 6")	3+	$ 176,632	0.2%
		Passenger Cars Sub Total	**$ 44,359,304**	**50.5%**
5	2-axle trucks	2	$ 1,447,737	1.6%
6	3-axle trucks	3	$ 1,232,604	1.4%
7	4-axle trucks	4	$ 706,495	0.8%
8	5-axle trucks	5	$ 38,327,692	43.6%
9	6 or more-axle trucks	6+	$ 1,383,802	1.6%
10	Oversize trucks		$ 360,194	0.4%
		Commercial Vehicles Sub Total	**$ 43,458,524**	**49.5%**
		Unclassified	$ 22,650	0.0%
		Total	**$ 87,840,478**	**100.0%**

Source: WVPA (TransCore database) and CDM Smith Analysis
Note: About $22,650 in revenues were not linked to a specific toll class and are shown as "Unclassified." However, nearly all of these occur at the North Beckley Automatic Coin Machines which mostly service Class 1 vehicles. Revenue from the current flat fee Discount Program 1 is tracked separately and is not included in the revenue summary results. For years 2012-2017, the average revenue from this program was $1.2M annually.

2.4.4 Revenue by Payment Type

In 2016, about 55% of the revenue was generated by cash payment, while the remaining 45% came from E-ZPass payment. Note that the share of E-ZPass in overall revenue is higher than the share of E-ZPass in transactions. This is because almost 73% of the E-ZPass revenue is generated by trucks.

Table 2-8 shows that 83% of the passenger car revenue comes from cash payment, while only 27% of the commercial vehicle revenue comes from cash. The highest share of the commercial vehicle revenue comes from Non-WV E-ZPass payment, with over 60%.

These results also show that a large portion (36%) of Turnpike revenue comes from Non-WV E-ZPass. Additional indication from cash users of the Turnpike who took the SP survey (see Chapter 3) indicates approximately 70% of the Class 1 cash users are out of state contributing 29% of the total revenue, bringing the out of state revenue proportion to approximately 65%, not including Non-WV cash Classes 2-10 revenue. A travel survey conducted by CDM Smith in 2005 as part of a previous revenue study indicated about 76% of all revenue comes from vehicles registered out of state.

Table 2-8 Revenue by Payment Type and Vehicle Class – CY 2016

Vehicle Type	Revenue			Share of Revenue		
	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total
Cash	$ 36,929,460	$ 11,780,456	$ 48,709,916	83.2%	27.1%	55.5%
WV E-ZPass	$ 2,312,703	$ 5,533,495	$ 7,846,198	5.2%	12.7%	8.9%
Non-WV E-ZPass	$ 5,139,790	$ 26,144,573	$ 31,284,363	11.6%	60.2%	35.6%
Total	**$ 44,381,954**	**$ 43,458,524**	**$ 87,840,478**	**100.0%**	**100.0%**	**100.0%**

Source: WVPA (TransCore database) and CDM Smith Analysis

2.5 Frequency of Use

Frequency of use is a major factor to consider when studying the effects of the proposed changes in toll policy, particularly when revising the Class 1 flat fee program on the Turnpike. The frequency of use is defined as the number of trips each customer made through a given plaza during a year.

To estimate the existing frequency of use, CDM Smith had access to two various sources of data:

- A detailed record of E-ZPass transactions provided by WVPA
- A dataset provided by StreetLight Data, Inc. to understand the frequency of trips by mobile devices for the period July 2016 through June 2017

For these two data sources, the section below provides an overview of the approach and summary of findings.

2.5.1 E-ZPass Customers

The E-ZPass transaction records provided by WVPA were analyzed by CDM Smith to develop a frequency of use profile of E-ZPass customers in CY 2016.

The frequency of use, defined as the number of times a transponder passed through a given plaza in the year, was derived by vehicle class (PC and CV), and E-ZPass agency (WV and Non-WV). The frequency data shows the proportion of customers that used the Turnpike 1 to 10 times per year, 10 to 20 times per year, 20 to 30 times per year, etc.

Figures 2-11 and **2-12** show the frequency distribution and cumulative frequency distribution for WV E-ZPass and Non-WV E-ZPass passenger car customers.

The majority of E-ZPass PC customers travel on the Turnpike infrequently. Among WV E-ZPass PC customers, the proportion of travelers using the Turnpike less than 50 times a year in 2016 was found to be 86% at the Ghent and Pax plazas, 85% at Chelyan, and 76% at North Beckley. North Beckley had a higher proportion of frequent users.

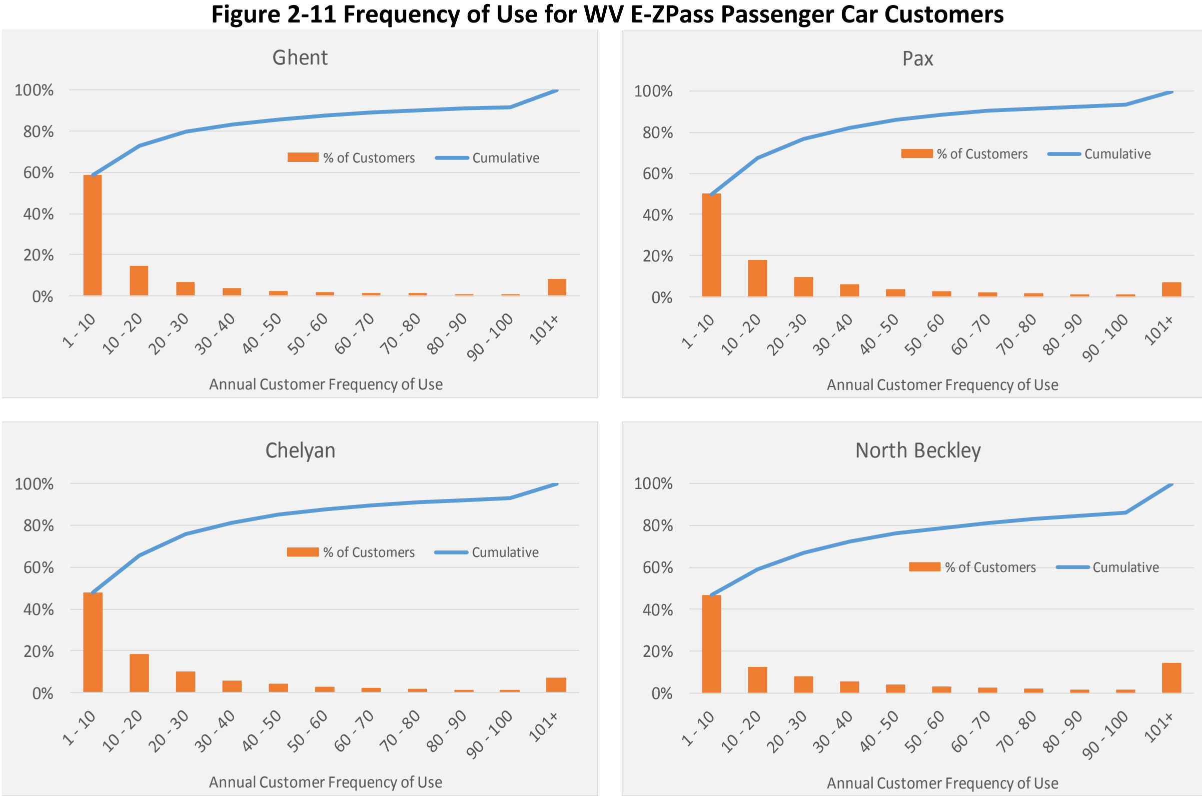
The level of frequency is even lower among Non-WV E-ZPass PC customers, with the proportion of travelers using the Turnpike less than 10 times a year reaching 98% at all four plazas.

Figures 2-13 and **2-14** show the frequency distribution and cumulative frequency distribution for WV E-ZPass and Non-WV E-ZPass CV customers.

The majority of E-ZPass CV customers also travel on the Turnpike infrequently. Among WV E-ZPass CV customers, the proportion of travelers using the Turnpike less than 50 times a year in 2016 was found to be 80% at the Ghent plaza, 81% at Pax, 82% at Chelyan, and 90% at North Beckley.

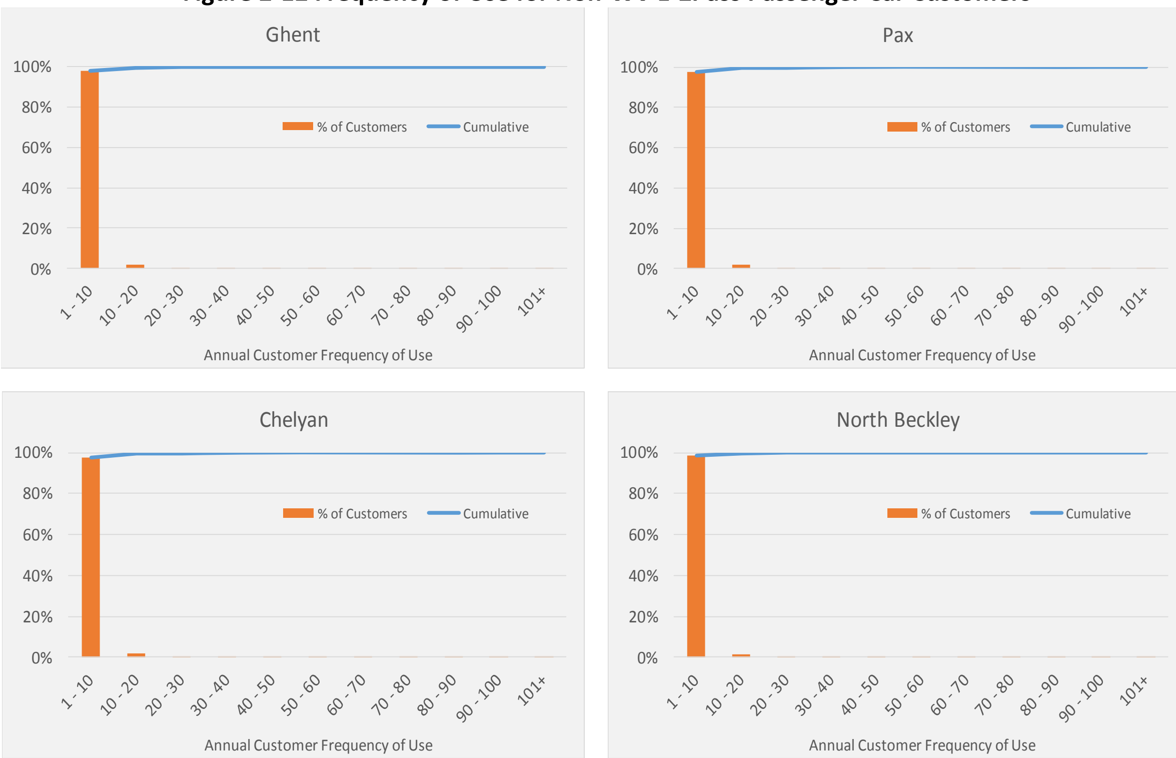
The level of frequency is even lower among Non-WV E-ZPass CV customers, with the proportion of travelers using the Turnpike less than 10 times a year reaching about 90% at the mainline plazas, and 95% at North Beckley.

Figure 2-11 Frequency of Use for WV E-ZPass Passenger Car Customers



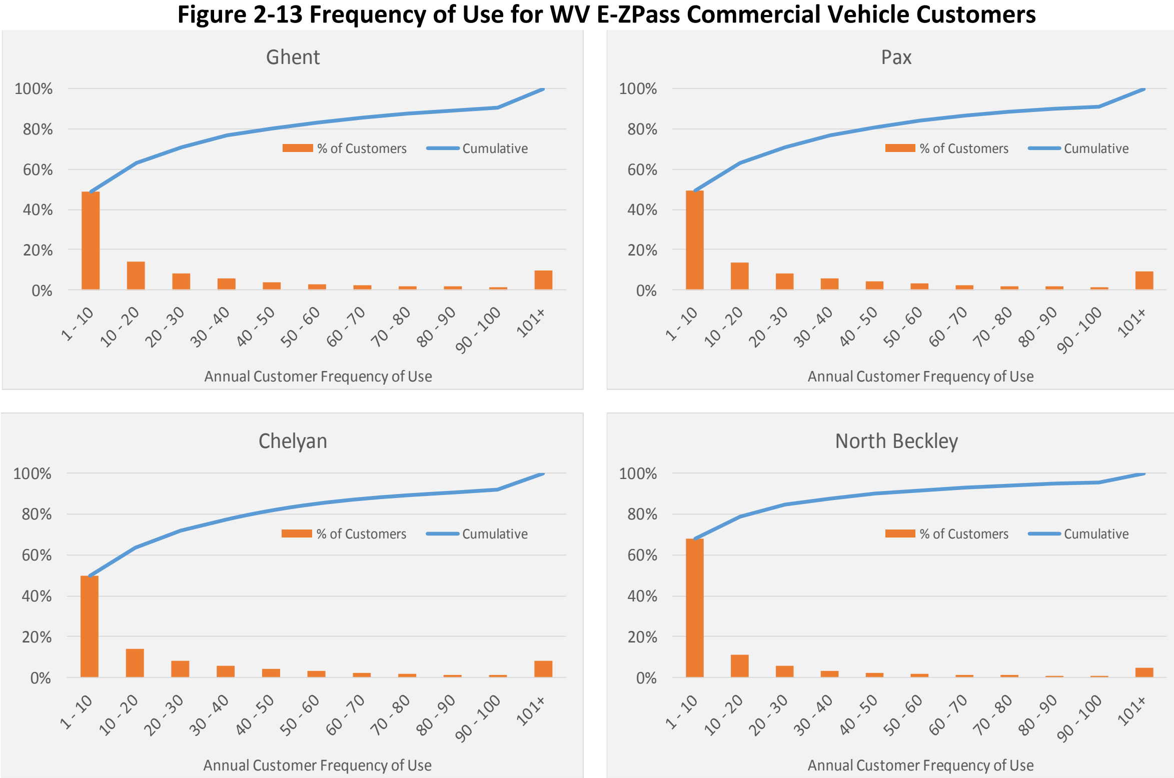
Source: WVPA (TransCore database) and CDM Smith analysis

Figure 2-12 Frequency of Use for Non-WV E-ZPass Passenger Car Customers



Source: WVPA (TransCore database) and CDM Smith analysis

Figure 2-13 Frequency of Use for WV E-ZPass Commercial Vehicle Customers



Source: WVPA (TransCore database) and CDM Smith analysis

Figure 2-14 Frequency of Use for Non-WV E-ZPass Commercial Vehicle Customers

Source: WVPA (TransCore database) and CDM Smith analysis

2.5.2 StreetLight Data

CDM Smith obtained Turnpike traveler frequency data from StreetLight Data, Inc. The data is developed from all available carriers and a variety of sources (GPC, WIFI proximity, GPS, Bluetooth proximity, and cellular triangulation). LBS data are derived from smart phones with applications that use Location-Based Services, such as weather, retail shopping, or navigation applications, all of which provide services to their users that are fundamentally linked to those users' locations. While cellular data was considered for general traveler frequency data, the main advantages of LBS data are:

- Spatial precision: On average, StreetLight's LBS data has 25-meter spatial precision or better. In contrast, cellular data tends to have 100-300-meter spatial precision.
- Ping rate: Devices using LBS generally send "pings" when the device changes location. In contrast, cellular tower "pings" are irregular.
- Privacy protection: Device users must proactively opt-in and enable LBS before they can use them. In contrast, cellular providers do not require proactive opt-in.

The data from StreetLight is considered to be a representative sample of the customers passing through each of the four tolling plaza locations from July 2016 to June 2017. Toll plaza geographic capture zones were established to filter the data to the Turnpike roadway immediately before and after each toll plaza and excluding nearby local roadways and over/under passes. **Figure 2-15** through **2-18** illustrate the zones.

Figure 2-15 Ghent Toll Plaza A StreetLight Data Zone

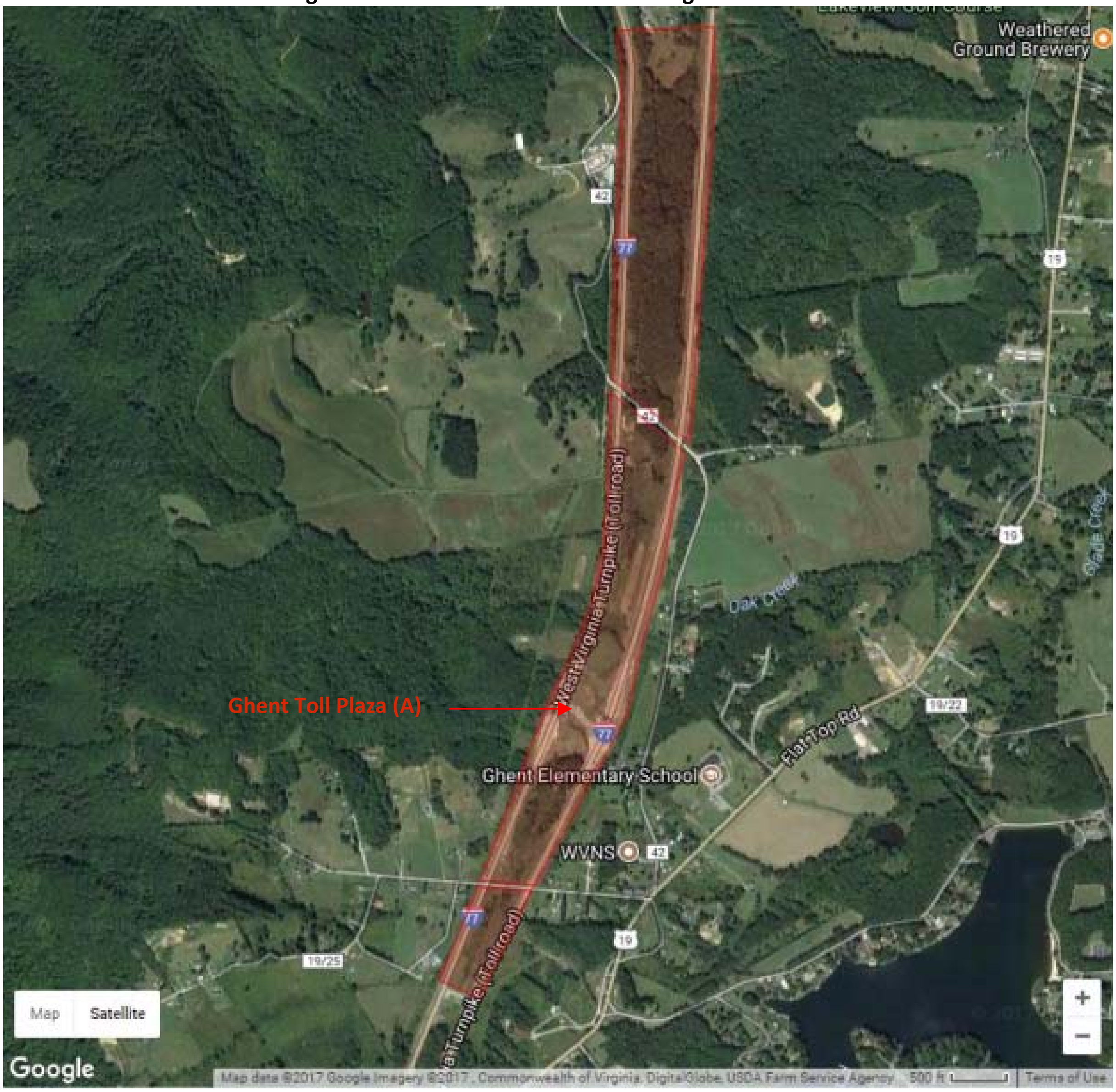


Figure 2-16 Pax Toll Plaza B StreetLight Data Zone

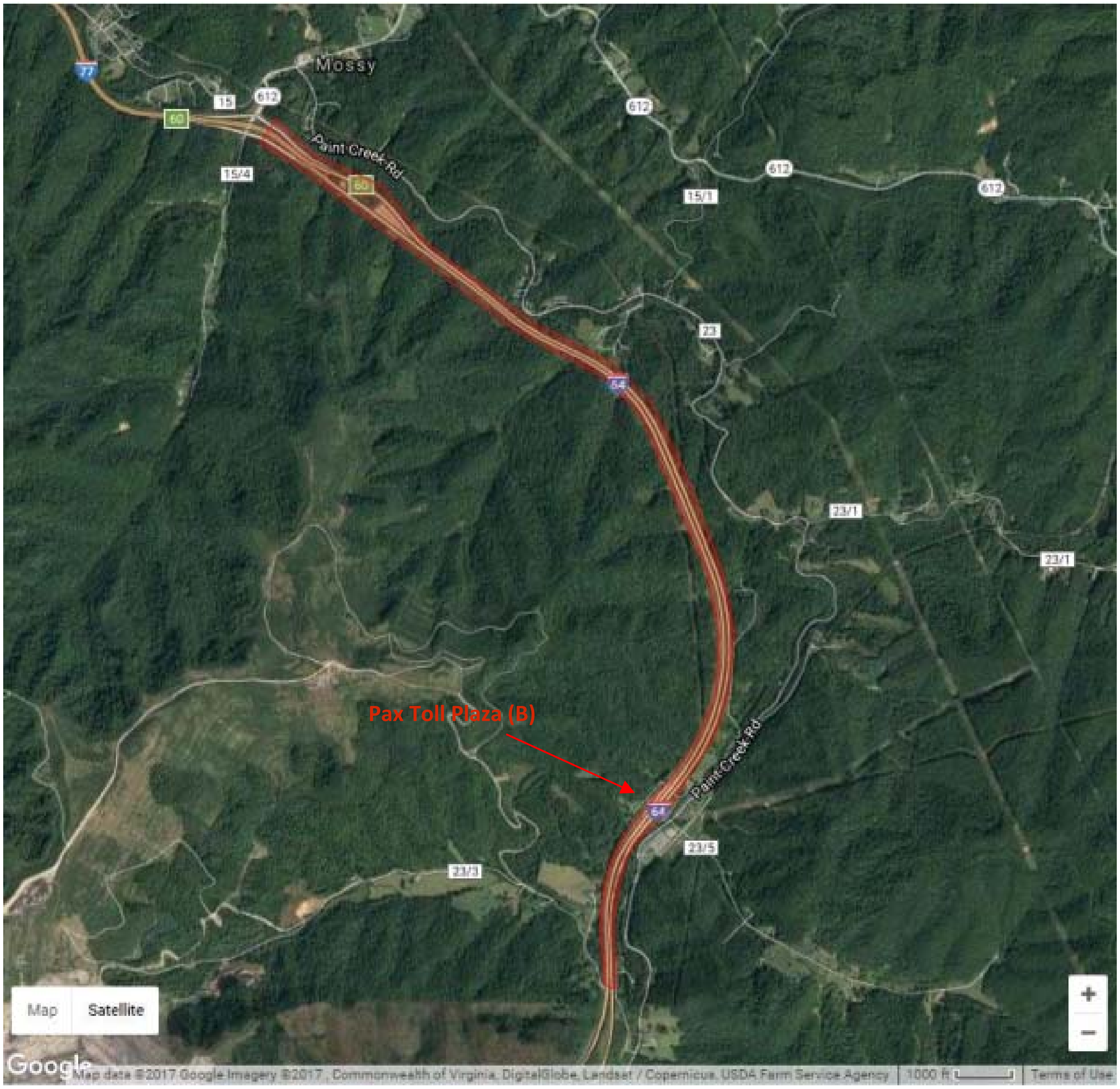


Figure 2-17 Chelyan Toll Plaza C StreetLight Data Zone

Figure 2-18 North Beckley Toll Plaza StreetLight Data Zone

The data review established the number of times the device was observed at each toll plaza zone over the year, presented as the number of occurrences per year. The data describes the frequency of use by all types of Turnpike customers within the dataset. Unfortunately, it was not possible to separate customer payment method, vehicle classification, or state of residence. However, data was only obtained from personal devices and thus does not include commercial services and commercial fleet information.

The data was filtered to retain only the most reliable device makes. Some makes of smartphones are less reliable for a variety of reasons: less frequent locations when an application is in the background, interpolated locations, incorrect geolocations, and miscellaneous other effects. Devices were also screened to those that are seen throughout the 12 months of observations, i.e., showing at least one ping somewhere on the country-wide system 300 days per year.

Each plaza was studied separately. **Table 2-9** shows how many devices were captured at each plaza as well as the number of trips. Note, due to the configuration of the nearby interchanges, the North Beckley zone was smaller (2.4 km) in length compared to the other study area zones (4.7 km or longer) which, in addition to the plaza having lower traffic volumes, likely resulted in a smaller sample size. Due to its shorter study area and proximity to other activity generators, North Beckley is expected to have less reliable results than the other three toll plazas.

Table 2-9 Sample Size from StreetLight

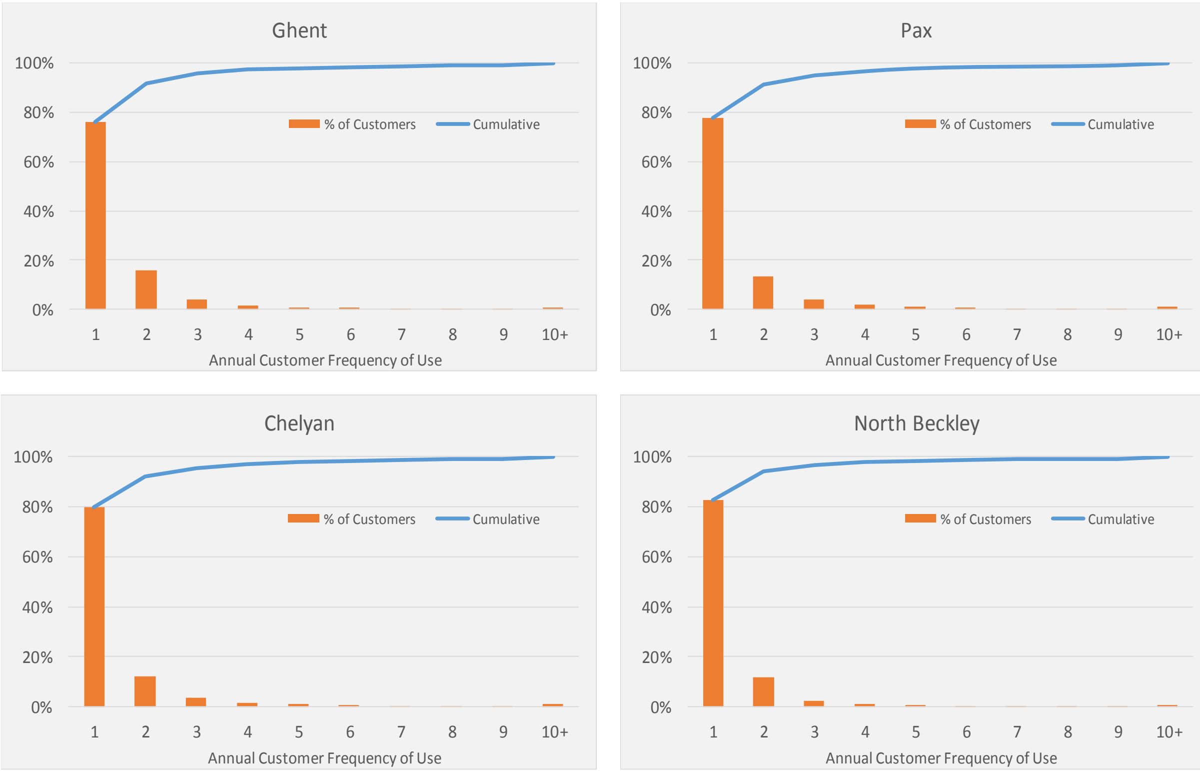
Plaza	Number of Devices	Number of Trips
Plaza A – Ghent	13,589	21,462
Plaza B – Pax	5,617	8,680
Plaza C – Chelyan	5,218	7,740
North Beckley	1,810	2,553
Total	**26,234**	**40,435**

Source: StreetLight Data

Figure 2-19 displays the frequency distribution profiles derived from the StreetLight dataset. It was found that most travelers were very infrequent users, with nearly 80% of customers making only one trip per year. About 96% of travelers make less than 4 trips per year. The frequency distribution was found to be very similar at all toll plazas.

Also note, as a secondary check, the data used for the sample was expanded to include less reliable devices which increased the sample size to over 200,000 observations for each mainline plaza and over 62,000 for North Beckley. The frequency of use was very similar to the dataset constrained to the highly reliable devices.

Figure 2-19 Frequency of Use from StreetLight Sample



Source: StreetLight Data and CDM Smith analysis

2.6 Major Capital Improvement Projects

Governor Jim Justice's ***Roads to Prosperity*** program contains hundreds of transportation improvement projects across the entire state, worth over $2.6 billion. This program will have a significant beneficial impact on the state economy. While the program includes an important widening project on the Turnpike at Beckley and improvements to other roads that lead to the Turnpike, there are no major improvement projects on directly competing roadways. As a result, the ***Roads to Prosperity*** program is expected to have a relatively-small, positive impact on the competitive advantages of the Turnpike.

The ***Roads to Prosperity*** program and the 2010 state transportation plan identify the following projects on routes that have the potential to positively affect traffic on the Turnpike:

- East Beckley Bypass between CR 8 and Corridor L: construct a new 4.5 miles four-lane road
- I-64 Widening from Barboursville to the West Virginia / Kentucky State Line: construct 18 miles of additional lane in both directions
- WV 10 upgrades
- MacCorkle Avenue Improvements
- U.S. 60 upgrades from Chelyan to Montgomery
- I-77 upgrades from Tunnel to milepost 9

2.7 Conclusion

Travel on the Turnpike has been steady for several decades. The roadway serves as an important direct interstate connection between the Midwest and the southeastern United States as well as an important conduit for nearby residents. The Great Recession appears to have had minimal effect on traffic in the 2008-2010 timeframe. A large toll increase of approximately 50-60% in 2009 did not have a significant impact on transactions but a noticeable increase in revenue. The toll classification system uses multiple criteria (axles, height, and vehicle type) while the payment options offer significant discounts for customers using E-ZPass.

Passenger car travel on the Turnpike peaks during the summer travel season whereas commercial traffic is steady most of the year. The three mainline plazas have roughly equal numbers of transactions per year (approximately 10 million in 2016) whereas North Beckley has about half that amount (approximately 5.5 million in 2016). Many of the trips on the Turnpike travel the full length, based on available E-ZPass data.

Class 1 customers (2-axle passenger cars) dominate transactions on the Turnpike at 75% while Class 8 customers (5-axle trucks or 18 wheelers) make up another 18% of transactions. PC customers (Classes 1-4) make up about 51% of total revenue and CV customers (Classes 5-10) make up about 49% of total revenue. Payment by PC customers is about 72% cash, 18% WV E-ZPass, and 10% Non-WV E-ZPass. Payment by CV customers is about 25% cash, 16% WV E-ZPass, and 59% Non-WV E-ZPass.

Frequency of use is very low, particularly for PC customers. About half of WV E-ZPass PC customers have 10 or fewer transactions in a year. Roughly 95% of all Non-WV E-ZPass PC customers have 10 or fewer transactions a year. Smart phone and other location device data indicate that about 96% of all customers pass through individual plazas less than four times per year.

Approximately 80% of revenue collected via transponder comes from Non-WV E-ZPass customers. A large portion of this revenue comes from CV transactions. The state of residence of cash customers is not known, however it is reasonable to assume that most cash customers are from out of state as indicated by SP survey responses.

While the major capital improvement program, ***Roads to Prosperity***, is expected to have a large impact on the state economy, improve the condition of the state's infrastructure and relieve congestion, there are no major increases in capacity planned on competing roadways that would adversely influence the competitive advantages of the Turnpike.

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Chapter 3

Stated Preference Survey

3.1 Introduction

CDM Smith contracted Resource Systems Group, Inc. (RSG) to conduct a stated preference (SP) survey of existing Turnpike customers. SP surveys provide the ability to estimate demand models to predict how travelers are likely to utilize the Turnpike under different pricing scenarios, which is difficult to assess through conventional survey techniques or existing travel patterns alone. In this case, the SP survey presented hypothetical scenarios within the context of the respondent's actual travel, and asked respondents to choose from a set of possible options. RSG with help from CDM Smith and input from WVPA, designed the survey, administered it to current customers, and evaluated the results.

Potential changes in Turnpike policy include increasing toll rates and providing a revised Class 1 flat fee program. The primary objective of the SP survey was to understand how toll payment and travel behavior will likely change if the revised flat fee program is offered. A detailed report covering the SP survey was generated. This chapter contains a summary of that report.

3.2 Survey Approach

The questionnaires collected data on respondents' general and most recent travel behaviors (also referred to as "revealed preferences"), presented respondents with information about the proposed changes to payment amounts and options on the Turnpike, and used SP experiments to evaluate behavioral response for the potential new payment options on the Turnpike.

The survey instrument was a computer-assisted self-interview technique developed using RSG's proprietary software. The customized survey software adapted to respondents' previous answers by modifying question wording and SP tradeoff values. These dynamic survey features provide an accurate and efficient means of data collection and allow the presentation of realistic future conditions that correspond with the respondents' reported experiences. The software was customized for online administration to targeted audiences in the study region. Respondents were recruited to take the survey through the following methods:

- Invitation card distributed to drivers at selected toll gantries on the Turnpike
- WVPA customer and public outreach
- Out-of-state E-ZPass customer and public outreach

3.3 Survey Questionnaire

The survey was designed to collect information about a recent trip that a respondent made on the Turnpike and to find out how travelers might alter their behavior given the proposed changes to the Turnpike toll payment structure and costs. The questionnaire contained questions grouped into six main sections:

- Qualification Questions
- General Travel Questions
- Trip Characteristic Questions
- Stated Preference Questions
- Debrief and Opinion Questions
- Demographic Questions

A complete set of survey questions as they appeared to respondents is included in a detailed report on the survey.

3.3.1 Qualification Questions

Initially, survey candidates were asked several questions, including if they had made a trip on the Turnpike within the past 12 months, to determine if they were eligible to participate in the survey. To qualify, the candidates must have also traveled on any part of the Turnpike between Charleston and Princeton. Only customers traveling in a personal vehicle (Class 1) qualified. Respondents who reported no recent trips that met the above criteria were disqualified from the survey.

3.3.2 General Travel Questions

Qualified respondents were asked a series of questions about their travel behavior on the Turnpike, including whether they had made more than five trips per month in the past year to determine if subsequent survey questions should be asked using a monthly (frequent users) or annual (infrequent users) timeframe. (As noted later, when the survey results were analyzed, “frequent” and “infrequent” were redefined due to the resulting behavioral differences at very low frequency of use.) Respondents were then asked about the types of trips they made on the Turnpike to determine how many trips of each trip purpose they had made in the past month or year.

Next, respondents were asked a series of questions about their use of a transponder for electronic toll collection (ETC) which included if they owned a WV E-ZPass, a transponder from a state other than West Virginia, or did not own any transponders. Respondents who did not own a transponder then indicated their reasons for not having one in their car. Respondents who owned a WV E-ZPass were asked whether they paid an annual or quarterly flat fee for unlimited use of at least one toll plaza on the Turnpike under Personal Discount Plan 1; paid their tolls on a trip-by-trip basis either by cash, WV E-ZPass, or Non-WV E-ZPass; or were unsure of their payment for tolls on the Turnpike. Those who paid a flat fee were shown a map of all toll plazas on the Turnpike and asked to indicate which plazas they paid tolls for with this flat fee program. To conclude this section on electronic tolling, all respondents who owned a transponder were asked how many vehicles were associated with it.

3.3.3 Trip Characteristic Questions

Qualified respondents were then asked questions related to their most recent trip that used any part of the Turnpike. They were asked to think of the trip as their "reference trip" and were instructed to think of the one-way portion of that trip rather than the entire round trip. They were asked a series of questions regarding the specific details of their reference trip, including:

- Trip purpose
- Trip origin or destination outside of West Virginia (if appropriate)
- Highway entrance and exit interchanges
- Tolls paid (in addition to those paid with a flat fee plan, if applicable)
- Reason for not paying tolls, if none were paid
- Toll payment method and amount paid

3.3.4 Stated Preference Questions

After completion of the trip characteristics section of the questionnaire, a subset of respondents was provided with details about the proposed new payment options on the Turnpike and asked to answer a series of SP questions.

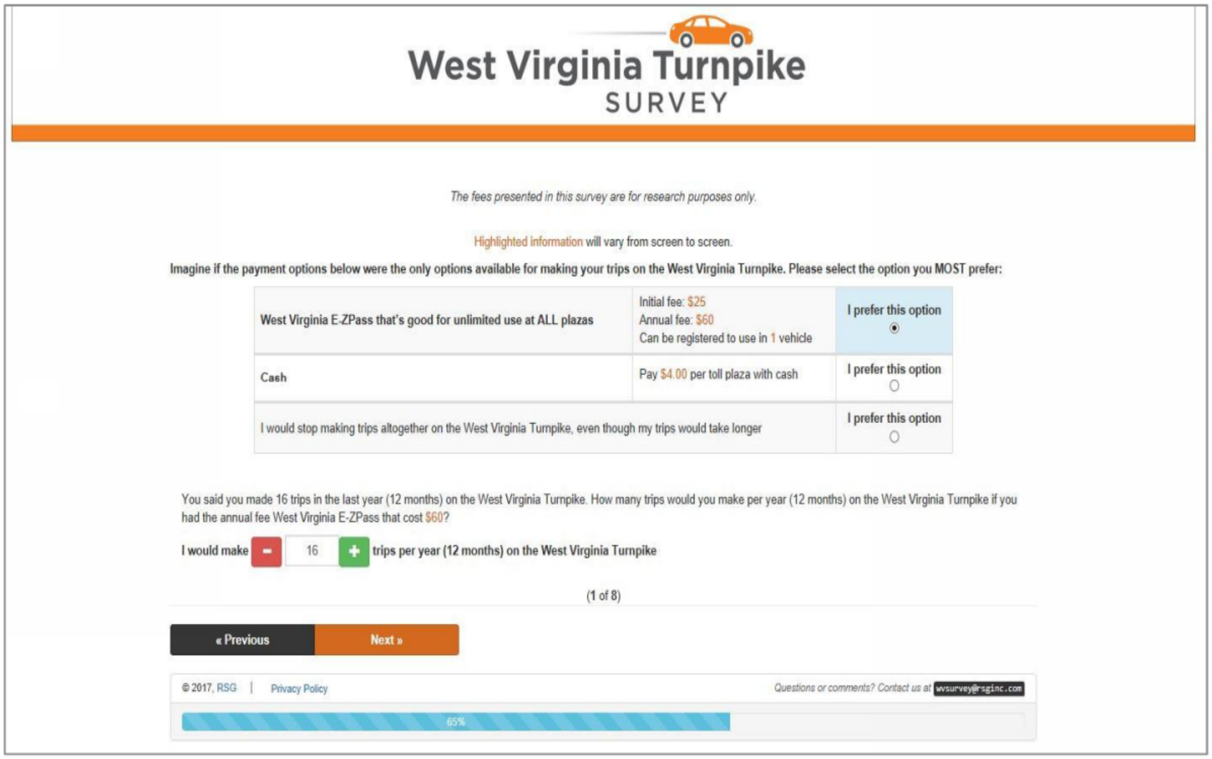
Respondents who already participated in the existing Class 1 flat fee program were not shown the SP questions since the proposed revised program would resemble their current payment schedule at a reduced price. Instead, these respondents were shown one hypothetical scenario of the revised flat fee program in which the annual cost for unlimited use of all three primary toll plazas on the Turnpike was a random price ranging from $8 to $75. Because respondents might change their trip rates under the revised flat fee program, they were shown the number of trips they had made on the Turnpike within the past year or month and prompted to adjust that number to report how many trips they would make within that timeframe if the revised flat fee program were available.

All respondents not currently enrolled in the existing flat fee program were shown instructions for the SP exercises. Respondents were shown a set of eight SP scenarios that included three travel alternatives for making their reference trip in the future. These alternatives were described by attributes such as initial issuance fee, annual flat fee, number of vehicles allowed under one transponder registration, and per plaza trip-by-trip toll rates. The values of the attributes varied across the eight questions, and respondents were asked to select the alternative they preferred most under the conditions that were presented. Respondents were presented with the following alternatives for their trips in the future:

- **Alternative 1 WV E-ZPass Flat Fee:** Respondent could use the revised flat fee program providing unlimited use at all Turnpike toll plazas. This alternative contained attributes for an initial issuance fee, annual flat fee, and number of vehicles that could be registered with the account.
- **Alternative 2 Cash Per Plaza:** Respondent could pay a given amount per toll plaza using cash, or a transponder from another state if the respondent indicated they owned one.
- **Alternative 3 Stop Making Turnpike Trips:** Respondent could stop making trips on the Turnpike altogether.

For the first two SP scenarios, respondents who chose Alternative 1 or Alternative 2 were shown a follow-up question about how their trip frequency on the Turnpike could change under the conditions presented. These respondents were shown the number of trips they had made on the Turnpike in the past year or month and prompted to adjust that number as needed to report how many trips they would make in that same timeframe. The remaining six SP scenarios did not include this trip suppression/induction question. An example screen shot of the survey is shown in **Figure 3-1**.

Figure 3-1 Sample Survey Screen



Source: WV Turnpike SP Survey

The attribute values presented in each scenario varied according to an experimental design. Respondents were presented with different payment structures and costs and could demonstrate their travel preferences across several scenarios.

3.3.5 Debrief and Opinion Questions

After completing the eight SP scenarios (or the single hypothetical scenario for those already participating in the existing Class 1 flat fee program), all respondents answered a series of questions to assess the underlying rationale for their choices and to identify any potential strategic bias in their responses. Respondents who were shown the SP questions and never chose the revised flat fee program alternative were asked to select their primary reason for this, while those who chose this option in at least one scenario were prompted to select their primary reason for choosing it. Next, all respondents indicated their opinion of the proposed changes to the payment options on the Turnpike. Those who indicated that they were "strongly" or "somewhat" in favor of the changes were then asked to indicate the primary reason for their support, while those who were "strongly" or "somewhat" opposed were asked to indicate the primary reason for their opposition.

3.3.6 Demographic Questions

In the final section of the survey, demographic information was collected to classify respondents, identify possible behavioral differences among demographic characteristics, and confirm that the sample contained a diverse cross section of drivers that travel in the study region. Demographic information collected included zip code, gender, age, employment status, household size, vehicle ownership, and 2016 pre-tax household income. Finally, respondents were given the opportunity to win one of 20 $100 gift cards for their participation and provide their comments about the survey and proposed toll policies.

3.4 Survey Administration

The focus of the survey administration plan was to produce a generally representative sample of a diverse cross section of Turnpike customers in West Virginia and surrounding states. The sampling plan was designed to include a sufficient range of customers from different trip purposes, household incomes, and geographies to accurately reflect any behavioral differences in the resulting discrete choice models. Three methods were used to recruit potential respondents to the survey website:

- Invitation card distribution to customers at selected toll gantries on the Turnpike
- WVPA customer and public outreach effort to distribute a link to the survey via e-mail to customers, on their website, and through poster boards displayed at rest stops along the corridor
- Out-of-state E-ZPass customer and public outreach

Survey administration began on September 19, 2017 and concluded on October 20, 2017. A total of 6,846 customers completed the SP survey during this time. The administration methods and number of complete surveys by survey type are presented in **Table 3-1**.

Table 3-1 Responses by Recruitment Source

Data Source	Completed Surveys
Invitation Card Distribution	1,750
WVPA Customer and Public Outreach	3,288
Out-of-state E-ZPass and Public Outreach	1,808
Total	**6,846**

Source: WV Turnpike SP Survey

3.4.1 Invitation Card

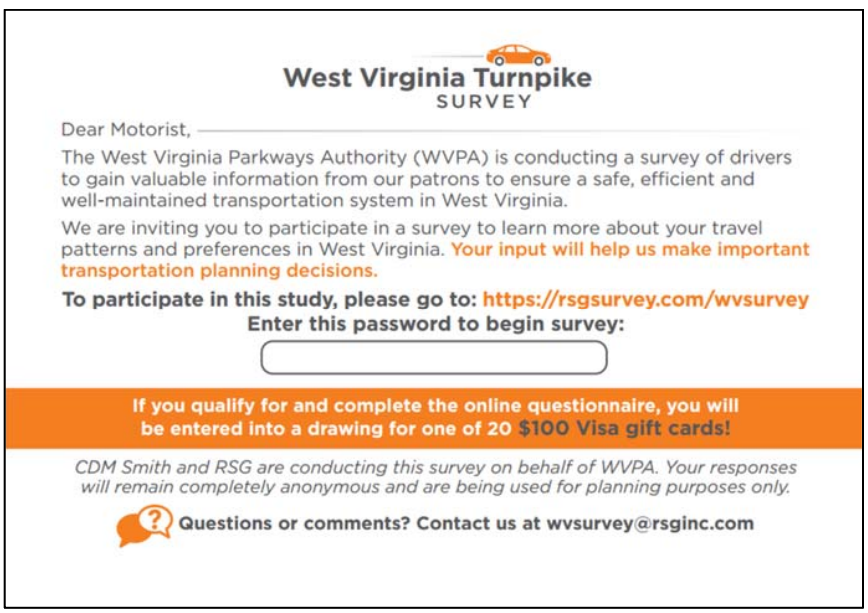
The consultant team worked closely with the WVPA to distribute approximately 50,000 invitation cards at three of the four toll collection points along the Turnpike. The invitations were distributed to cash-paying customers by Turnpike toll collection staff. The toll collection staff were instructed to distribute the invitations to personal vehicles (Class 1) only, and to distribute one card to each driver before they collected payment.

To minimize the number of customers who might have otherwise received more than one invitation card, distribution of the cards was limited to the northbound lanes at Ghent Plaza, the southbound lanes at Chelyan Plaza, and the North Beckley southbound entrance-ramp. The invitations were handed out in measured blocks over a period of four days (two weekdays and one weekend) to obtain a roughly proportional sample of weekday and weekend traffic from each of the sampled toll collection points.

The invitation cards included information about the study, a link and password to access the survey, information about the incentive, and an email address so respondents could obtain assistance or additional information about the research. **Figure 3-2** shows a sample of the front and back of the invitation cards.

Figure 3-2 Invitation Card Sample

Source: WV Turnpike SP Survey



Source: WV Turnpike SP Survey

Table 3-2 shows the number of invitations distributed, the number of completes received, and the overall response rate from each of the sampled plazas. Because of a compressed administration schedule, the distribution plan was adjusted after the cards had been printed, and a single batch of invitations originally designed for Pax Plaza was divided on-site for distribution between Ghent and Chelyan plazas as noted in the table.

Table 3-2 Invitation Card Distribution and Completes by Toll Plaza

Plaza/Ramp	No. of Invitations	Completed	Response Rate
Ghent Plaza - Northbound Lanes	22,002	902	4.1%
Chelyan Plaza - Southbound Lanes	20,875	653	3.1%
North Beckley On Ramp	1,959	57	2.9%
Ghent or Chelyan Plaza	5,163	138	2.7%
Total	**49,999**	**1,750**	**3.5%**

Source: WV Turnpike SP Survey

3.4.2 WVPA Customer and Public Outreach

A customized weblink was included in three outreach efforts to recruit WV E-ZPass customers and other customers to participate in the survey. The weblink was distributed and shared using the following outreach methods.

- **WV E-ZPass Email Outreach:** The WVPA distributed invitations via email to over 31,000 WV E-ZPass account holders. The email invitations contained a brief description of the research and prize drawing incentive, a weblink to access the survey, and an email address where recipients could contact the consultant team with any questions about the study.

- **WVPA Website:** The WVPA posted the weblink along with basic information about the survey on their website where visitors could participate in the survey.

- **Poster Boards:** Ten poster boards were placed at travel plazas, a rest area, and at the Tamarack arts and crafts retail outlet along the Turnpike. The poster boards contained information about the survey, a survey weblink, and a QR code respondents could scan with their smartphones to access the survey.

A total of 3,288 completed surveys were collected from the WVPA outreach efforts. Because the same web link was used for all three methods, it is not possible to provide an exact number of completed surveys by each method; however, it was clear that the e-mail outreach facilitated most of these completes.

3.4.3 Out-of-State and Public Outreach

With assistance from the WVPA, the consultant team worked alongside external departments of transportation and turnpike operations from states surrounding West Virginia. In all, three external organizations assisted with administering the survey.

- **Virginia E-ZPass Email Outreach:** The Virginia Department of Transportation distributed email invitations to a subset of Virginia E-ZPass customer accounts where a transaction had been made on WV Turnpike within the previous 30 days. The email invitations contained a brief description of the research and prize drawing incentive, a weblink to access the survey, and an email address where recipients could contact the consultant team with any questions about the study. The invitations were sent to 10,500 customer accounts, which yielded 1,522 completed surveys – a response rate of 14.4%.

- **Pennsylvania Turnpike Website:** The Pennsylvania Turnpike posted a custom weblink and basic information about the survey on their website for visitors. This method yielded 116 completed surveys.

- **Ohio Turnpike Newsletter:** The Ohio Turnpike included a link and description of the survey in their September e-newsletter that was sent to Ohio E-ZPass customers. This method yielded 170 completed surveys.

3.5 Data Analysis

This section contains summary tabulations and statistics for select survey questions. An appendix to the SP survey report contains a complete set of survey tabulations for each question. The data were screened for outliers before final survey analysis and model estimation was completed.

3.5.1 Outliers

A total of 6,846 customers completed the SP survey. The number of records was reduced to 6,438 after completing logic checks and outlier analysis during the model estimation work. The following conditions were applied to determine which respondents to exclude from the final analysis; the categories listed are not mutually exclusive, so a respondent's data could have been disqualified for more than one of these reasons. A total of 408 respondents were excluded from the dataset based on these criteria.

- Respondents who do not own a WV E-ZPass and indicated in the SP questions they would no longer make any trips on the Turnpike when the per-plaza toll cost shown was the current rate ($2.00) or less (214 respondents).

- Respondents who indicated they would pay a specific toll to use the Turnpike but suppressed 100% of their trips in the embedded follow-up trip suppression question (38 respondents).

- Respondents who indicated they made 720 or more trips per year on the Turnpike, representing the top 2% of annual trip frequencies (142 respondents).

- Respondents who indicated in the suppression/ induction questions that they would make at least 400% or more trips per year than they currently make on the Turnpike (25 respondents).

Note that since these exclusion categories are not mutually exclusive, the number of exclusions will add up to more than the number of respondents excluded.

3.5.2 Survey Results

The descriptive analysis of the survey data presented in this section is based on the final dataset of 6,438 responses and is divided into five sections: 1) general travel behavior; 2) recent trip characteristic analysis; 3) SP analysis; 4) debrief and opinion analysis; and 5) demographic analysis.

General Travel Behavior

Respondents were classified into frequent or infrequent users of the Turnpike at the outset of the questionnaire. This permitted subsequent questions about general travel behavior to be assigned a monthly (past 30 days) or annual (past 12 months) reference time frame. Frequent users were defined as those who made six or more trips per month on the Turnpike, while infrequent users were defined as individuals who made five or fewer monthly trips on the Turnpike. (As noted later, when the survey results were analyzed, “frequent” and “infrequent” were redefined due to the resulting behavioral differences at very low frequency of use.) Twenty percent of respondents were classified as frequent users (n=1,265) and 80% were classified as infrequent users of the Turnpike (n=5,173).

All respondents were then asked to indicate all the types of trips they made on the Turnpike over the past 30 days or 12 months, depending on their assigned time frame. **Table 3-3** shows the types of trips frequent and infrequent users made on the Turnpike. Overall, frequent users were much more likely to travel for work-related purposes, while most infrequent users drove on the Turnpike for social or recreational trip purposes. Since respondents could choose more than one trip purpose during the survey, percentage totals exceed 100%.

Table 3-3 Trip Purposes on Study Corridor by Frequency of Use

Purpose	Frequent Users		Infrequent Users		Total	
	Count	Percent	Count	Percent	Count	Percent
Go to/from work	517	41%	194	4%	711	11%
Business-related travel	521	41%	1,157	22%	1,678	26%
Go to/from school	115	9%	314	6%	429	7%
Go to/from the airport	122	10%	149	3%	271	4%
Shopping	465	37%	584	11%	1,049	16%
Social or recreational	692	55%	4,061	79%	4,753	74%
Other personal business	589	47%	1,186	23%	1,775	28%
Total	**1,265**	-	**5,173**	-	**6,438**	-

Source: WV Turnpike SP Survey
Note: Percentage totals exceed 100% due to respondents being able to choose more than one trip purpose during survey.

Primary market segmentation was defined by electronic toll collection (ETC) device ownership. A plurality of respondents (45%) indicated they have a WV E-ZPass to pay for tolls on the Turnpike. Of these customers, 38% (n=1,090) pay an annual or monthly flat fee at one or more toll plazas. Twenty-nine percent of all respondents do not have any device and pay their tolls with cash, and 26% possess an ETC device from another state. Approximately 1% of the sample (n=72) owns a WV E-ZPass and an ETC device from another state and are considered WV E-ZPass customers for the purposes of this analysis. The proportion of respondents by market (payment method) varies from the proportion of all customers using the Turnpike, because of the differential success in recruiting. However, sample size was large enough to produce reliable models of payment choice for each segment.

Table 3-4 shows the purpose of trips made on the Turnpike by market segment. Nearly three-quarters of respondents had made a social or recreational trip on the Turnpike in the past month or year. WV E-ZPass customers were most likely to make a trip to or from work.

Table 3-4 Trip Purpose by Market Segment

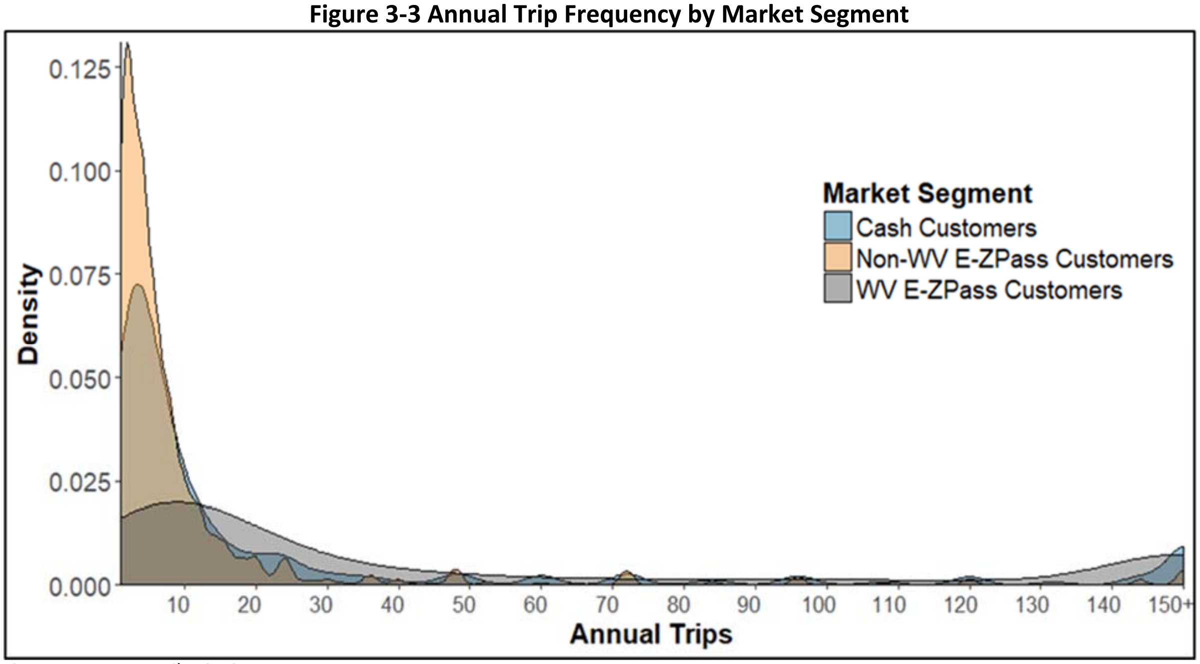
Purpose	Cash Customers		Non-WV E-ZPass Customers		WV E-ZPass Customers		Total	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Go to/from work	127	7%	55	3%	529	18%	711	11%
Business-related travel	387	21%	376	22%	915	32%	1,678	26%
Go to/from school	141	8%	88	5%	200	7%	429	7%
Go to/from the airport	51	3%	16	1%	204	7%	271	4%
Shopping	254	14%	50	3%	745	26%	1,049	16%
Social or recreational	1,426	76%	1,268	75%	2,059	72%	4,753	74%
Other personal business	437	23%	253	15%	1,085	38%	1,775	28%
Total	**1,877**	-	**1,692**	-	**2,869**	-	**6,438**	-

Source: WV Turnpike SP Survey
Note: Percentage totals exceed 100% due to respondents being able to choose more than one trip purpose during survey.

For each trip purpose selected, respondents were asked to indicate the number of trips they had made on the Turnpike within their assigned time frame. Trip totals for each purpose were summed and expanded into an annual number of trips on the Turnpike for each respondent. **Figure 3-3** shows Annual Trip Frequency by Market Segment distribution.

WV E-ZPass customers had the highest average and median number of trips, while Non-WV E-ZPass customers tended to make the least. The median number of annual trips for all respondents was 8 trips, and the average was 51 trips.

Figure 3-3 Annual Trip Frequency by Market Segment



Source: WV Turnpike SP Survey

Recent Trip Characteristics

Respondents were next asked a short series of questions about their most recent trip on the Turnpike. Approximately 58% of respondents reported their most recent trip was made for social or recreational purposes. The second highest trip purpose of 15% was for other personal business. Only one percent of respondents reported their most recent trip was made for travel to/from the airport.

Respondents selected the Turnpike entrance (ingress) and exit (egress) ramps they used during their most recent trip. Most respondents exited and entered the Turnpike north of Exit 96. The next most frequently used ramps were at I-64 and South of Exit 9.

The total number of trips that passed through each toll plaza was inferred by respondents' reported entrance and exit ramps. Approximately three-quarters of respondents made a trip that passed through Chelyan and Pax Plaza, while 58% passed through Ghent Plaza. Only 4% of respondents passed through the gantries at North Beckley.

The total number of plazas that a respondent passed through on a single one-way trip cannot be greater than three. Fifty-eight percent of cash-paying customers passed through three plazas, while only 41% of WV E-ZPass customers did the same. Six percent of all respondents did not pass through any plazas during their most recent trip on the Turnpike.

All respondents, including the 1,090 respondents who paid an annual or quarterly flat fee, were asked if they paid any per-plaza tolls on the Turnpike during their most recent trip. Overall, 86% of respondents said they paid a toll on their most recent trip. This percentage does not match the total percentage of respondents whose trips passed through at least one plaza according to individual entrance and exit ramp selection. The discrepancy is likely due to respondents who have less familiarity with the road and may have estimated their entrance and exit ramp locations.

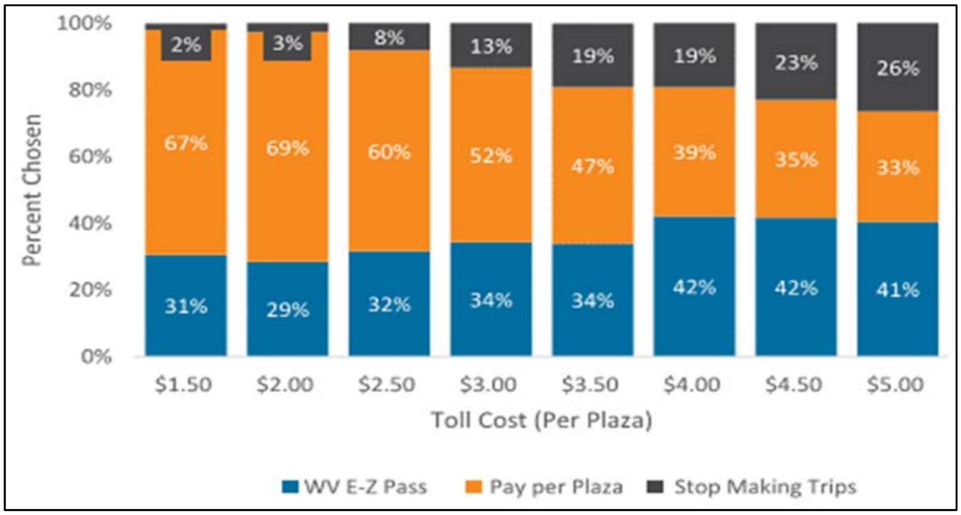
Stated Preference Results

The SP section of the survey was used to ascertain responses to different travel alternatives. In each SP scenario, respondents were presented alternatives for making a future trip. The 5,348 respondents not enrolled in the current flat fee program were shown eight SP trade-off experiments, each containing three alternatives. Out of a total of 42,784 experiments shown, 15,180 chose to enter the revised flat fee program; 21,523 selected to pay per plaza using cash, WV E-ZPass, or Non-WV E-ZPass; and 6,081 selected to stop making trips.

Across the eight SP experiments shown to each respondent, the attributes of each alternative (such as the per-plaza toll cost and annual flat fee) varied from one experiment to the next to assess the attributes' effects on respondents' payment preferences. **Figure 3-4** shows how respondents' choices of alternatives changed as the per-plaza toll cost increased. In general, as the toll amount increased, respondents became less likely to select pay per plaza and would either choose the flat fee program or stop making trips on the Turnpike. For instance, when the per-plaza toll cost was $1.50, 67% of respondents selected pay per plaza, while at $5.00, only 33% of respondents chose to pay per plaza.

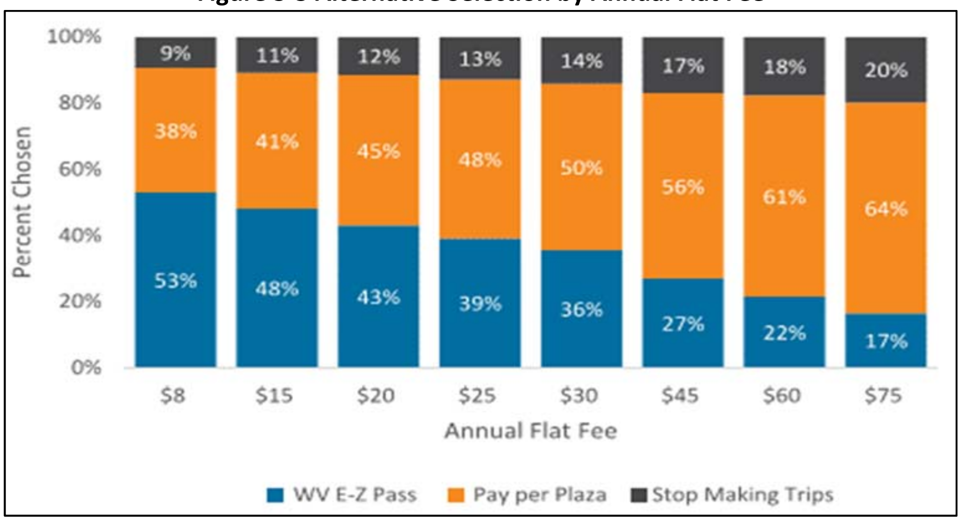
Similarly, **Figure 3-5** shows that as the cost of the annual flat fee increased, respondents became less likely to select the flat fee program and more likely to select pay per plaza. Overall, Figure 3-4 and Figure 3-5 show that respondents behaved in an intuitive and rational manner during the SP exercises.

Figure 3-4 Alternative Selection by Per-Plaza Toll Cost



Source: WV Turnpike SP Survey

Figure 3-5 Alternative Selection by Annual Flat Fee



Source: WV Turnpike SP Survey

Debrief and Opinion Analysis

After completing the SP scenarios, respondents were asked to answer a series of debrief and opinion questions to understand the underlying reasons for their choices in the eight SP questions. The 60% of respondents who selected the revised flat fee program at least once in the SP scenarios (n=3,214) were asked to indicate their primary reason for doing so. Approximately 48% did so because of the "lower cost than paying with cash," and 19% did so because they agreed with the statement "I travel on toll roads in West Virginia enough that it makes sense." Only eight percent of respondents did so because it is a "lower cost than paying with my out-of-state transponder."

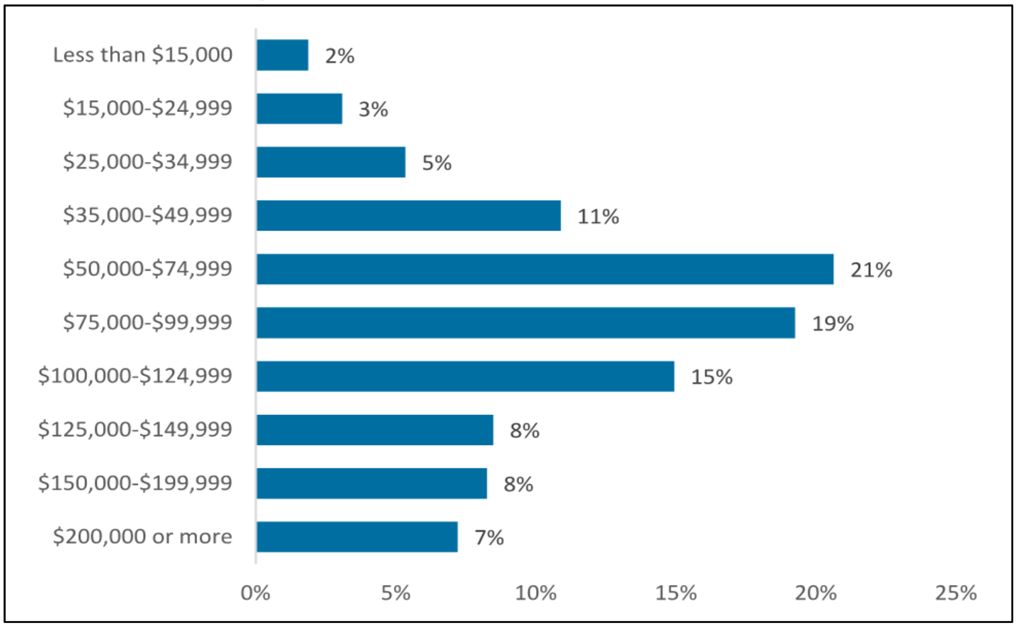
The 40% (n=2,134) of respondents who never selected the revised flat fee program in the SP scenarios were asked to indicate their primary reason for not doing so. Approximately 61% of these respondents did so because they “don’t travel on toll roads in West Virginia often enough,” and 17% because they “don’t want to have two transponders.”

Demographic Analysis

Demographic information was collected to ensure a diverse sample of drivers. Respondents provided their home ZIP Code, which was used to determine state of residence. A plurality (43%) of respondents were West Virginia residents and 22% were Virginia residents. The smallest number of respondents were from South Carolina, Kentucky, and Pennsylvania with only two percent each.

Of the 6,438 respondents, 59% were male. Forty-six percent lived in a household with two vehicles and 25% lived in household with three vehicles. Forty-nine percent were employed full time and 32% were retired. **Figure 3-6** shows the income group distribution for the 82% of the sample who reported their income. The median 2016 household income category before taxes was $75,000-$99,999.

Figure 3-6 2016 Household Income Before Taxes



Source: WV Turnpike SP Survey

3.6 Model Estimation

The primary objective of the SP survey was to estimate market shares for proposed new payment options on the Turnpike, as well as changes in trip rates that may occur because of the new payment options. These market share estimates support revenue projections under the proposed new payment policies. The eight choice observations for each respondent were compiled into a dataset with 42,784 observations to support the market share estimations.

Separate regression models were estimated to forecast trip suppression rates. The trip suppression models were fitted with data from 2,099 respondents who selected the pay tolls per trip/plaza - using cash, WV E-ZPass, or Non-WV E-ZPass in the first or second SP scenario. The suppression models were fitted with a total of 3,056 observations to support estimates of overall trip reductions based on proposed per plaza toll increases.

3.6.1 Discrete Choice Model

Statistical analysis and discrete choice model estimation were conducted using the SP survey data. The statistical estimation and specification testing were completed using a conventional maximum likelihood procedure that estimated coefficients for a set of multinomial logit (MNL) models. The MNL models were used to identify systematic differences in preference heterogeneity—for example, the difference in travel behavior at different annual trip frequencies. The model coefficients provide information about the respondents' sensitivities to the attributes that were tested in the trade-off scenarios and can be used to calculate market shares for travelers in the study corridor.

Specification and Segmentation

Respondents were presented with three alternatives in the SP scenarios. WV E-ZPass customers who currently pay a flat fee for unlimited use of at least one plaza on the Turnpike were not shown the SP scenarios. All other travelers were presented with the following alternatives:

- Join the revised flat fee program for unlimited trips on the WV Turnpike
- Continue to pay tolls per trip with the respondent's current payment method (cash, WV E-ZPass, or Non-WV E-ZPass)
- Stop making trips on the Turnpike altogether

The MNL model estimates a choice probability for each alternative presented in the SP trade-off exercises. The alternatives are represented in the model by observed utility equations of the form:

$$U1 = \beta 1\ X1 + \beta 2\ X2 \ldots + \beta n\ Xn$$

Where each X represents a variable specified by the researcher and each β is a coefficient estimated by the model that represents the sensitivity of the respondents in the sample to the corresponding variable.

To achieve the best model outcomes, several utility equation structures were tested using different variables from the collected data. In addition to costs presented in the SP experiments, tested variables included trip frequency, current payment method, opinion of the changes to payment options on the WV Turnpike, and income. These variables were introduced sequentially to test potential interactions with cost coefficients and to determine whether respondents' trip or personal characteristics significantly influenced their choices in the SP scenarios.

After reviewing the significance of each variable, the final model specification was chosen based on model fit, the intuitiveness and reasonableness of the model coefficients, and the expected application of the model results.

The final model specification includes variables for the annual flat fee, issuance fee, number of vehicles that can be registered with an annual pass, and per plaza toll cost, with segmentation based on trip frequency and current payment method (cash, WV E-ZPass, or Non-WV E-ZPass). The model specification showed distinction between those who make three or more trips per year and those who make two or less and the definition of frequent and infrequent were refined. **Table 3-5** presents the segments used in the final model specification.

Table 3-5 Model Segmentation

Segment Name	Payment Method	Annual Trip Frequency	Residence	Count	Percent
Non-WV E-ZPass ETC - Infrequent	Non-WV E-ZPass	1 or 2 Trips	Not WV	524	10%
Non-WV E-ZPass - Frequent	Non-WV E-ZPass	3+ Trips	Not WV	1,168	22%
Cash - Infrequent	Cash	1 or 2 Trips	Any State	425	8%
WV Residents Cash - Frequent	Cash	3+ Trips	WV	597	11%
Non-WV Resident Cash - Frequent	Cash	3+ Trips	Not WV	855	16%
WV E-ZPass	WV E-ZPass	Any	Any	1,779	33%
Total	-	-	-	**5,348**	**100%**

Source: WV Turnpike SP Survey

In the frequent market segments, the toll cost coefficient was interacted with annual trip frequency to identify the relationship between frequency of use on the Turnpike and toll cost sensitivity. For cash and Non-WV E-ZPass customers, separate models were estimated for frequent and infrequent users of the Turnpike, where frequent users are defined as making at least three trips on the Turnpike annually. In the models estimated for frequent users and WV E-ZPass customers, multiplying toll cost by the annual trip frequency raised to a power of lambda, a parameter estimated by the model, was found to provide the greatest improvement in model fit, and indicates that sensitivity to toll prices increases as trip frequency increases, though the rate is less than linear. An alternative specific constant is included on the pay tolls per trip and stop making trips altogether alternatives to capture the utility (or disutility) for the alternatives that cannot be attributed to any other variables in the model.

Coefficient Estimates

The results of the final MNL models are presented for each segment in **Table 3-6** through **Table 3-11** below. These tables contain coefficient values, robust standard errors, robust t-statistics, and general fit statistics for the models.

Table 3-6 MNL Model Results: Non-WV E-ZPass – Infrequent Users

Coefficient	Alternatives			Coefficient Values			
	WV E-ZPass	Toll Per Plaza	Stop Making Trips	Value	Robust Std. Error	Robust T-Test	Robust P-Value
Annual Fee	X			-0.0515	0.0108	-4.78	0
Issuance Fee	X			-0.0422	0.00936	-4.51	0
Vehicles	X			0.116	0.0597	1.94	0.05
Toll per Plaza		X		-0.935	0.0474	-19.7	0
Alternative Specific Constant - Toll per Plaza		X		5.33	0.2840	18.72	0
Alternative Specific Constant - Stop Making Trips			X	-0.0873	0.2460	-0.35	0.72

Model Statistics	
Number of Estimated Parameters	6
Number of Observations	4,192
Number of Individuals	524
Null Log-likelihood	-4,605.383
Final Log-likelihood	-1,738.625
Adjusted Rho-square	0.621

Source: WV Turnpike SP Survey

Table 3-7 MNL Model Results: Non-WV E-ZPass – Frequent Users

Coefficient	Alternatives			Coefficient Values			
	WV E-ZPass	Toll Per Plaza	Stop Making Trips	Value	Robust Std. Error	Robust T-Test	Robust P-Value
Annual Fee	X			-0.0352	0.00234	-15.05	0
Issuance Fee	X			-0.0272	0.00258	-10.54	0
Vehicles	X			0.1	0.0167	6.01	0
Toll per Plaza		X		-0.546	0.0315	-17.3	0
Alternative Specific Constant - Toll per Plaza		X		3.39	0.13	26.13	0
Alternative Specific Constant - Stop Making Trips			X	-1.03	0.101	-10.21	0
Lambda - Annual Number of Trips		X		0.173	0.0182	9.5	0

Model Statistics	
Number of Estimated Parameters	7
Number of Observations	9,344
Number of Individuals	1,168
Null Log-likelihood	-10,265.433
Final Log-likelihood	-6,189.413
Adjusted Rho-square	0.396

Source: WV Turnpike SP Survey

Table 3-8 MNL Model Results: Cash – Infrequent Users

Coefficient	Alternatives			Coefficient Values			
	WV E-ZPass	Toll Per Plaza	Stop Making Trips	Value	Robust Std. Error	Robust T-Test	Robust P-Value
Annual Fee	X			-0.0468	0.00579	-8.09	0
Issuance Fee	X			-0.0424	0.00576	-7.37	0
Vehicles	X			0.104	0.0348	2.98	0
Toll per Plaza		X		-0.761	0.0437	-17.41	0
Alternative Specific Constant - Toll per Plaza		X		3.26	0.237	13.74	0
Alternative Specific Constant - Stop Making Trips			X	-1.07	0.196	-5.46	0

Model Statistics	
Number of Estimated Parameters	6
Number of Observations	3,400
Number of Individuals	425
Null Log-likelihood	-3,735.282
Final Log-likelihood	-2,091.135
Adjusted Rho-square	0.439

Source: WV Turnpike SP Survey

Table 3-9 MNL Model Results: WV Residents Cash – Frequent Users

Coefficient	Alternatives			Coefficient Values			
	WV E-ZPass	Toll Per Plaza	Stop Making Trips	Value	Robust Std. Error	Robust T-Test	Robust P-Value
Annual Fee	X			-0.0372	0.00184	-20.18	0
Issuance Fee	X			-0.0294	0.00259	-11.34	0
Vehicles	X			0.077	0.0154	5.02	0
Toll per Plaza		X		-0.471	0.0401	-11.75	0
Alternative Specific Constant - Toll per Plaza		X		0.575	0.129	4.46	0
Alternative Specific Constant - Stop Making Trips			X	-2.75	0.119	-23.06	0
Lambda - Annual Number of Trips		X		0.148	0.0207	7.16	0

Model Statistics	
Number of Estimated Parameters	7
Number of Observations	4,776
Number of Individuals	597
Null Log-likelihood	-5,246.972
Final Log-likelihood	-4,047.093
Adjusted Rho-square	0.227

Source: WV Turnpike SP Survey

Table 3-10 MNL Model Results: Non-WV Resident Cash – Frequent Users

Coefficient	Alternatives			Coefficient Values			
	WV E-ZPass	Toll Per Plaza	Stop Making Trips	Value	Robust Std. Error	Robust T-Test	Robust P-Value
Annual Fee	X			-0.041	0.00197	-20.81	0
Issuance Fee	X			-0.0344	0.00243	-14.17	0
Vehicles	X			0.101	0.0146	6.89	0
Toll per Plaza		X		-0.54	0.0317	-17.06	0
Alternative Specific Constant - Toll per Plaza		X		1.83	0.115	15.9	0
Alternative Specific Constant - Stop Making Trips			X	-2.13	0.102	-20.91	0
Lambda - Annual Number of Trips		X		0.163	0.0207	7.88	0

Model Statistics	
Number of Estimated Parameters	7
Number of Observations	6,840
Number of Individuals	855
Null Log-likelihood	-7,514.508
Final Log-likelihood	-5,524.077
Adjusted Rho-square	0.264

Source: WV Turnpike SP Survey

Table 3-11 MNL Model Results: WV E-ZPass

Coefficient	Alternatives			Coefficient Values			
	WV E-ZPass	Toll Per Plaza	Stop Making Trips	Value	Robust Std. Error	Robust T-Test	Robust P-Value
Annual Fee	X			-0.0434	0.00103	-42.03	0
Issuance Fee	X			-0.0335	0.00155	-21.55	0
Vehicles	X			0.0799	0.0096	8.33	0
Toll per Plaza		X		-0.343	0.0198	-17.31	0
Alternative Specific Constant - Toll per Plaza		X		-0.933	0.0851	-10.97	0
Alternative Specific Constant - Stop Making Trips			X	-3.41	0.0827	-41.22	0
Lambda - Annual Number of Trips		X		0.282	0.0177	15.93	0

Model Statistics	
Number of Estimated Parameters	7
Number of Observations	14,232
Number of Individuals	1,779
Null Log-likelihood	-15,635.45
Final Log-likelihood	-10,358.342
Adjusted Rho-square	0.337

Source: WV Turnpike SP Survey

The coefficient values are the values estimated by the choice models that represent the relative importance of each of the variables. These values are unit-specific, and the units must be accounted for when comparing coefficients. The sign of the coefficient indicates a positive or negative relationship between utility and the associated variable. For example, a negative toll cost coefficient implies that utility for a given travel alternative will decrease as the toll cost associated with that alternative increases.

The standard error is a measure of error around the mean coefficient estimate. The t-statistic is the coefficient estimate divided by the standard error, which can be used to evaluate statistical significance. A t-statistic greater/less than ±1.96 indicates that the coefficient is statistically significantly different from zero (unless otherwise reported) at the 95% level.

The model fit statistics presented for each set of results include the number of estimated parameters (i.e., coefficients), the number of choice observations, the number of individuals, the initial log-likelihood, the log-likelihood at convergence, and adjusted rho-squared. The log-likelihood is a model fit measure that indicates how well the model predicts the choices observed in the data, where values closer to zero indicate higher predictive accuracy. The null log-likelihood is the measure of the predictive accuracy with coefficient values of zero. The final log-likelihood is the measure of predictive accuracy with the final coefficient values at model convergence (i.e., the coefficient estimates in the final models).

The log-likelihood cannot be evaluated independently, as it is a function of the number of observations, the number of alternatives, and the number of parameters in the choice model. The rho-square model fit measure accounts for this to some degree by evaluating the difference between the null log-likelihood and the final log-likelihood at convergence, and can take on values between 0 and 1. A rho-square of 0 indicates that the model cannot explain any variation in choice behavior, and a rho-square value of 1 indicates that the model explains 100% of the choice behavior in the SP exercises. The adjusted rho-square value considers the number of parameters estimated in the model. In the MNL models presented above, the adjusted rho-square values range from 0.227 to 0.621. In other words, the models above explain between 22.7% and 62.1% of the variation in choice behavior in the SP exercises.

3.6.2 Trip Suppression

In addition to the MNL models, linear regression models were estimated to forecast trip reduction rates in response to proposed increases in per-plaza toll rates. The suppression models were fitted with data from respondents who selected the second alternative (pay per plaza per trip) in the first or second SP scenario. Respondents who would stop making trips altogether on the Turnpike are not included in the estimated suppression rates presented in this section. They are instead accounted for separately in the forecast modeling.

Respondents who reported that they would continue to pay tolls per plaza if the toll cost increased were asked a follow-up question of how many trips they would make under the hypothetical conditions presented in the SP experiment.

4,878 suppression observations were collected from 3,039 respondents. Additional data cleaning was performed prior to estimating the suppression models to ensure practical model results. Respondents who met any of the following conditions were excluded from the suppression models:

- Made less than three trips annually on the Turnpike (1,127 observations)

- Were shown a toll cost of $1.50 in the SP experiment (816 observations)
- Indicated that they would suppress trips when the toll rate shown was equal to the current toll rate ($2.00) and were Non-WV E-ZPass customers (114 observations)

Removing these observations resulted in a suppression dataset of 3,056 suppression observations from 2,099 respondents. Suppression models were estimated for the four segments presented in **Table 3-12**.

Table 3-12 Suppression Model Segments

Segment	Respondents	Suppression Observations
Non-WV E-ZPass customers	940	1,495
West Virginia resident cash customers	255	347
Non-WV resident cash customers	546	785
West Virginia E-ZPass customers	358	429
Total	**2,099**	**3,056**

Source: WV Turnpike SP Survey

The dependent variable in the suppression model was the percentage of trips reduced because of increased toll rates, while the independent variable was the per-plaza toll rate shown in the experiment:

$$\Delta \boldsymbol{Tr} = \boldsymbol{m} * \Delta \boldsymbol{t}$$

Where:

- ΔTr is the percentage difference in the number of trips.
- m is the regression coefficient.
- Δt is the toll rate shown in the experiment.

The results of the five suppression models are shown in **Table 3-13**. The coefficient is interpreted as the percent reduction in total trips for each $1.00 dollar increase in toll costs. The standard error is a measure of the statistical precision of the coefficient. The t-statistic for a coefficient estimate is the coefficient estimate divided by its standard error, and is used to evaluate statistical significance. A t-statistic greater/less than ±1.96 indicates that the coefficient is statistically significantly different from zero at the 5% significance level. The adjusted R^2 measures the overall fit of the model to the data and can be interpreted as the proportion of variation in the response variable that is explained by the model. For example, for the West Virginia E-ZPass segment, the model explains 19.42% of the variation in trip suppression.

Table 3-13 Trip Suppression Model Parameters

Model Segment	Coefficient	Standard Error	T-Stat	P-Value	Adjusted R
Non-WV E-ZPass	0.03961	0.00463	8.56	<0.001	0.0461
West Virginia resident cash	0.06935	0.00937	7.41	<0.001	0.1343
Non-WV resident cash	0.04626	0.01458	3.17	0.002	0.0114
West Virginia E-ZPass	0.07647	0.00748	10.22	<0.001	0.1942

Source: WV Turnpike SP Survey

The regression coefficients were used to calculate trip suppression rates for toll rates shown to respondents. **Table 3-14** shows trip suppression rates at incremental toll rates for each model segment.

The regression shows that as toll costs increase, trip reduction rates increase, particularly WV E-ZPass customers not in the flat fee program.

Table 3-14 Suppression Model Results

Toll Rate	Percent Trip Reduction by Market Segment			
	Non-WV E-ZPass	Cash, WV Resident	Cash, Non-WV Resident	WV E-ZPass
$2.00	0.0%	0.0%	0.0%	5.4%
$2.50	2.0%	3.5%	2.3%	9.2%
$3.00	4.0%	6.9%	4.6%	13.0%
$3.50	5.9%	10.4%	6.9%	16.8%
$4.00	7.9%	13.9%	9.3%	20.6%
$4.50	9.9%	17.3%	11.6%	24.5%
$5.00	11.9%	20.8%	13.9%	28.3%

Source: WV Turnpike SP Survey

3.6.3 Market Share Simulation

The coefficients of the MNL models can be used to calculate market shares for different payment alternatives. The results from the fully segmented models were incorporated into an Excel-based market share simulation tool. An example screen shot of the simulation tool's interface is shown in **Figure 3-7**. The tool converts estimates of preference into market shares for each of the three alternatives. The simulation model allows the consultant team to test "what-if" changes to payment options and costs and provides estimates of what percentage of the qualifying traveling population would join the revised flat fee program under specific scenarios.

Trip suppression and induction results were integrated into the simulator. Average trip induction rates by market segment among respondents who chose to join the revised flat fee program are shown next to the market share estimates for Option 1. The percent trip reduction estimates resulting from the regression models described above are presented next to the market share estimates for Option 2.

The equations behind the market share simulator were incorporated into tolling models used to estimate reaction to tolling policy. (See Chapter 5 for more information).

Figure 3-7 Market Share Simulator Example

West Virginia Turnpike Payment Choice Stated Preference Survey - Market Share Simulator

Inputs

Option 1 Join Revised Flat Fee Program		Option 2 Pay Tolls per Plaza		Option 3 Stop Making Trips on the West Virginia Turnpike
Annual Fee:	$8	Toll Cost per Plaza:	$4.00	
Issuance Cost:	$13			
Vehicles per Transponder:	1			

Market Shares

Market Segment	Average Number of Trips	Option 1 Join Revised Flat Fee Program Market Share	Option 1 % Trip Induction	Option 2 Pay Tolls per Plaza Market Share	Option 2 % Trip Reduction	Option 3 Stop Making Trips on the West Virginia Turnpike Market Share	Average Number of Suppressed Trips (per driver)
Non-WV E-ZPass - Infrequent Users	--	7%	39%	78%	--	15%	--
Non-WV E-ZPass - Frequent Users	16.0	32%	6%	48%	8%	20%	3.8
Cash - Infrequent Users	--	22%	42%	61%	--	17%	--
Cash - Frequent Users - WV Residents	73.2	83%	15%	8%	14%	10%	7.8
Cash - Frequent Users - Non WV Residents	18.4	62%	8%	24%	9%	14%	3.1
WV E-ZPass (not on a discount plan)	38.6	92%	10%	2%	21%	6%	2.5

Source: WV Turnpike SP Survey

3.7 Customer Comments

Approximately 1,300 survey respondents provided unstructured comments after taking the SP survey. Individually summarizing and classifying such a large group of comments would take a large amount of time. Instead, CDM Smith sorted the comments into one or more of eleven categories intended to clarify the nature of the comments, firstly by sorting them into categories with the appearance of certain key words in the comments as criteria and secondly through visually scanning comments. The categories used are described below.

- **Positive Hedonic** – These comments were positive about aspects of the Turnpike and/or the SP survey in a general sense. These comments included positive comments on the survey, the quality of the highway, the scenery surrounding the highway, the efficiency of toll collection and the politeness of toll collectors, and other information.

- **Negative Hedonic** – These comments dealt with the same subjects as the Positive Hedonic comments but described them negatively.

- **Positive Convenience** – These comments were positive about aspects of the Turnpike that were related to convenience and ease of travel.
- **Negative Convenience** – These comments dealt with the same subjects as the Positive Convenience comments but described them negatively.
- **Positive Cost** – These comments were positive about aspects of the Turnpike that are related to the cost of traveling the Turnpike and the cost of building and maintaining the highway and tolling system.
- **Negative Cost** – These comments dealt with the same subjects as the Positive Cost comments but described them negatively.
- **Positive Safety** – These comments were positive about aspects of the Turnpike that were related to the safety of traveling the Turnpike.
- **Negative Safety** – These comments dealt with the same subjects as the Positive Safety comments but described them negatively.
- **Trip Purpose** – These comments dealt with the reasons travelers used the Turnpike, as well as the frequency to some degree.
- **Geographic Content** – These comments mentioned certain geographic locations.
- **Low Content** – These comments had little to no content, either because they were short or nonsensical.

Table 3-15 contains the counts of responses in each of these categories. A large portion of the comments were generally positive about the Turnpike and the survey. There were some negative comments on both convenience and cost. Not all comments fit into the categories and some comments might fit into multiple categories.

Table 3-15 Categories of Response

Category of Response	Count
Positive Hedonic	481
Negative Hedonic	91
Positive Convenience Content	177
Negative Convenience Content	209
Positive Cost Content	22
Negative Cost Content	238
Positive Safety Comment	18
Negative Safety Comment	60
Trip Purpose Content	112
Geographic Content	439
Low Content	22
Sum	**1,869**
Total Number of Responses	**1,304**

Source: CDM Smith analysis of survey respondent comments

The following includes a summary of the main points that were derived from the various customer comments:

- E-ZPass was viewed by customers as a highly effective and convenient payment option, especially since the toll plazas do not currently accept payment by credit or debit card and coming up with exact change for payment purposes is considered difficult by many customers. Frequent customers were the happiest with E-ZPass, as well as customers from other states who enjoy the convenience of flexible payments. However, several respondents indicated they felt there should be a discount for Non-WV E-ZPass customers.

- Many respondents wrote that there should be additional E-ZPass only lanes in tolling plazas to reduce booth congestion. It was pointed out that customers making cash payments slowed down trips and caused delays by taking time to come up with exact change for tolls that would be avoided if the E-ZPass were used. Customers were divided about tolls collected in manned lanes. Some see manned lanes as outdated and inefficient but others stated that their travel experience on the Turnpike was improved by professional and friendly toll collectors and expressed concern about automation taking jobs out of an area with few employment opportunities.

- Generally, respondents expressed tentative support for increases in tolls if the tolls were spent directly on improving the quality and efficiency of the system. There were many comments expressing resentment over the fact that the Turnpike is the only tolled road in West Virginia and that the northern half of the state does not pay its fair share.

- Most respondents who commented on their origins, destinations, and reasons for traveling used the Turnpike for irregular or semi-regular trips such as family visits and vacations. These respondents were also usually out of state customers driving between the Midwest and South. Those respondents were more tolerant of fare increases than those living nearby and traveling on the Turnpike for commute purposes, errands, or medical reasons.

3.8 Conclusions

A stated preference survey questionnaire was successfully developed and implemented that gathered 6,438 valid responses from Turnpike customers. The questionnaire collected data on general and current travel behaviors on the Turnpike, presented respondents with information about the proposed changes to payment structures to use the facility, and engaged the travelers in a series of SP scenarios and trip suppression/induction questions.

The SP survey data was used to develop choice models to understand travelers' behavioral responses to the proposed payment option changes. The magnitude and signs of the coefficient estimates are reasonable and intuitively correct. The results of the choice models were used to create an excel-based simulation tool for the consultant team to test "what-if" changes to payment options and fee levels and provides estimates of what percentage of the qualifying traveling population would join a revised flat fee program, pay their tolls on a per plaza basis, or discontinue making their trips on the Turnpike all together. This tool can be used as a point of comparison to evaluate how different pricing arrangements for the proposed payment structures might affect revenue.

A separate set of regression models were developed to test how the proposed payment structure might affect total travel trips on the Turnpike. The regressions showed that as toll costs increase, trip reduction rates increase, particularly for WV residents.

A detailed report covering the SP survey development, fielding, results and modeling was completed.

Chapter 4

Economic and Baseline Forecast

4.1 Introduction

An econometric analysis was conducted to estimate long-term travel demand for each plaza on the Turnpike: Ghent (A), Pax (B), Chelyan (C), and North Beckley (NB). Historical passenger car and commercial vehicle demand for each plaza was econometrically estimated via regression equations, applying regional socioeconomics as explanatory variables. With such regression equations, once model parameters have been estimated, regional socioeconomic forecasts were applied to the equation coefficients to estimate annual future demand. In total, eight equations were derived for the combinations of four plazas and two vehicle categories (PCs and CVs). For each equation, a baseline forecast was developed along with a pessimistic and optimistic sensitivity test. Once the regression baseline was established, consideration was given to other factors which may influence the long-range forecasts.

In future stages, econometrically-derived baseline and alternative travel demand forecasts for each plaza-vehicle combination were incorporated into the tolling model that considered a range of future toll policies and rate structures.

4.2 Econometric Modeling

Multivariate regression analysis establishes a mathematical equation for a dependent variable (e.g., annual transactions) as a function of other independent variables (e.g., annual socioeconomic data), with associated statistics explaining the equation robustness. Generally, a regression equation is expressed as follows:

$$y_t=\alpha+\beta_1 * x_{1,t}+\beta_2 * x_{2,t}+\cdots+ \varepsilon$$

Where:

- y_t is the dependent variable in timeframe t
- $x_{1,t}$ and $x_{2,t}$ etc. are the independent variables in timeframe t
- α is the intercept coefficient
- β_1 and β_2 etc. are the slope coefficients for the respective independent variables
- ε is the residual error

In each regression equation, an analysis of variation (ANOVA) table is created that explains the statistical parameters, such as adjusted R^2 (coefficient of determination) and t-statistics for each independent variable, which indicate overall equation and independent variable robustness, respectively. ANOVA results determine the statistical defensibility of the equation.

A regression equation can be leveraged for forecasting the dependent variable if ANOVA metrics are statistically significant, the equation's relationships are conceptually valid, and forecasts of independent variables are credibly available.

4.2.1 Regression Testing and Data

Individual highway travel occurs for myriad reasons, such as recreation, commuting, and trade. Travel is influenced by factors such as fuel prices, other travel costs, weather, trip urgency, and economics. Aggregated highway travel 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 include population, employment, and real gross regional product, compiled at various geographic levels. Additionally, the effective average annual toll rates were calculated and tested in combination with the socioeconomics.

Multiple regression equations were tested and evaluated for each plaza-vehicle category to account for the numerous possible combinations of relevant geographies (county and/or state clusters) for each socioeconomic variable, and inclusion of effective toll rates. A final equation was selected based on multiple criteria, including but not limited to: overall equation robustness (adjusted R^2), independent variable robustness (t-statistics and p-values), logic and reasonableness of equation coefficients, logic and reasonableness of geographic catchment area, and the credibility of the independent variable(s) and source(s).

Data compiled for regression testing included:

- WVPA – historical transactions and revenues
- United States Census Bureau – historical population
- United States Bureau of Economic Analysis (BEA) – historical employment
- Woods & Poole Economics, Inc. (W&P) – historical and forecast population, employment, and real gross regional product (GRP)

4.2.2 Regression Caveats

Econometrically-derived long-term demand forecasts served as basis for further modeling of annual transaction and toll revenues. The regression growth forecasts 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, traffic diversions, or future toll pricing changes.

As this regression analysis attempts 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. Consequently, the long-range growth rates were dampened to account for these other unknown factors.

4.2.3 Regression Equations and Forecasting

A final regression equation was estimated for each plaza-vehicle combination, relating historical annual demand (plaza transactions) with a regional socioeconomic variable, and in some instances, average effective toll rates, over a 27-year horizon (1990 to 2016, inclusively). **Table 4-1** identifies the general regression characteristics, including the explanatory socioeconomic variable and corresponding geographic scale of the socioeconomic catchment area, as well as whether the average effective toll rates are included in the equation, and the adjusted R^2 statistics.

Geographic combinations of counties are the most-logical and statistically-valid catchment areas for PC transactions for all four plazas. While the combinations of each catchment area vary slightly between the plazas, the areas of statistical influence include counties between the city of Charleston and the Monongahela, Washington, and Jefferson National Forests along the Appalachian Mountains (southeastern West Virginia and northwest Virginia).

CV transactions at the mainline plazas are related to the socioeconomics with a cluster of states, which include: West Virginia, Virginia, Ohio, and Kentucky; however, the geographic catchment for North Beckley (NB) is more-closely related to a county cluster like the passenger-related catchment. The catchment areas are identified in the regression equations summarized at the end of the chapter.[1]

PC transactions along the mainline plazas are related to real GRP, whereas for North Beckley (NB) PC and all CV transactions for all plazas, the socioeconomic variable is employment. Average effective annual toll rates are statistically significant for North Beckley (NB) PC transactions and Pax (B) and Chelyan (C) CV transactions. Adjusted R^2 (overall statistical robustness) is between 87.8% and 96.0%, indicating very good relationships.

Table 4-1 Regression Equation Summary

Plaza	Vehicle Type	Catchment	Variable	Toll Rate	Adj. R^2
Ghent (A)	PC	Counties	GRP	Irrelevant	96.0%
Pax (B)	PC	Counties	GRP	Irrelevant	92.9%
Chelyan (C)	PC	Counties	GRP	Irrelevant	90.9%
North Beckley (NB)	PC	Counties	Employment	Relevant	94.3%
Ghent (A)	CV	States	Employment	Irrelevant	95.2%
Pax (B)	CV	States	Employment	Relevant	94.7%
Chelyan (C)	CV	States	Employment	Relevant	95.6%
North Beckley (NB)	CV	Counties	Employment	Irrelevant	87.8%

Note: PC = Classes 1-4, CV = Classes 5-10
Source: CDM Smith Analysis

With the final regression equations, forecasts of the regional socioeconomic variables were applied to the regression coefficients to estimate future long-term travel demand. Socioeconomic forecasts compiled from W&P were compared with historical patterns; and were observed as generally more aggressive than the long-term historical patterns (1990 to 2016) and certainly more aggressive than more-recent timeframes (2000 to 2016). As such, the socioeconomic forecasts from W&P were

[1] Catchment areas aggregate a regionalize socioeconomic variable as related to travel demand; however, it does 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.

designated as the optimistic scenario. A linear extrapolation of the long-term historical trends of the socioeconomics variables from 1990 to 2016 was designated the baseline scenario; and, a linear extrapolation of the socioeconomics from 2000 to 2016 was designated the pessimistic scenario.

4.3 Econometric Growth Forecasts

Econometrically-derived travel demand forecasts for the Turnpike were based on regression equations with regional socioeconomic explanatory variables, forecasted from either W&P or extrapolating historical trends. Applying socioeconomic forecasts into the equations yielded long-term toll transaction trend estimates for each plaza including baseline, pessimistic, and optimistic ranges. Once established, dampening or deceleration of the long-term growth rates was added to the forecasts to account for unknown factors including economic changes, travel pattern changes, and travel characteristics. A summary of the compound average growth rates (CAGR) for the plazas is provided in **Table 4-2**, depicting the average toll transaction growth from 1990 to 2000, 2000 to 2016, and for the entire 1990 to 2016 history, and the 2016 to 2050 average for each of the three alternatives.

Generally, the Turnpike exhibited 3.6% average toll transaction growth in the 1990s, followed by a notable deceleration around the millennium, resulting in a 0.8% average growth between 2000 and 2016. Over the entire historical timeframe available from 1990 to 2016, the average toll transaction growth amounted to 1.9% annually.

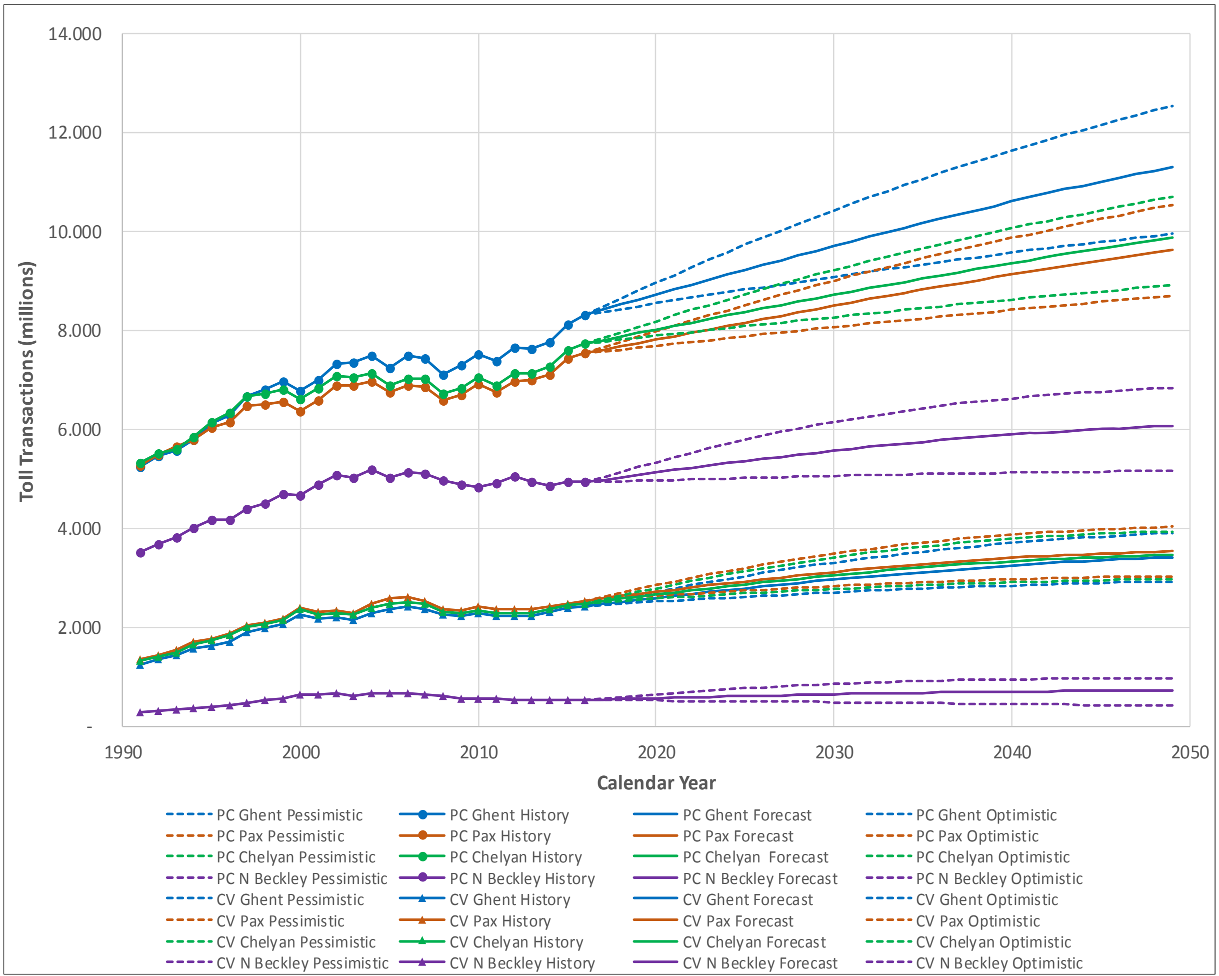
Over the future horizon through 2050, Turnpike toll transactions are projected to increase by 0.8% on average, annually. In the pessimistic alternative, the average future growth is 0.4%, and for the optimistic, 1.1%. CV transactions are projected to grow faster than PC transactions for all plazas, at 1.0% versus 0.8% average annual PC toll transaction growth. A visual summary of the transaction history and alternative forecasts for each plaza-vehicle combination is provided below in **Figure 4-1**; the primary/center line is the baseline, and lighter dashed lines enveloping the baseline are the optimistic and pessimistic alternatives. In **Figure 4-2**, the total transactions for the baseline forecast along with the optimistic and pessimistic forecasts are summarized by class and for the entire Turnpike.

Table 4-2 Transaction Growth Summary

Plaza	Vehicle Type	Historical CAGR			Forecast CAGR (2016-'50)		
		1990-'00	2000-'16	1990-'16	Pessimistic	Baseline	Optimistic
Ghent (A)	PC	3.2%	1.3%	2.0%	0.5%	0.9%	1.2%
Pax (B)	PC	2.4%	1.0%	1.6%	0.4%	0.7%	1.0%
Chelyan (C)	PC	2.6%	1.0%	1.6%	0.4%	0.7%	1.0%
North Beckley (NB)	PC	3.4%	0.4%	1.5%	0.1%	0.6%	1.0%
Ghent (A)	CV	6.1%	0.5%	2.6%	0.5%	1.0%	1.4%
Pax (B)	CV	5.9%	0.4%	2.5%	0.5%	1.0%	1.4%
Chelyan (C)	CV	6.0%	0.3%	2.5%	0.5%	1.0%	1.4%
North Beckley (NB)	CV	8.9%	-1.2%	2.6%	-0.8%	0.9%	1.8%
Total PC		2.9%	1.0%	1.7%	0.4%	0.8%	1.1%
Total CV		6.2%	0.3%	2.5%	0.5%	1.0%	1.4%
Total PC + CV		3.6%	0.8%	1.9%	0.4%	0.8%	1.1%

Note: PC = Classes 1-4, CV = Classes 5-10
Source: CDM Smith Analysis

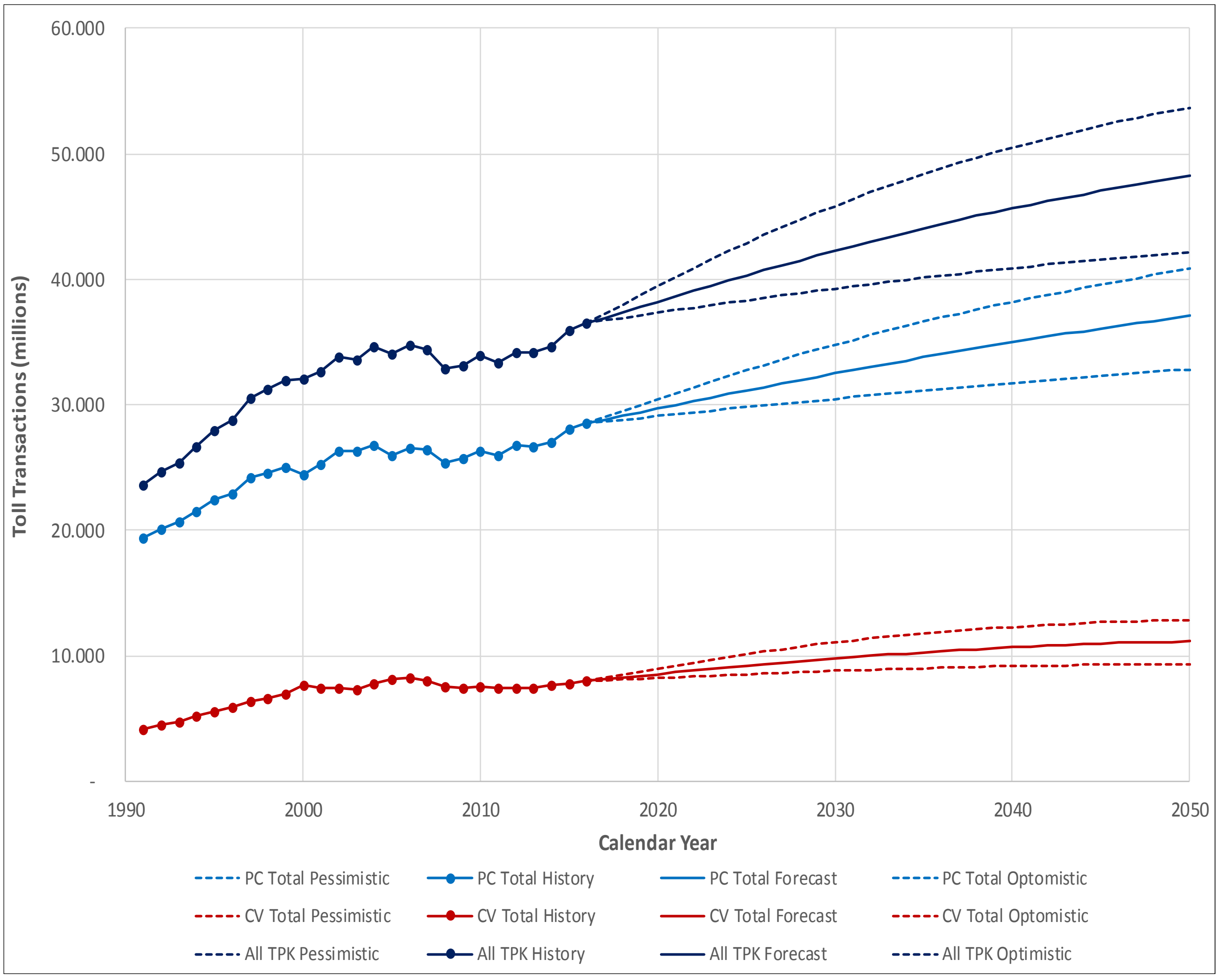
Figure 4-1 Transactions Summary by Plaza



Note: Passenger = Classes 1-4, Commercial = Classes 5-10

Source: CDM Smith Analysis

Figure 4-2 Transactions Summary by Class



Note: Passenger = Classes 1-4, Commercial = Classes 5-10
Source: CDM Smith Analysis

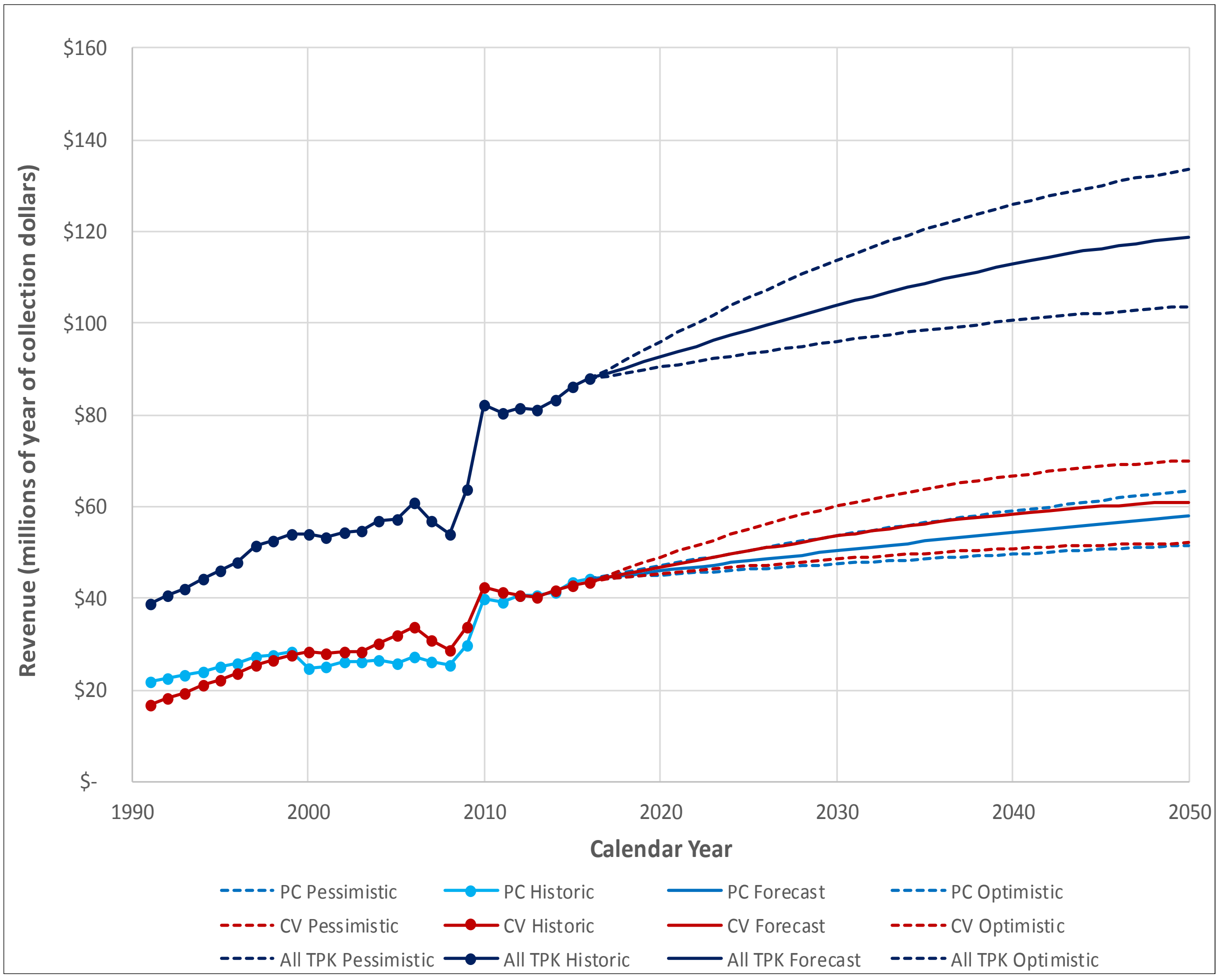
While the WVPA is considering toll policy changes as part of the current study, a baseline toll revenue forecast was developed from the toll transactions forecast. By assuming existing (2012-2016) revenue per transaction by plaza and the mix of passenger cars and commercial vehicles continue throughout the forecast horizon, **Table 4-3** shows the expected total toll traffic and revenue for the Turnpike as well as the pessimistic and optimistic revenue sensitivity tests. **Figure 4-3** illustrates the total historic and projected baseline revenue along with optimistic and pessimistic boundary scenarios.

Table 4-3 Baseline Toll Traffic and Revenue Forecast

Calendar Year	Toll Transactions (millions)			Revenue (millions year of collection dollars)			Revenue Sensitivity Test	
	Passenger Cars	Commercial Vehicles	Total	Passenger Cars	Commercial Vehicles	Total	Pessimistic	Optimistic
2017	28.80	8.12	36.92	$ 44.58	$ 44.49	$ 89.07	$ 88.48	$ 89.92
2018	29.10	8.26	37.36	$ 45.03	$ 45.25	$ 90.28	$ 89.12	$ 91.99
2019	29.39	8.40	37.79	$ 45.49	$ 46.00	$ 91.49	$ 89.75	$ 94.04
2020	29.68	8.53	38.21	$ 45.95	$ 46.75	$ 92.70	$ 90.38	$ 96.06
2021	29.97	8.67	38.64	$ 46.40	$ 47.48	$ 93.88	$ 90.99	$ 98.04
2022	30.26	8.80	39.06	$ 46.85	$ 48.21	$ 95.06	$ 91.59	$ 99.99
2023	30.55	8.93	39.48	$ 47.30	$ 48.92	$ 96.22	$ 92.18	$ 101.89
2024	30.83	9.06	39.89	$ 47.74	$ 49.62	$ 97.36	$ 92.77	$ 103.75
2025	31.11	9.18	40.29	$ 48.18	$ 50.31	$ 98.49	$ 93.34	$ 105.56
2026	31.39	9.31	40.70	$ 48.62	$ 50.98	$ 99.60	$ 93.90	$ 107.31
2027	31.67	9.43	41.10	$ 49.06	$ 51.64	$ 100.70	$ 94.46	$ 109.00
2028	31.94	9.54	41.48	$ 49.49	$ 52.28	$ 101.77	$ 95.00	$ 110.63
2029	32.21	9.66	41.87	$ 49.92	$ 52.91	$ 102.83	$ 95.53	$ 112.19
2030	32.48	9.77	42.25	$ 50.35	$ 53.51	$ 103.86	$ 96.04	$ 113.67
2031	32.75	9.88	42.63	$ 50.77	$ 54.11	$ 104.88	$ 96.55	$ 115.11
2032	33.01	9.98	42.99	$ 51.19	$ 54.68	$ 105.87	$ 97.04	$ 116.51
2033	33.27	10.08	43.35	$ 51.60	$ 55.23	$ 106.83	$ 97.53	$ 117.86
2034	33.52	10.18	43.70	$ 52.01	$ 55.76	$ 107.77	$ 98.00	$ 119.16
2035	33.77	10.27	44.04	$ 52.42	$ 56.28	$ 108.70	$ 98.45	$ 120.41
2036	34.02	10.36	44.38	$ 52.82	$ 56.77	$ 109.59	$ 98.90	$ 121.61
2037	34.27	10.45	44.72	$ 53.21	$ 57.23	$ 110.44	$ 99.33	$ 122.75
2038	34.51	10.53	45.04	$ 53.60	$ 57.68	$ 111.28	$ 99.75	$ 123.83
2039	34.74	10.60	45.34	$ 53.99	$ 58.10	$ 112.09	$ 100.15	$ 124.85
2040	34.97	10.67	45.64	$ 54.37	$ 58.50	$ 112.87	$ 100.54	$ 125.82
2041	35.20	10.74	45.94	$ 54.75	$ 58.87	$ 113.62	$ 100.92	$ 126.75
2042	35.43	10.80	46.23	$ 55.12	$ 59.22	$ 114.34	$ 101.28	$ 127.64
2043	35.65	10.86	46.51	$ 55.48	$ 59.54	$ 115.02	$ 101.63	$ 128.50
2044	35.86	10.92	46.78	$ 55.84	$ 59.84	$ 115.68	$ 101.96	$ 129.33
2045	36.07	10.96	47.03	$ 56.19	$ 60.11	$ 116.30	$ 102.28	$ 130.12
2046	36.28	11.01	47.29	$ 56.54	$ 60.35	$ 116.89	$ 102.59	$ 130.87
2047	36.48	11.05	47.53	$ 56.88	$ 60.57	$ 117.45	$ 102.88	$ 131.58
2048	36.68	11.08	47.76	$ 57.22	$ 60.76	$ 117.98	$ 103.15	$ 132.26
2049	36.87	11.11	47.98	$ 57.55	$ 60.92	$ 118.47	$ 103.41	$ 132.90
2050	37.06	11.13	48.19	$ 57.87	$ 61.05	$ 118.92	$ 103.66	$ 133.50

Source: CDM Smith Analysis

Figure 4-3 Baseline Toll Revenue Forecast



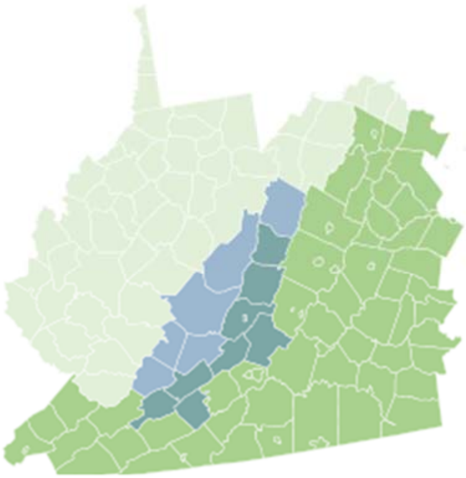
Note: Passenger = Classes 1-4, Commercial = Classes 5-10

Source: CDM Smith Analysis

4.4 Summary

Transaction and revenue growth on the Turnpike has shown periods of growth in the early 1990s, steady traffic with fluctuations in the early 2000s, and more recently has been showing additional growth. The forecasts from econometric analysis indicate modest but steady growth for the forecast horizon. The econometric snapshots are shown in **Figure 4-4** through **Figure 4-11**.

Figure 4-4 Ghent (A) Passenger Cars – Econometric Snapshot



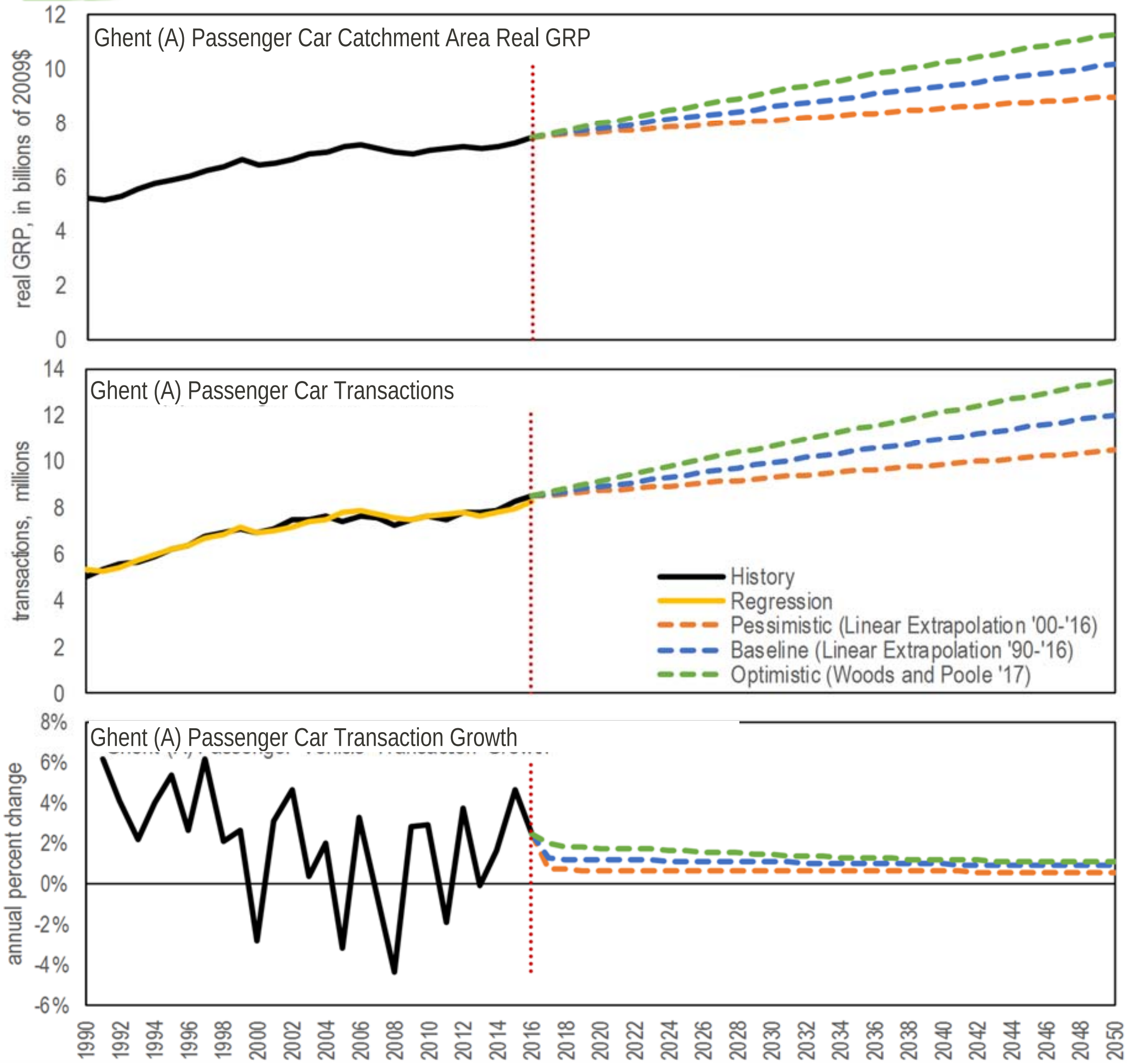
Ghent (A) Passenger Cars
- related to real GRP
- '90-'16 (historical) CAGR: 2.0%
- '16-'50 (pessimistic) CAGR: 0.6%
- '16-'50 (baseline) CAGR: 1.0%
- '16-'50 (optimistic) CAGR: 1.4%

ANOVA Statistics

Multiple R	98.0%
R^2	96.1%
Adj. R^2	96.0%
Std. Error	180,445
Obs.	27

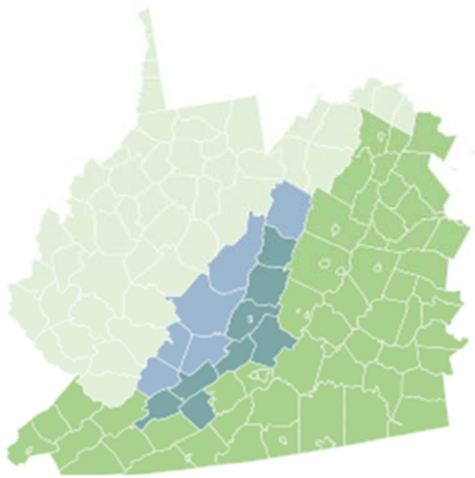
	df	SS	MS	F	Sig. F
Regression	1	2.02E+13	2.02E+13	619.6	3.7E-19
Residual	25	8.14E+11	3.26E+10		
Total	26	2.10E+13			

	Coef.	SE	t Stat	P-value
Intercept	-1,433,667	342,260	-4.19	3.0E-04
GRP	1,294.3	52.0	24.89	3.7E-19



Source: CDM Smith Analysis

Figure 4-5 Pax (B) Passenger Cars – Econometric Snapshot



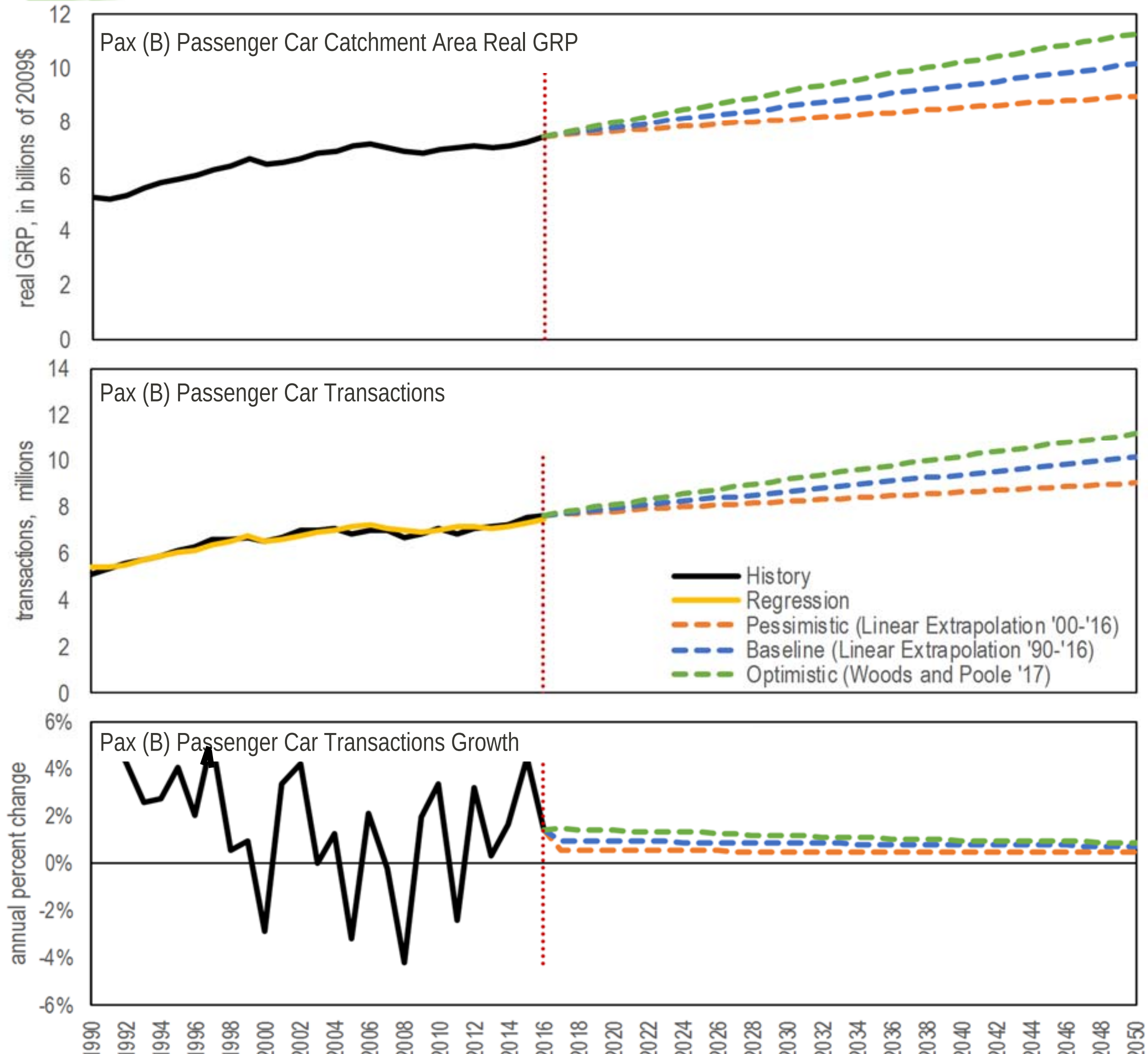
Pax (B) Passenger Cars
- related to real GRP
- '90-'16 (historical) CAGR: 1.6%
- '16-'50 (pessimistic) CAGR: 0.5%
- '16-'50 (baseline) CAGR: 0.8%
- '16-'50 (optimistic) CAGR: 1.1%

ANOVA Statistics

Multiple R	96.5%
R^2	93.2%
Adj. R^2	92.9%
Std. Error	169,512
Obs.	27

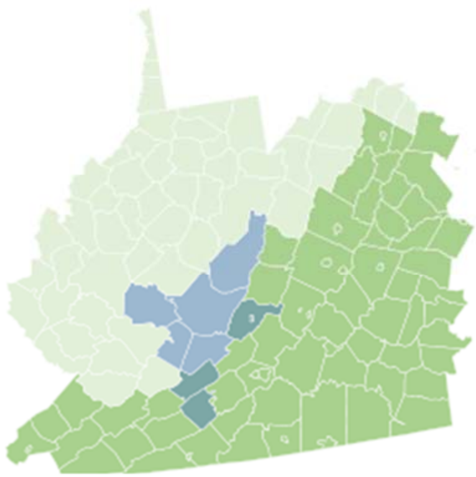
	df	SS	MS	F	Sig. F
Regression	1	9.79E+12	9.79E+12	340.6	4.5E-16
Residual	25	7.18E+11	2.87E+10		
Total	26	1.05E+13			

	Coef.	SE	t Stat	P-value
Intercept	737,484	321,522	2.29	3.0E-02
GRP	901.5	48.8	18.46	4.5E-16



Source: CDM Smith Analysis

Figure 4-6 Chelyan (C) Passenger Cars – Econometric Snapshot



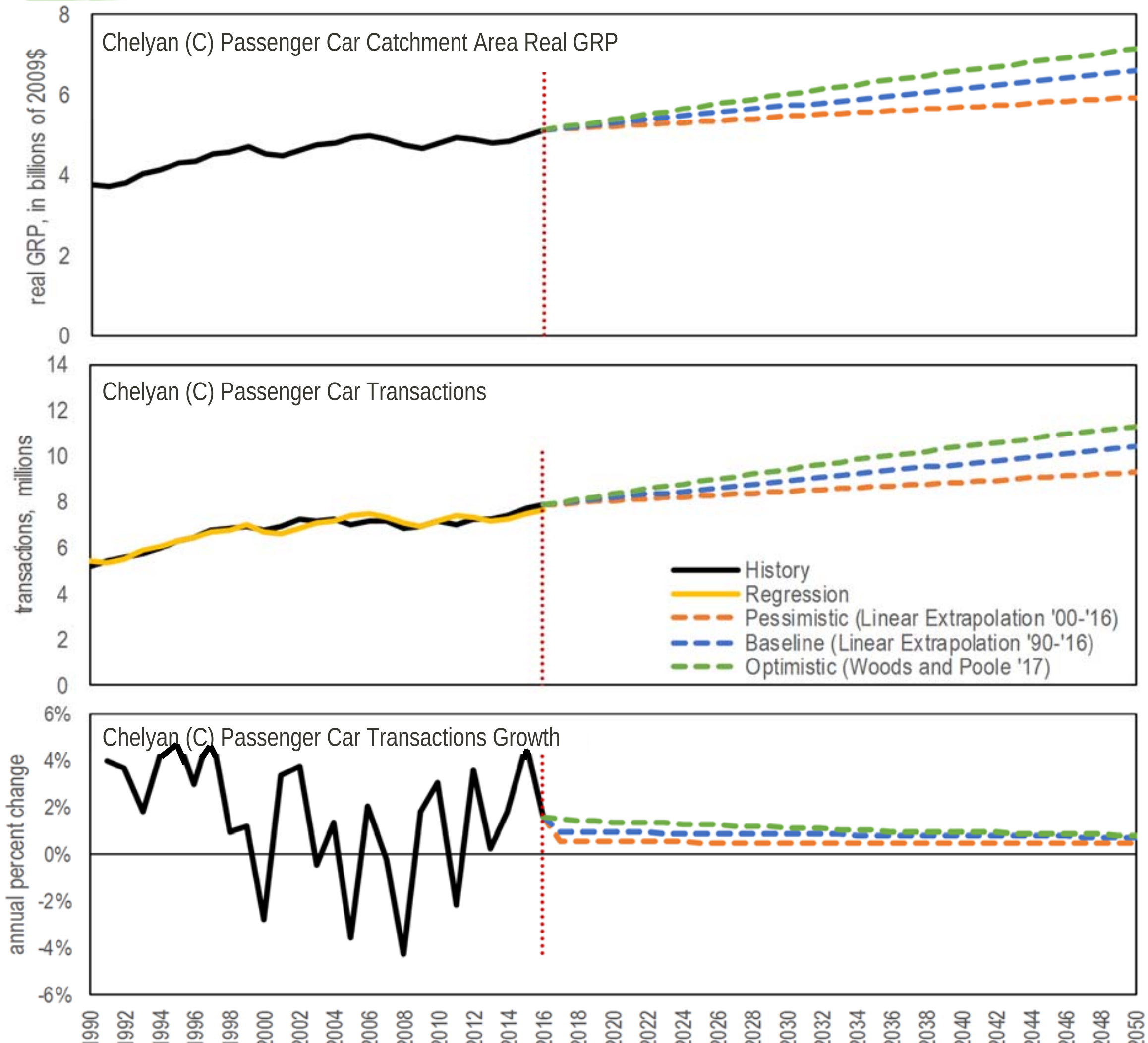
Chelyan (C) Passenger Cars
- related to real GRP
- '90-'16 (historical) CAGR: 1.6%
- '16-'50 (pessimistic) CAGR: 0.5%
- '16-'50 (baseline) CAGR: 0.8%
- '16-'50 (optimistic) CAGR: 1.1%

ANOVA Statistics

Multiple R	95.5%
R^2	91.2%
Adj. R^2	90.9%
Std. Error	206,278
Obs.	27

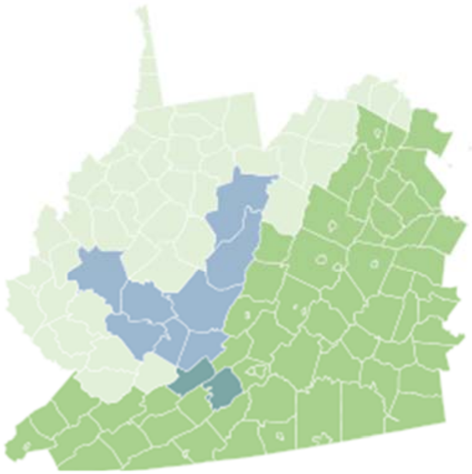
	df	SS	MS	F	Sig. F
Regression	1	1.11E+13	1.11E+13	259.8	1.0E-14
Residual	25	1.06E+12	4.26E+10		
Total	26	1.21E+13			

	Coef.	SE	t Stat	P-value
Intercept	-758,972	470,025	-1.61	1.2E-01
GRP	1,650.6	102.4	16.12	1.0E-14



Source: CDM Smith Analysis

Figure 4-7 North Beckley (NB) Passenger Cars – Econometric Snapshot



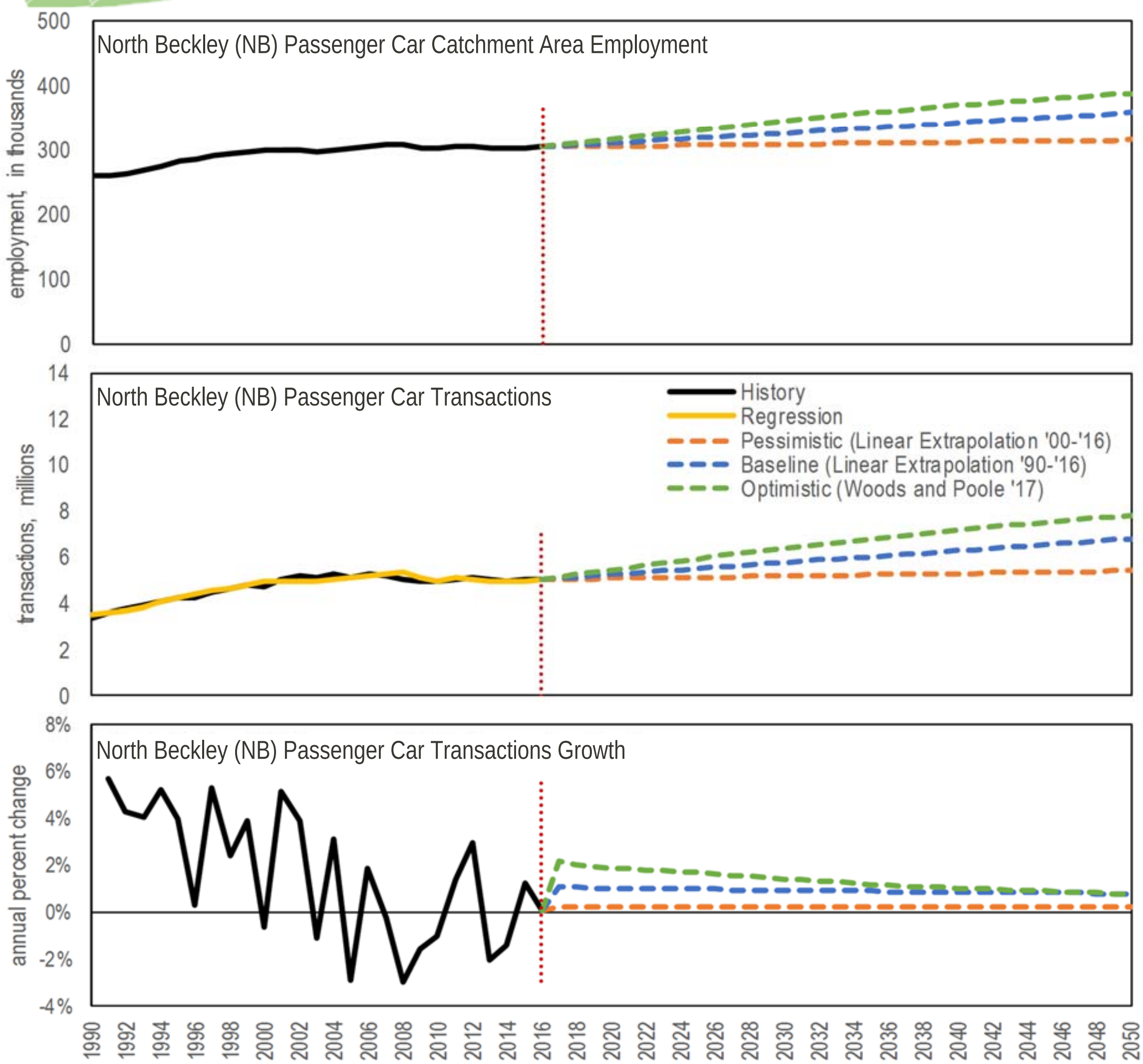
North Beckley (NB) Passenger Cars
- related to employment and effective toll rates
  - '90-'16 (historical) CAGR: 1.5%
  - '16-'50 (pessimistic) CAGR: 0.2%
  - '16-'50 (baseline) CAGR: 0.9%
  - '16-'50 (optimistic) CAGR: 1.3%

ANOVA Statistics

Multiple R	97.3%
R^2	94.7%
Adj. R^2	94.3%
Std. Error	131,206
Obs.	27

	df	SS	MS	F	Sig. F
Regression	2	7.40E+12	3.70E+12	214.8	4.8E-16
Residual	24	4.13E+11	1.72E+10		
Total	26	7.81E+12			

	Coef.	SE	t Stat	P-value
Intercept	-4,643,830	613,263	-7.57	8.2E-08
Employment	32.9	1.9	17.50	3.6E-15
Effective Rat	-1,299,187	521,587	-2.49	2.0E-02



Source: CDM Smith Analysis

Figure 4-8 Ghent (A) Commercial Vehicles – Econometric Snapshot

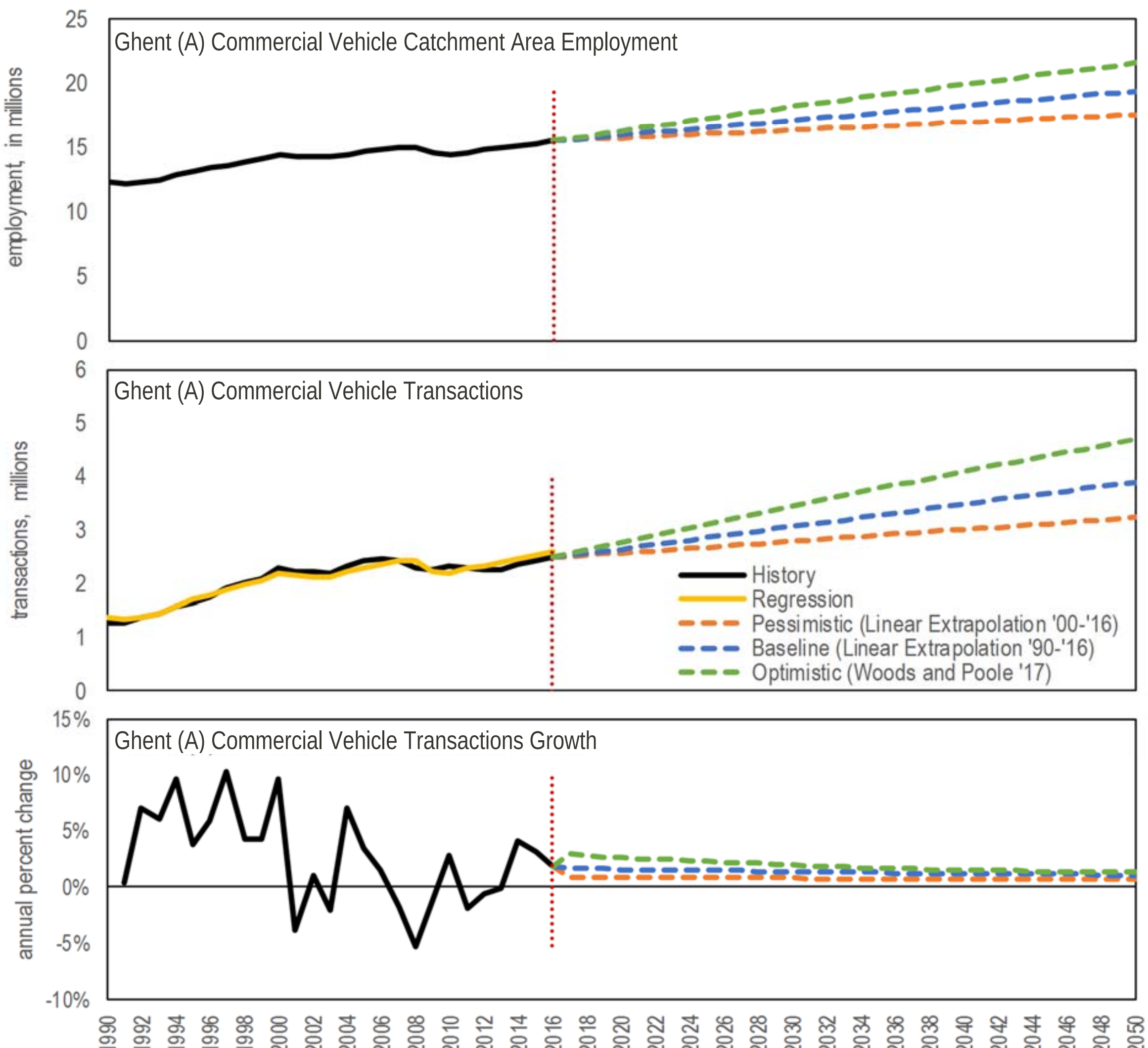
Ghent (A) Commercial Vehicles
- related to employment
- '90-'16 (historical) CAGR: 2.6%
- '16-'50 (pessimistic) CAGR: 0.8%
- '16-'50 (baseline) CAGR: 1.3%
- '16-'50 (optimistic) CAGR: 1.9%

ANOVA Statistics

Multiple R	97.7%
R^2	95.4%
Adj. R^2	95.2%
Std. Error	84,973
Obs.	27

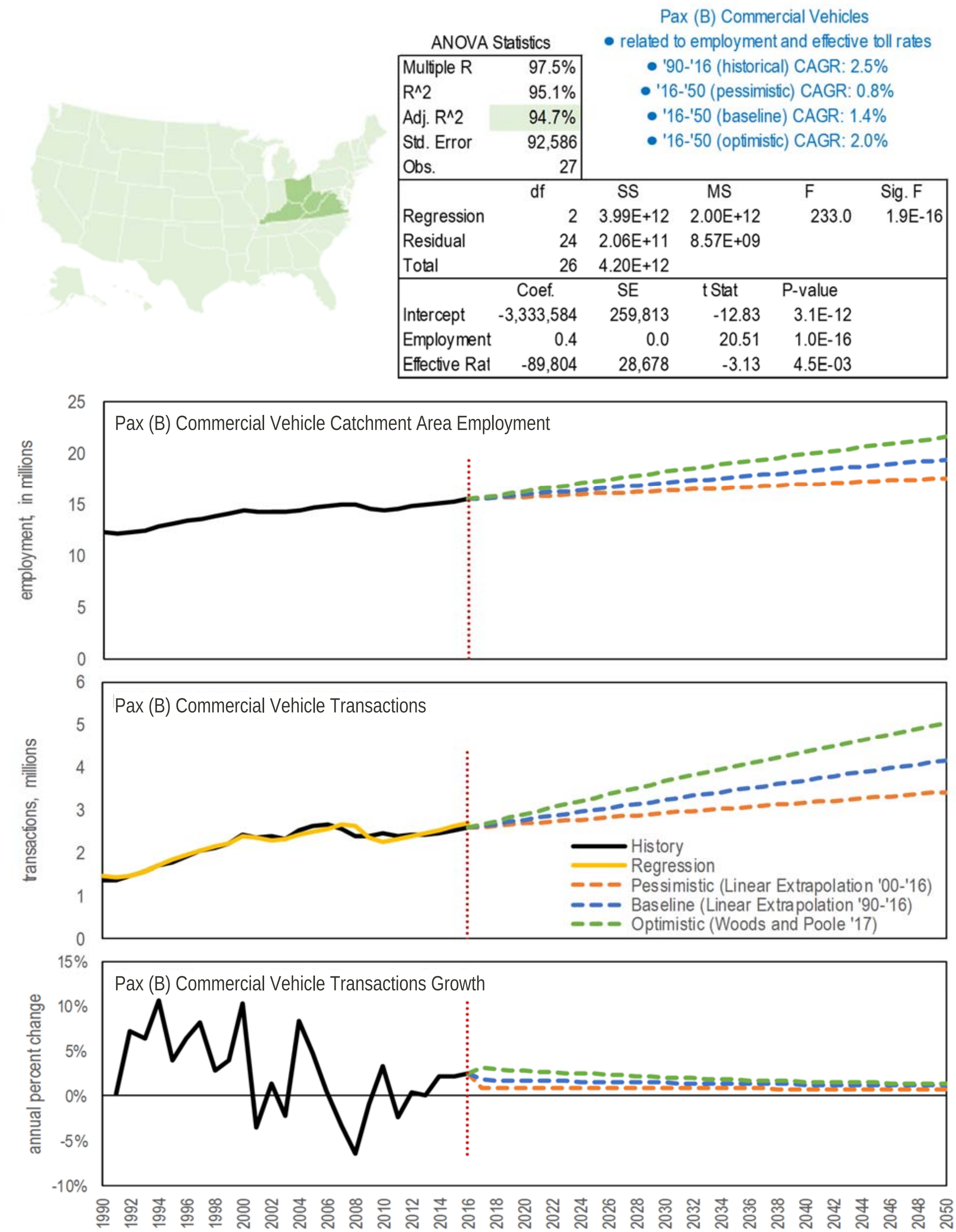
	df	SS	MS	F	Sig. F
Regression	1	3.72E+12	3.72E+12	515.1	3.4E-18
Residual	25	1.81E+11	7.22E+09		
Total	26	3.90E+12			

	Coef.	SE	t Stat	P-value
Intercept	-3,330,302	238,449	-13.97	2.6E-13
Employment	0.4	0.0	22.70	3.4E-18



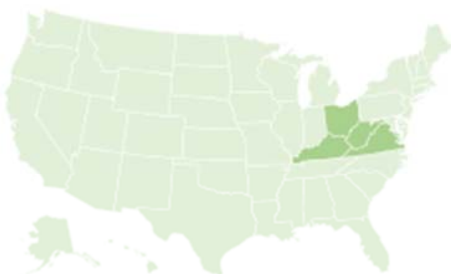
Source: CDM Smith Analysis

Figure 4-9 Pax (B) Commercial Vehicles – Econometric Snapshot



Source: CDM Smith Analysis

Figure 4-10 Chelyan (C) Commercial Vehicles – Econometric Snapshot



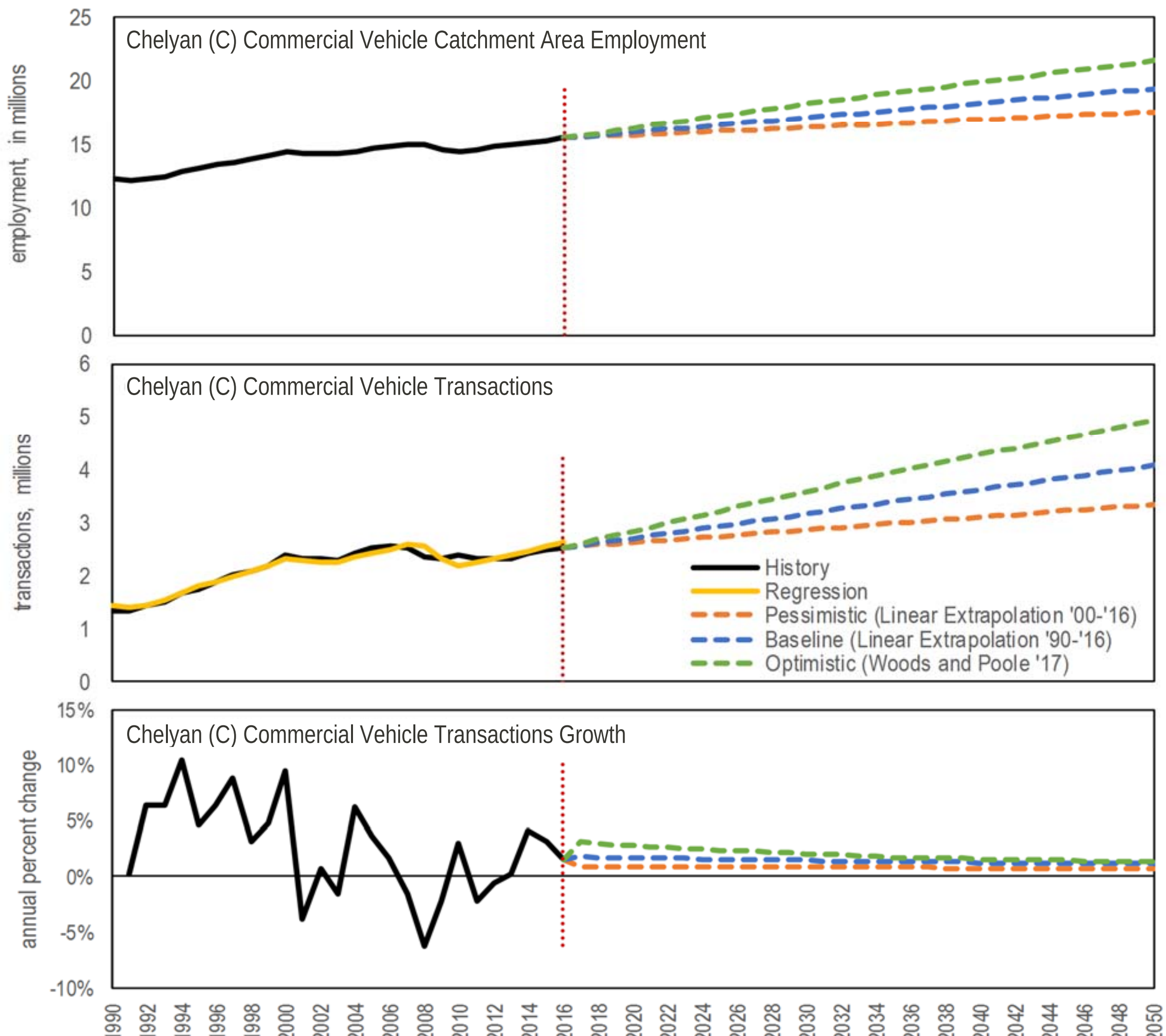
Chelyan (C) Commercial Vehicles
- related to employment and effective toll rates
  - '90-'16 (historical) CAGR: 2.5%
  - '16-'50 (pessimistic) CAGR: 0.8%
  - '16-'50 (baseline) CAGR: 1.4%
  - '16-'50 (optimistic) CAGR: 2.0%

ANOVA Statistics

Multiple R	97.9%
R^2	95.9%
Adj. R^2	95.6%
Std. Error	81,538
Obs.	27

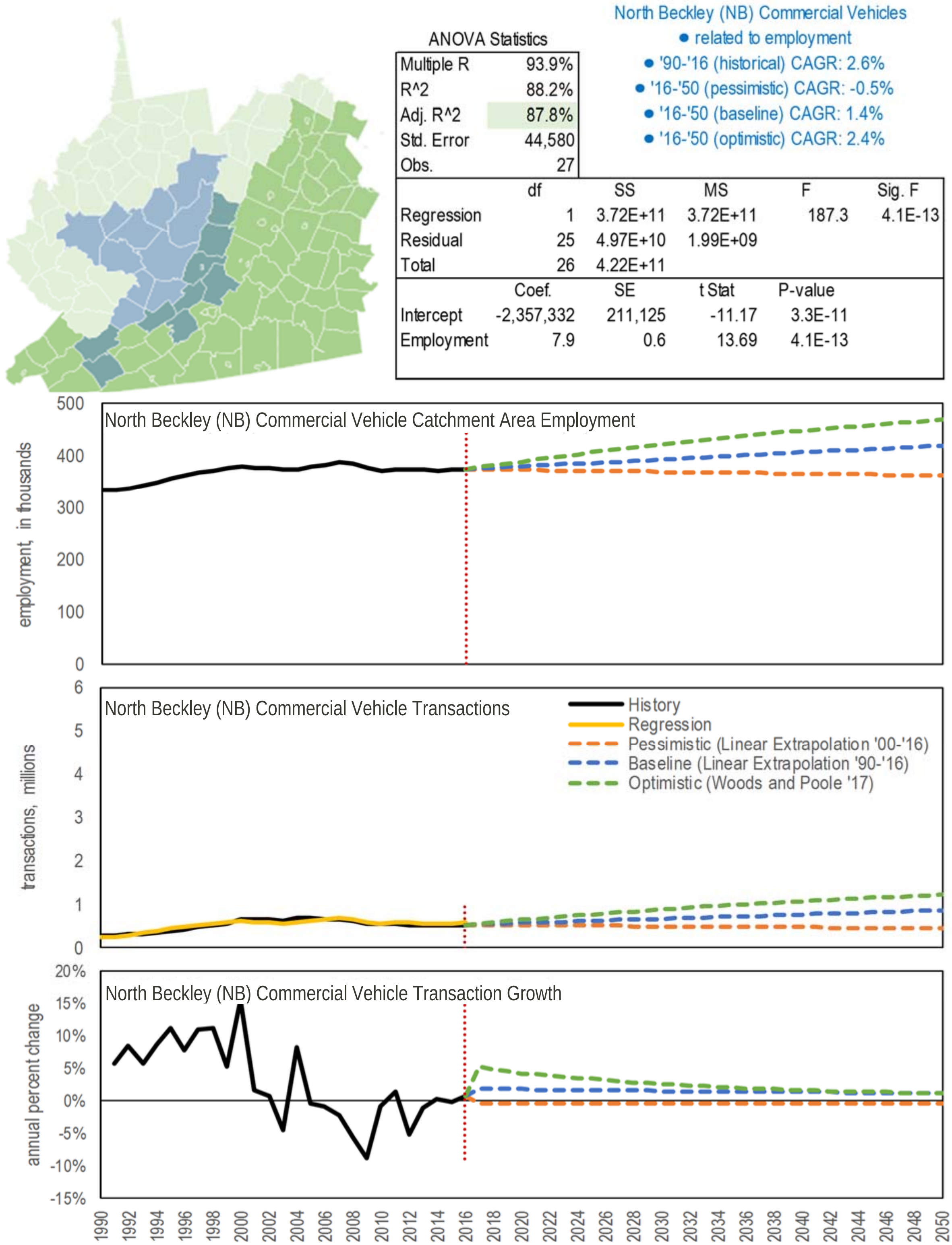
	df	SS	MS	F	Sig. F
Regression	2	3.74E+12	1.87E+12	281.1	2.2E-17
Residual	24	1.60E+11	6.65E+09		
Total	26	3.90E+12			

	Coef.	SE	t Stat	P-value
Intercept	-3,229,866	228,931	-14.11	4.1E-13
Employment	0.4	0.0	22.25	1.6E-17
Effective Rat	-89,502	25,807	-3.47	2.0E-03



Source: CDM Smith Analysis

Figure 4-11 North Beckley (NB) Commercial Vehicles – Econometric Snapshot



Source: CDM Smith Analysis

Chapter 5

Traffic and Revenue Forecast Approach

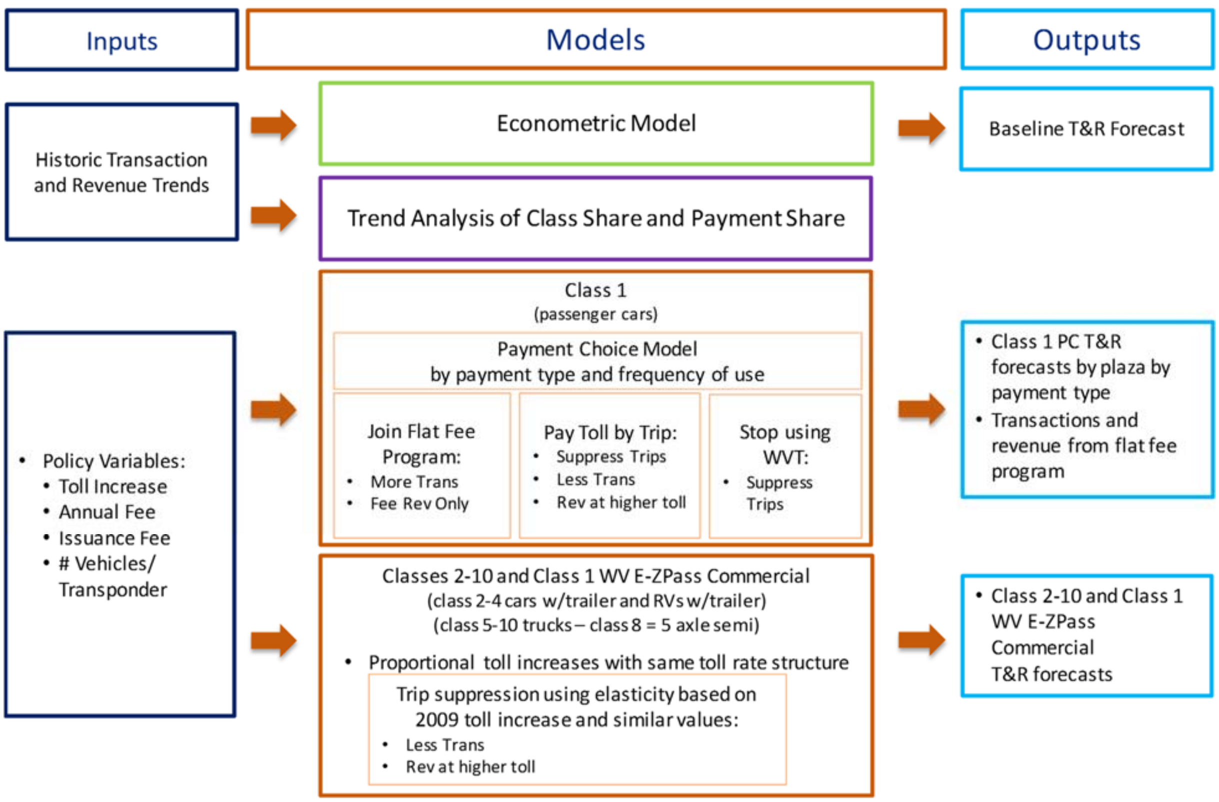
5.1 Introduction

This chapter contains an overview of the modeling approach developed by CDM Smith for this study. The chapter also has more details on the methodology used to develop T&R estimates for Class 1 vehicles (those eligible to enter the revised flat fee program or pay tolls per trip) and for Classes 2-10 vehicles (not subject to the revised flat fee program and facing higher toll rates). Example scenarios are then introduced to describe the expected customer behavior and resulting annual T&R streams based on toll policy parameters. The final approved scenario and details are provided in Chapter 6.

5.2 Overall Forecasting Approach

The overall forecasting approach is illustrated on **Figure 5-1**.

Figure 5-1 Overview of T&R Modeling Approach



The first two modeling components – econometric model and class/payment share – are independent of the proposed changes in toll policies. They are intended to produce a forecast of T&R based on the current toll rate schedule, assuming no changes in toll rate policies during the forecast horizon. This is referred to as the “Baseline” forecast.

The process applied to develop the Baseline forecast as well as the optimistic and pessimistic forecasts is documented in Chapter 4. As explained in that chapter, the econometric analysis resulted in modest but steady growth in T&R over the forecast period.

The review of historical transactions on the Turnpike provided detailed information about trends regarding vehicle class and payment method at each plaza. As reported in Chapter 2, CDM Smith analyzed a comprehensive database of E-ZPass transactions covering calendar years 2012 through the first half of 2017. Using historic Turnpike data related to transaction share by vehicle class (Classes 1 through 10) and transaction share by payment method (cash, WV E-ZPass, and Non-WV E-ZPass), as well as general industry trends, CDM Smith prepared projections of anticipated class and payment shares at each plaza for the forecast horizon.

Alternative toll policies contemplated by WVPA involve the introduction of a revised flat fee program available only to Class 1 vehicles using a WV E-ZPass, and toll rate increases for other customers including Class 1 customers not in the revised flat fee program and all Classes 2-10 customers. To evaluate customer responses to these changes, separate models were developed to forecast annual T&R for Class 1 and Classes 2 through 10. The next section of this chapter is focused on the Class 1 forecasting approach, and has an explanation of how the payment choice model derived from the SP survey was used to describe the way Class 1 customers would choose between entering the flat fee program, paying higher tolls, or stopping use of the Turnpike. For the purposes of analysis and this discussion, CDM Smith has assumed that all customers using Class 1 vehicles will choose a payment method at the beginning of the year and use that payment method throughout that year. WVPA will investigate and may implement ways for customers to join the flat fee program throughout the year. This chapter also contains a description of the forecasting approach for Classes 2-10, that includes customers’ response to higher toll rates.

At the end of the process, annual forecasts by plaza for Class 1 and Classes 2-10 are combined to produce systemwide T&R estimates, covered in Chapter 6 of this report. Sensitivity tests on important variables are presented in Chapter 7.

5.3 Class 1 Forecasting Approach

The Class 1 passenger vehicle forecasting approach is illustrated in more detail on **Figure 5-2**.

5.3.1 Class 1 Model Inputs

Primary inputs to the Class 1 model are below.

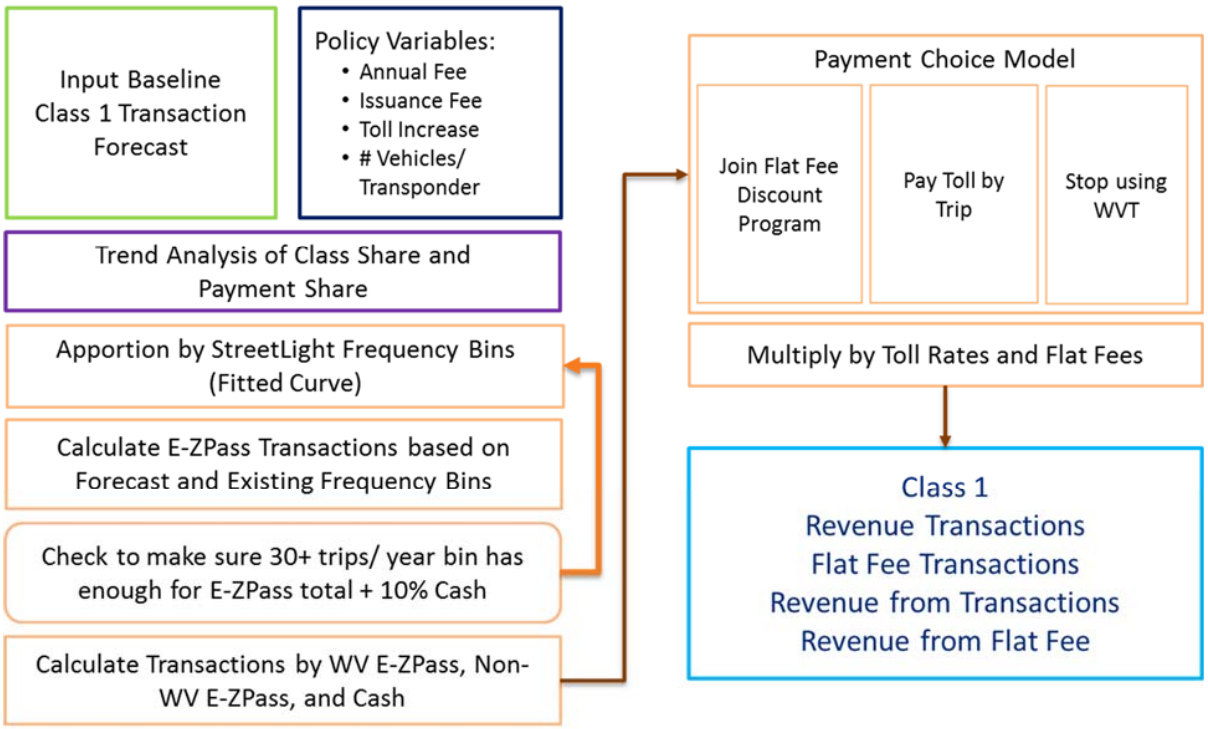
Policy variables include the cost of the annual flat fee providing unlimited use of the Turnpike through a WV E-ZPass; WV E-ZPass transponder issuance cost; number of vehicles that could be registered per transponder; and toll rate increase for Class 1 vehicles paying at toll plazas.

Baseline Class 1 (PC) transaction forecast includes estimates of future annual transactions derived from the econometric analysis, assuming no change in current toll policies.

Future toll class and pay share proportions include projections of future shares of Class 1 vehicles among PC transactions, and methods of payment (cash, WV, and Non-WV E-ZPass) for Class 1 vehicles assuming no change in current toll policies.

Frequency of use includes data related to frequency of use under current toll policies derived from the E-ZPass database and from the StreetLight Data sample for overall customers. Assumptions were made to derive the frequency of use for cash customers since this information was not directly available from the collected data.

Figure 5-2 Class 1 Passenger Vehicle Forecasting Approach



Payment choice model by payment type and frequency of use was based on responses to the SP survey. The payment choice model describes the customer decision-making as they will either join the revised flat fee program, choose to pay higher tolls, or stop making trips on the Turnpike. The payment choice model also provides estimates of the additional trips made by customers that entered the flat fee program (trip induction or more travel due to the lower cost) and the reduced number of trips for customers that are facing higher toll rates per plaza (trip suppression less travel).

5.3.2 Class 1 Model Logic

The Class 1 forecasting model is a spreadsheet-based tool used to estimate annual T&R for each plaza, and for the various payment methods that will be available to Class 1 customers. The same process is repeated at each of the four plazas for all model years, before the results are combined into systemwide estimates. The process starts with Baseline conditions before applying the payment choice results representing customer responses to the change in toll policies. The model separates all transactions and customers by payment type (cash, WV, and Non-WV E-ZPass) and frequency of use. The frequency of use is organized by "bins" according to the number of trips per year (1, 2, 3…, 9, 10-19, 20-29, and 30+).

Within a given frequency bin and payment type, all customers are assumed to make similar decisions in terms of payment choice and level of trip inducement or suppression. More frequent customers are more likely to take advantage of the flat fee program than are customers who rarely use the Turnpike. Customers who already have a transponder are more likely to participate in the flat fee program. These theories were tested, verified and quantified through the SP survey. The results are embedded in the Multinomial Logit (MNL) models used in the payment share calculator.

For both WV and Non-WV E-ZPass customers, distributing trips and customers among the frequency bins was done by directly using the distribution derived from the 2016 transaction database. It was assumed that the frequency distribution for WV and Non-WV E-ZPass customers would remain unchanged throughout the forecast horizon although the overall number of customers and transactions can increase. For cash customers, such frequency distribution was not directly available from any available data sources. Data from StreetLight Data, Inc. provided information about frequency distribution for the overall customer population, including all payment types (refer to Chapter 2 for more details on the StreetLight data and results). The number of cash customers within each frequency bin was derived by subtracting the WV E-ZPass and Non-WV E-ZPass customers from the overall customer population distributions.

This overall process is repeated for each model year. First, the baseline transaction forecast and the forecast of class share and payment share for each model year are combined with the E-ZPass frequency shares to determine overall number of customers by each payment type prior to applying the payment choice model. The payment choice model is then applied based on the scenario characteristics and resulting customer behavior and transactions are estimated.

The main results for Class 1 customers are system-wide estimates of annual toll transactions and revenue by payment type and the annual amount of flat fee transactions and revenue. The model is applied separately to each toll plaza. However, a relatively large portion of customers travel through more than one plaza on a single one-way trip and are almost certain to use the same payment method for the entire one-way trip. The total number of transactions and toll revenue under modeled conditions is the sum of the results from all four plazas. Since payment choice is modeled at each plaza, these results represent average payment choice by plaza, not by individual customer. However, customers in the flat fee program will only pay the fee once and consequently, the total amount of flat fee revenue is the sum of results from all four plazas divide by the average number of plazas used by customers who choose the flat fee program. The estimates are prepared with the assumption that on average customers travel through three plazas during a one-way trip. This approach was validated by comparing the number of E-ZPass customers observed at each plaza with the overall number of WV E-ZPass registered accounts.

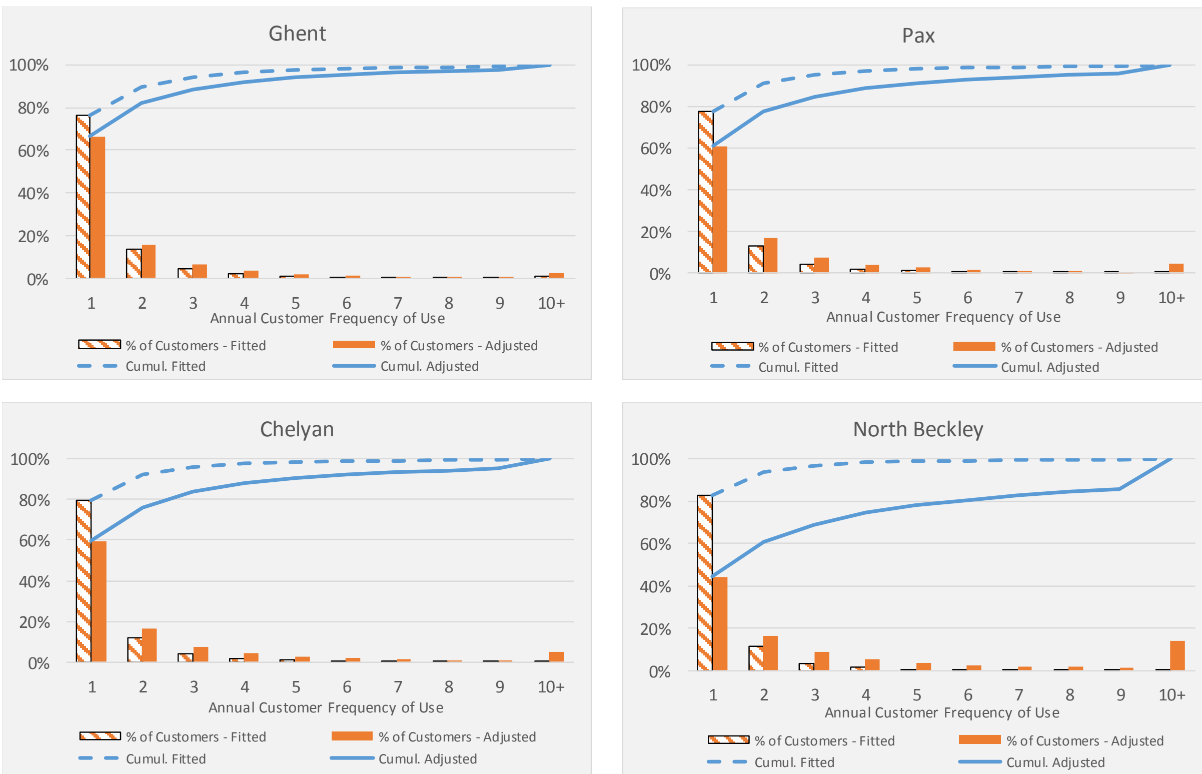
5.3.3 Frequency Distribution Curve Fit and Adjustment

In general, the previously described approach worked well and produced a realistic number of customers and trips for all frequency bins. However, it was recognized that the original StreetLight data was “lumpy,” meaning that there were some gaps at higher frequencies and some irregularities in the frequency distributions. For these reasons, using regression analysis, Pareto functions were fit to the frequency distribution for each plaza. The Pareto function is a probability distribution used to describe socio-economic phenomena that are unequally distributed, such as wealth among individuals or city size. At each of the four plazas, the Pareto functions fit the StreetLight data on frequency of use very well, with R squared statistics exceeding 0.9985. When the results were reviewed, the 30+ frequency bin of all customers did not have enough transactions to cover the estimated E-ZPass transactions. The

Pareto distributions at each plaza and model year were then adjusted so that the number of overall transactions in the 30+ trips per year bin exceeded the number of E-ZPass transactions in that bin by 10%. In other words, it was assumed there would always be some cash transactions in the 30+ frequency bin.

Figure 5-3 illustrates this two-step fit and adjustment process. The horizontal axis represents the number of annual trips through a given toll plaza in a year. The vertical axis represents the share of plaza customers within each frequency bin for all methods of payment. The hatched bars correspond to the distribution that best fit the StreetLight data. The solid orange bars correspond to the distribution adjusted to increase the number of high frequency customers and trips. The adjusted distribution decreases the share of customers making one trip per year and increases the share of customers in all other frequency categories. The dashed and solid lines represent cumulative frequency distributions of the fitted and adjusted frequency distributions.

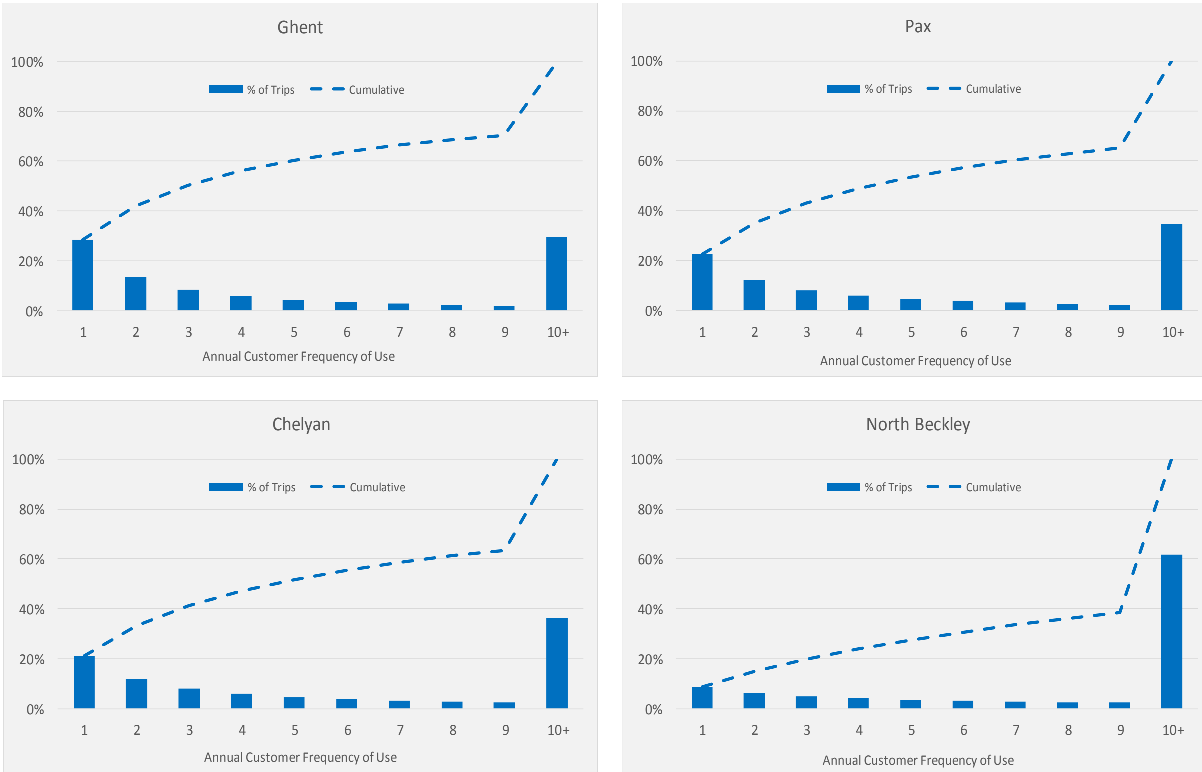
Figure 5-3 Annual Frequency of Use for All Payment Method Class 1 Customers



Source: StreetLight Data and CDM Smith Analysis

Figure 5-4 contains similar information for the number of transactions made by customers in each bin. So, while the number of customers in the ten or more trips per year bin is relatively low, they represent a much larger proportion of all transactions on the Turnpike, since they make more trips. Conversely, the proportion of customers in the one trip per year bin is very high, but together they pay a relatively smaller proportion of the toll transactions.

Figure 5-4 Annual Frequency of Use for All Payment Method Class 1 Transactions



Source: StreetLight Data and CDM Smith Analysis

5.3.4 Class 1 Proportion and Payment Shares

In addition to the Class 1 frequency of use modeling, changes in the share of Class 1 vehicles among Classes 1-4 needed to be determined since the Baseline forecast only breaks out to PCs (Classes 1-4) and CVs (Classes 5-10). It is expected that the proportion of transactions from each vehicle class on the Turnpike will slowly change due to changes in overall demand and vehicle fleet. However, based on 2012-2016 trends, changes in future year class shares are expected to be small. The proportion of Class 1 transactions among all passenger car transactions (Classes 1-4), which is currently around 97% to 98%, is assumed to decrease slightly over the forecast period. These levels are a basic input to the Class 1 model.

It was also necessary to remove Class 1 commercial vehicles using a WV E-ZPass since commercial vehicles are not eligible for the revised flat fee program. There were approximately 800,000 such transactions in CY 2017. Based on information available, it was assumed these transactions divide equally among the mainline plazas and grow with the baseline PC forecast over time. Further details are provided below.

Payment shares by vehicle class are also expected to change over the forecast horizon as more customers use electronic toll collection. For the Baseline forecast (without toll policy changes) at the mainline plazas, the transaction cash share for Class 1 is assumed to decline from about 75% to 55%, while WV E-ZPass share is assumed to increase from about 15% to 20% and Non-WV E-ZPass is assumed to increase from about 10% to 25%. At North Beckley, Class 1 transaction cash share is assumed to drop from about 60% to 37%, WV E-ZPass share is assumed to increase from about 30% to

47%, and the share of Non-WV E-ZPass transactions is assumed to increase from 10% to 16%. These baseline levels are an input to the Class 1 model.

The proposed revised flat fee program will affect the Class 1 payment shares since, based on the SP survey and choice modeling results, participants in the program will draw from each payment type, but not proportionally. The payment choice model describes the way that customers will choose amongst the new set of payment options (flat fee program, cash, WV E-ZPass, and Non-WV E-ZPass). The number of customers after the choice is lower recognizing some customers will stop using the Turnpike. The number of trips is treated similarly, except that there are some additions and other subtractions. Some customers will stop using the Turnpike; another set of customers will decide to join the revised flat fee program and make more trips because of the lower cost (toll induction); and a third set of customers will choose to continue paying toll but make fewer trips on the Turnpike because of the higher toll rate (toll suppression). The payment choice model describes customer behavior differently based on the original payment method and the frequency of use as described in Chapter 3. In general, customers who are more frequent users of the Turnpike across all payment methods are more likely to join the revised flat fee program. Customers who have a Non-WV E-ZPass are less likely to participate in the revised flat fee program.

Example scenarios are covered in the next section and describe the change in payment shares under these scenarios in more detail.

5.3.5 Class 1 Model Outputs

Class 1 forecasts were first computed by plaza, and then combined into systemwide results. Results were assembled for modeled calendar years 2018, 2019, 2020, 2021, 2022, 2030, 2040 and 2050, and then interpolated to derive an annual stream of revenue from 2018 through 2050.

Model outputs include transactions broken down by payment type:

- Flat fee program transactions (no toll payment)
- Cash transactions
- WV E-ZPass transactions (not part of the revised flat fee program)
- Non-WV E-ZPass transactions

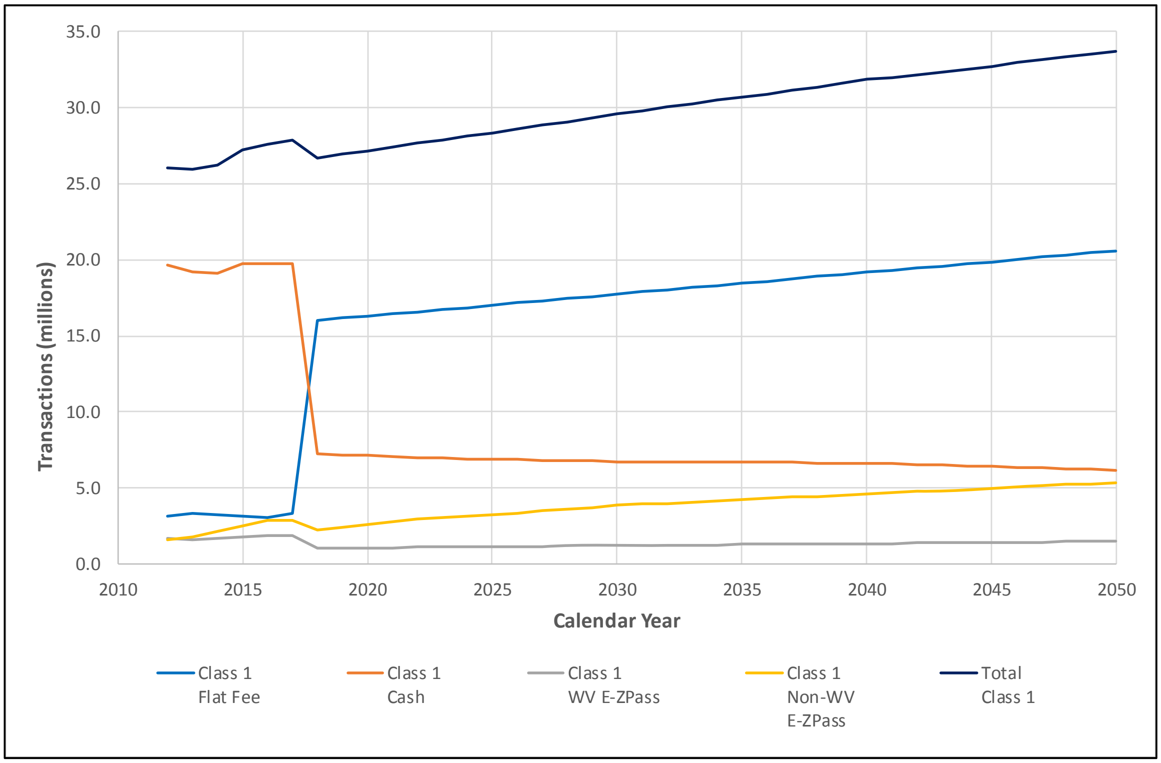
Similarly, revenue is broken down by flat fee program fees, and toll revenue by each payment type (cash, WV E-ZPass, and Non-WV E-ZPass).

To test the Class 1 model, two examples were set-up:

- Example 1: $8 flat fee program beginning in January 2018
- Example 2: $25 flat fee program beginning in January 2018

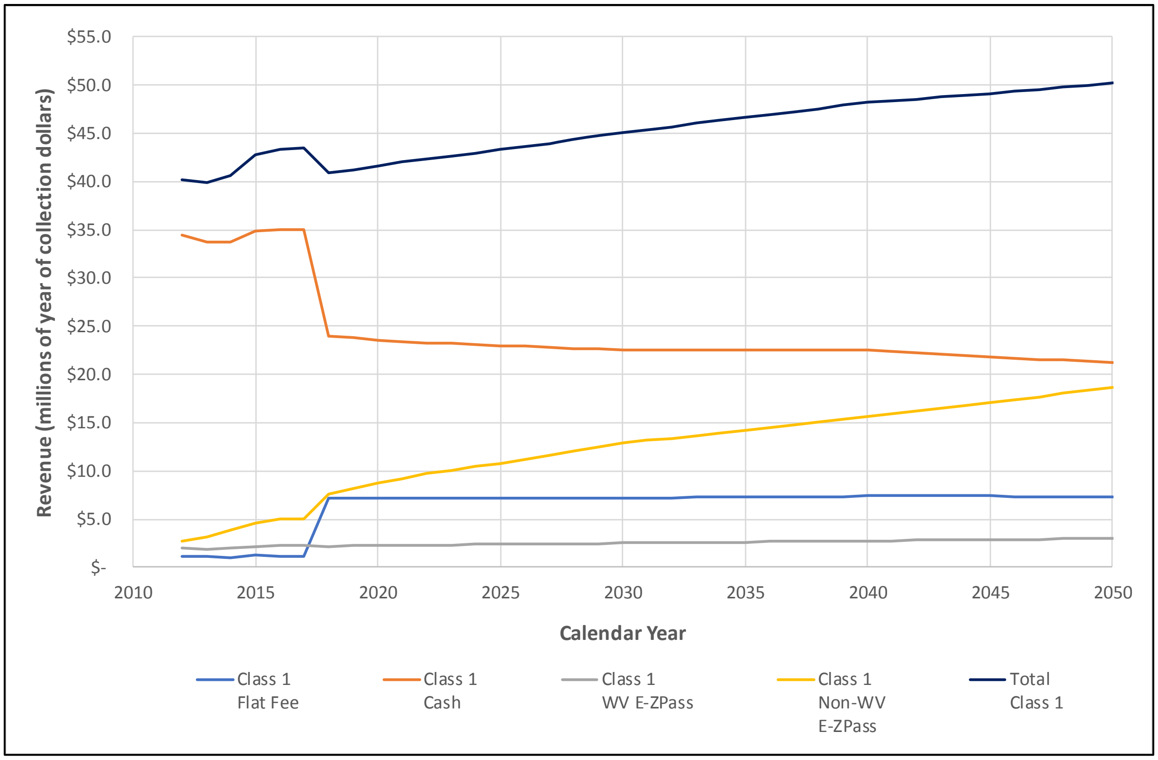
Common assumptions include the doubling of the existing Class 1 toll rate to $4.00 at mainline plazas and to $0.80 at North Beckley plaza for all customers not participating in flat fee program, a $13 issuance fee per WV E-ZPass transponder, and one vehicle per transponder in the revised flat fee program. No further toll rate or flat fee program increases are assumed for these examples. **Figures 5-5** and **5-6** illustrate the Example 1 results.

Figure 5-5 Class 1 Transactions Example 1 - $8 Flat Fee Program



Source: CDM Smith Analysis

Figure 5-6 Class 1 Revenue Example 1 - $8 Flat Fee Program



Source: CDM Smith Analysis

Example 1 helps demonstrate the behavior of Class 1 customers. Prior to the toll increase and revised flat fee program, cash transactions make up the major share of Class 1 transactions, and the other three payment types are much smaller shares. Flat-fee transactions prior to 2018 refer to those participating in the existing flat fee program (Personal Discount Plan 1 described earlier). After the toll policy changes, flat fee program participation is expected to rise dramatically as shown in Figure 5-5, while cash payments drop markedly. Under the revised program, the flat-fee transactions travel without paying toll. However, the flat fee program also affects WV E-ZPass and Non-WV E-ZPass customers, with both decreasing. Over the long term, most of the growth in transactions is concentrated in the flat fee program and some growth in the Non-WV E-ZPass transactions.

In terms of revenue, current flat fee program revenue is roughly $1.2M per year and the revised flat fee program revenue is expected to be about $7.1M per year. The change is not as dramatic as it is in transactions since the flat fee program allows participants unlimited travel for a relatively low annual fee. A reduction in WV E-ZPass revenue is seen due to most of them entering the flat fee program. Non-WV E-ZPass revenue rises due to the large toll increase, despite the decrease in transactions for this group. Over time, flat fee revenue does not change much. However, Non-WV E-ZPass revenue increases through natural growth. It is interesting to note that initially the estimates indicate a reduction in both Class 1 transactions and revenue.

5.3.6 Class 1 Details for Example 1

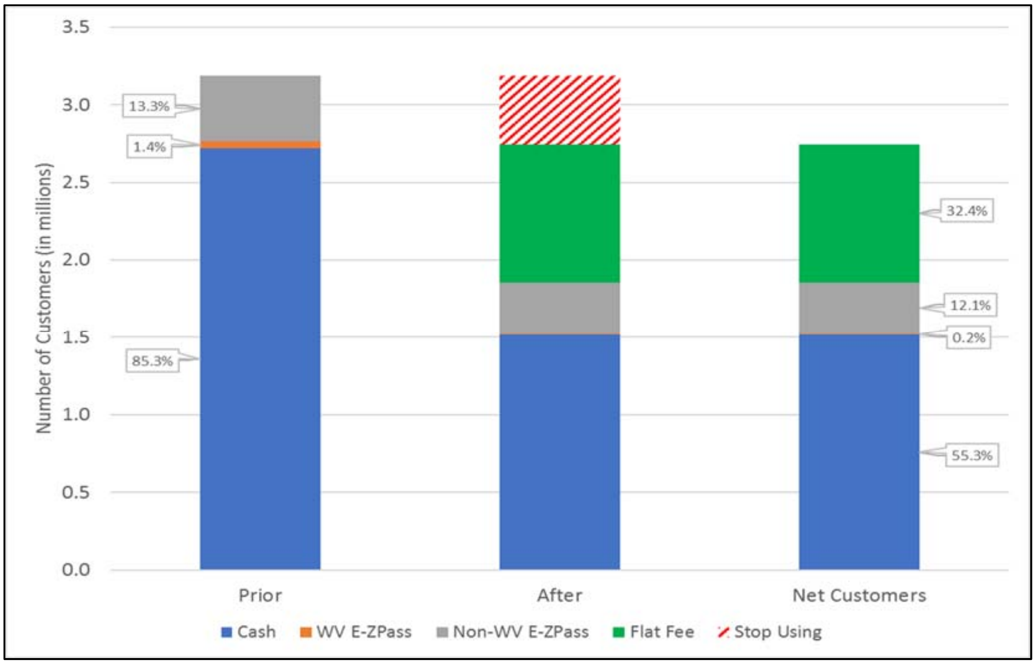
This section provides additional details about transaction and revenue estimates for calendar year 2018, focusing on customer choices following the implementation of the revised flat fee program. All the information presented in this section is related to Example 1, but illustrates how the payment choice model describes Class 1 customer behavior under the new proposed toll policies. Note that Class 1 commercial vehicles were removed from this analysis as they are not eligible to enter the flat fee program.

Prior and After Flat Fee Program

Figures 5-7 and **5-8** illustrate the resulting payment choices, in terms of the number of customers and transactions. In both figures, “prior” and “after” describe conditions without and with the proposed flat fee program. The statistics for the “prior” condition come from the Baseline forecast and the statistics from the “after” condition come from the Class 1 model.

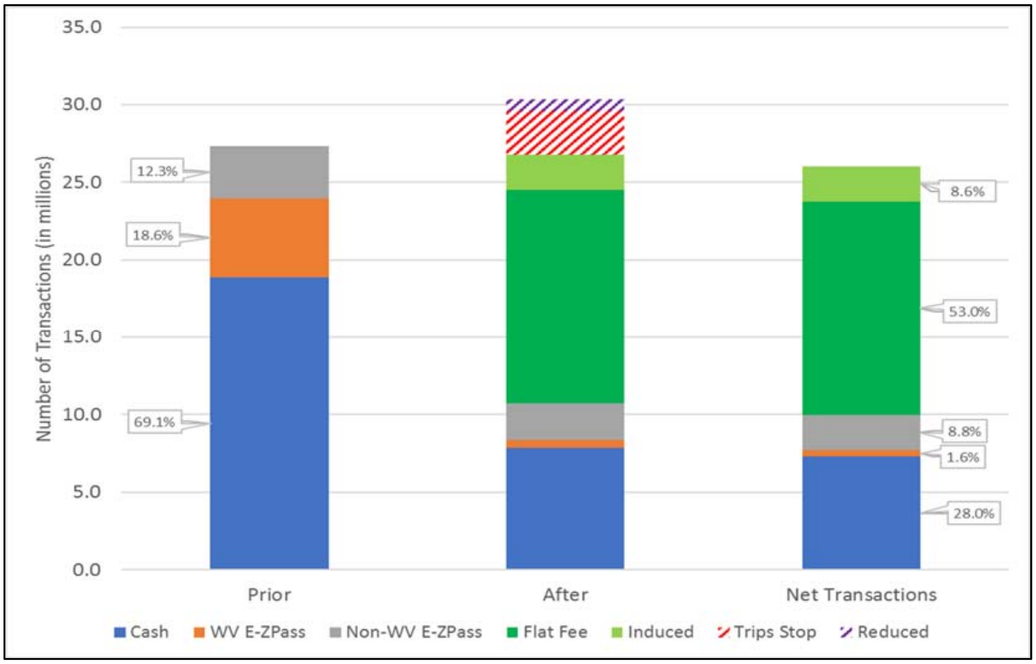
Figure 5-7 shows that under “prior” conditions, most Class 1 customers opt for paying cash (about 85%), 13% use Non-WV E-ZPass, and about 1% use WV E-ZPass transponders. After the introduction of the flat fee program, about 32% of the remaining customers join the flat fee program (in green), and the rest pay higher tolls. About 55% of the customers pay cash (blue), and 12% are Non-WV E-ZPass customers (gray). These are typically infrequent users and out-of-state customers. The WV E-ZPass toll-paying customers almost disappear since they are extremely likely to enter the flat fee program. Some customers are forecasted to stop using the Turnpike due to the higher tolls implemented for all methods of payments that are not the flat fee program, resulting in a 14% decrease in the net number of customers (in hatched red). Including those customers who stop using the Turnpike, the number of customers “prior” and “after” are identical at each plaza.

Figure 5-7 Example 1 Class 1 Customers - Prior & After Flat Fee (2018)



Source: CDM Smith Analysis

Figure 5-8 Example 1 Class 1 Transactions - Prior & After Flat Fee (2018)



Source: CDM Smith Analysis

Figure 5-8 contains similar information in terms of number of transactions. Prior to the implementation of the flat fee program, 69% of Class 1 transactions are paid by cash, 19% are WV E-ZPass and 12% are Non-WV E-ZPass. Customers paying with cash are relatively infrequent travelers. Customers using the WV E-ZPass to pay tolls are typically more frequent users of the Turnpike.

The bar representing the "After" flat fee condition includes transactions that no longer occur either due to customers eliminating their use of the Turnpike (in hatched red) or reducing their number of trips (in hatched purple). All transactions shown in green are made within the flat fee program; the induced trips corresponding to increased trip-making because there is no incremental cost after paying the flat fee, are shown in lighter green. Transactions made by customers in the flat fee program have the annual fee per customer but no toll revenue.

After the revised flat fee program is implemented, there is a 5% net decrease in total number of transactions. The flat fee transactions account for the highest share (62% including induced trips) of Class 1 transactions. These transactions do not pay a toll, as these customers have already paid the flat fee. Cash represents 28% of the transactions. About 1% of the trips are paid using WV E-ZPass and 9% are paid using Non-WV E-ZPass.

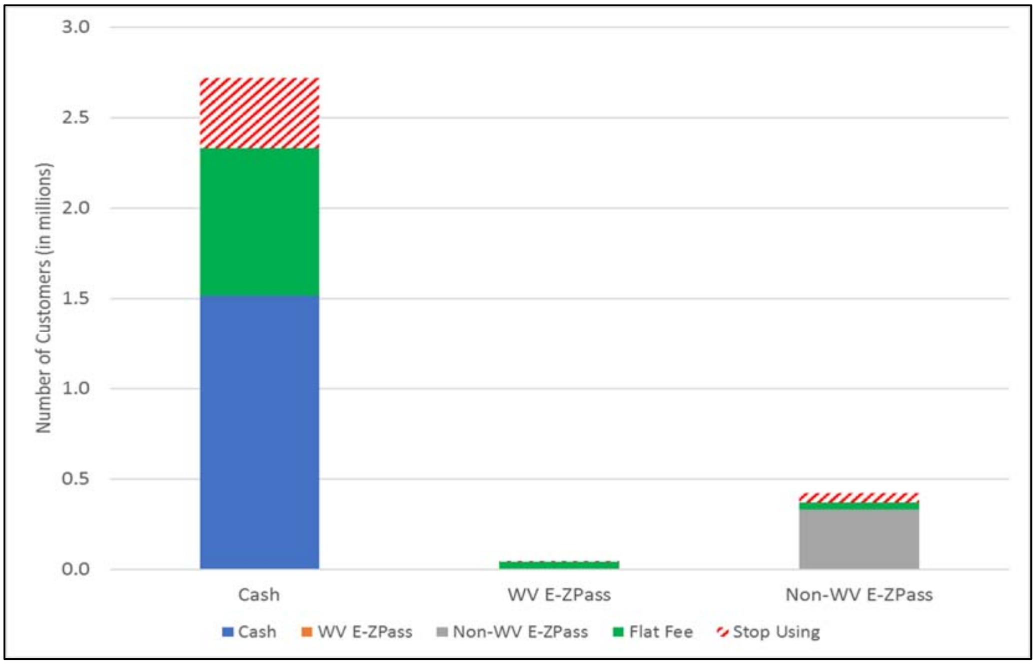
Choices Based on Original Payment Method

Figures 5-9 and **5-10** further depict results regarding payment choices, in terms of the number of customers and the number of transactions respectively. In both figures, customers or transactions are organized based on their original payment methods, i.e. prior to application of the revised flat fee program. These are cash, WV E-ZPass, and Non-WV E-ZPass.

Figure 5-9 illustrates customer choices of payment method "after" the revised flat fee program is introduced based on their original payment method. It shows that among customers that originally paid cash, most customers continue to pay cash (56% shown in blue), a significant portion opt for the flat fee program (30% in green), and a significant number of customers stop using the Turnpike after the introduction of doubled toll rates (14% in hatched red). Among WV E-ZPass customers, a relatively small number to start, most opt for the revised flat fee program (83%), a significant portion continue to pay toll using WV E-ZPass (12%), and some customers stop using the Turnpike (5%). Among Non-WV E-ZPass customers, a relatively small portion opt for the revised flat fee program (9%), but the majority continue to pay tolls with their Non-WV E-ZPass (79%), and a sizable portion of customers stop using the Turnpike altogether (12%). These results make sense because customers using WV E-ZPass tend to be relatively frequent users and customers using Non-WV E-ZPass are generally infrequent users of the Turnpike.

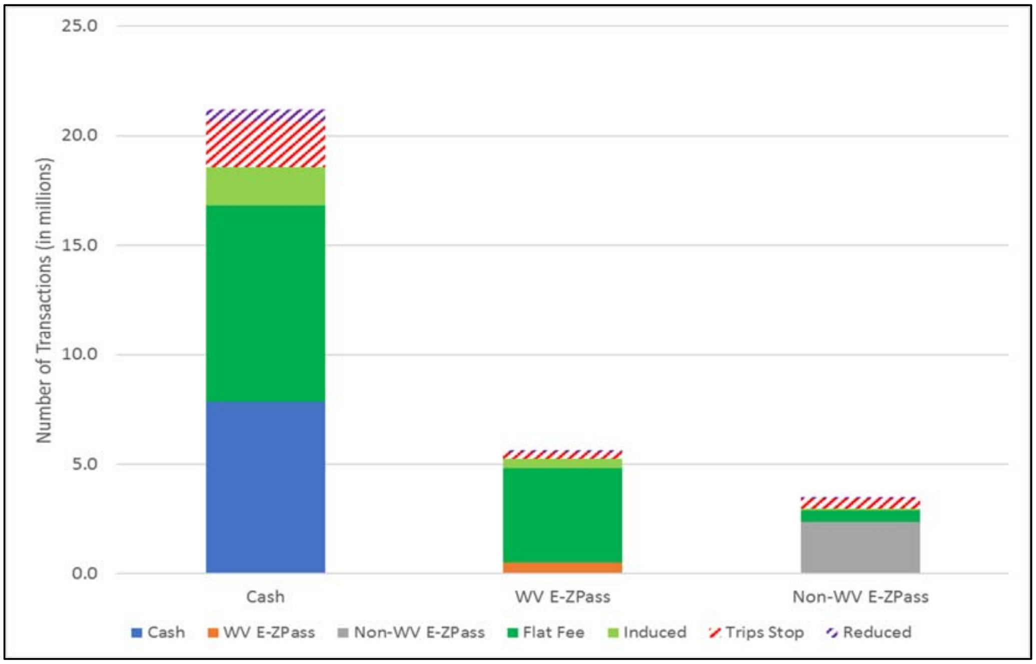
Figure 5-10 presents similar information in terms of number of transactions. Among transactions that would have been paid in cash before the revised flat fee program is applied, there would be about 9% additional trips induced due to customers switching to the flat fee program. The toll increase causes other customers to stop using the Turnpike reducing transactions by 11%. In addition, those who continue to pay tolls reduce their total number of trips by another 3%. The net effect is a reduction of about 5% of the original cash paying trips. Of the remaining original cash trips, about 40% are paid with cash and 60% are paid with the flat fee program.

Figure 5-9 Example 1 Class 1 Customer Choices Based on Original Payment Method (2018)



Source: CDM Smith Analysis

Figure 5-10 Example 1 Class 1 Transactions - By Original Payment Method (2018)



Source: CDM Smith Analysis

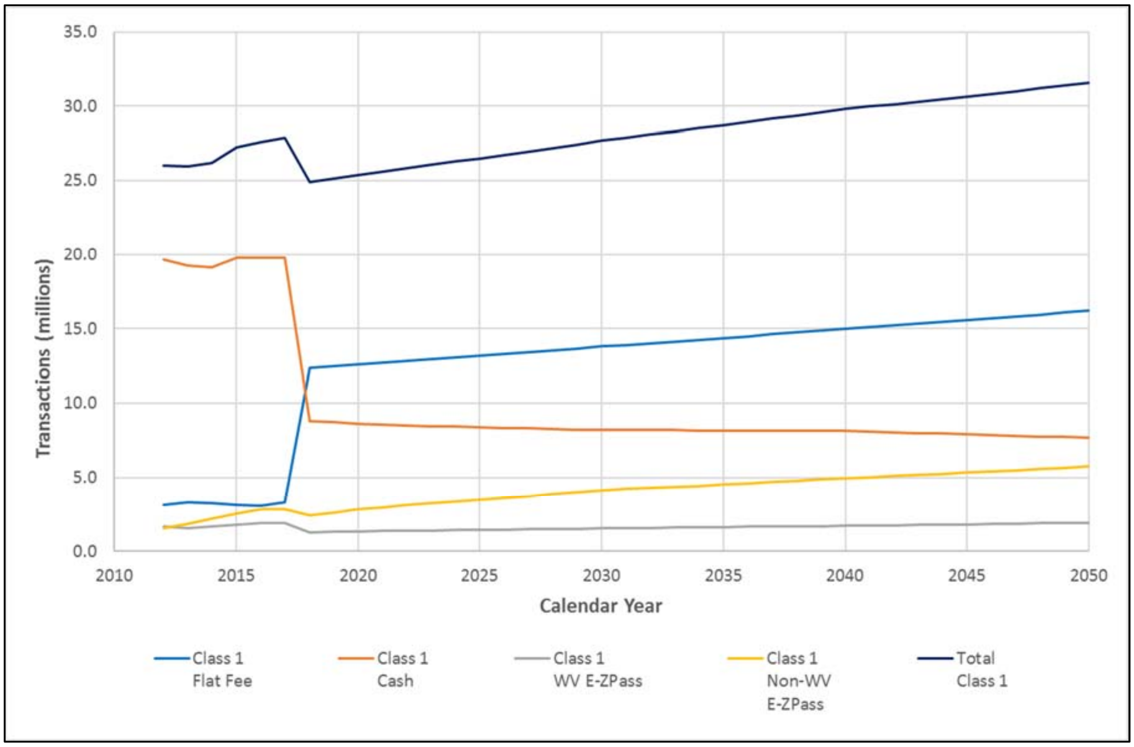
Among transactions that would have been paid by WV E-ZPass before the revised flat fee program, there would be induced trips due to customers switching to the flat fee program of about 8% additional transactions. The toll increase causes other customers to stop using the Turnpike reducing transactions by 6%. In addition, those who continue to pay tolls reduce their total number of trips by another 2%. The net effect is just about no change in transactions from WV E-ZPass. Of the remaining original WV E-ZPass trips, about 8% are paid with WV E-ZPass and 92% are paid with the flat fee program. Once again, customers paying tolls with a WV E-ZPass are generally frequent users of the Turnpike.

Finally, among transactions that would originally be paid by Non-WV E-ZPass before offering the revised flat fee program, there would be induced trips due to customers switching to the flat fee program of about 2% additional transactions. The toll increase causes other customers to stop using the Turnpike reducing transactions by 14%. In addition, those who continue to pay tolls reduce their total number of trips by another 3%. The net effect is a reduction of about 14% in transactions from Non-WV E-ZPass. Of the remaining original Non-WV E-ZPass trips, about 79% are paid with Non-WV E-ZPass and 21% actually shift to the flat fee program. Most customers paying tolls with a Non-WV E-ZPass are infrequent users of the Turnpike.

Example 2 has similar results to Example 1, but since the annual fee is higher (at $25) fewer customers choose the flat fee program. **Figures 5-11** and **5-12** illustrate the expected effect on transactions and revenue.

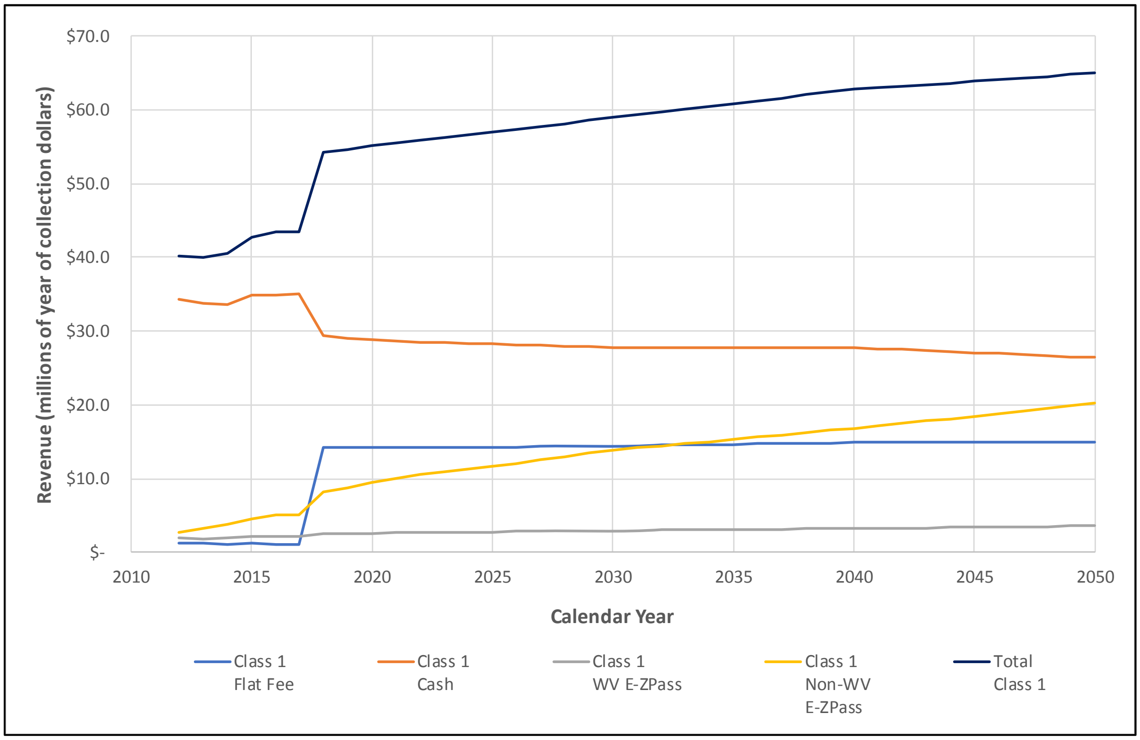
Figure 5-11 shows the conversion to the flat fee program is still strong, but not as strong as Example 1. Because of the higher annual fee, more customers continue to pay with Cash, WV E-ZPass, and Non-WV E-ZPass in Example 2. Overall transactions are somewhat lower. However, the flat fee revenue as shown in Figure 5-12 is nearly double what it is in Example 1 due to the much higher flat fee. Also, revenue from the other three payment types is higher since fewer people enter the flat fee program and they pay the higher tolls.

Figure 5-11 Class 1 Transactions Example 2 - $25 Flat Fee Program



Source: CDM Smith Analysis

Figure 5-12 Class 1 Revenue Example 2 - $25 Flat Fee Program



Source: CDM Smith Analysis

5.3.7 Class 1 Commercial Vehicles

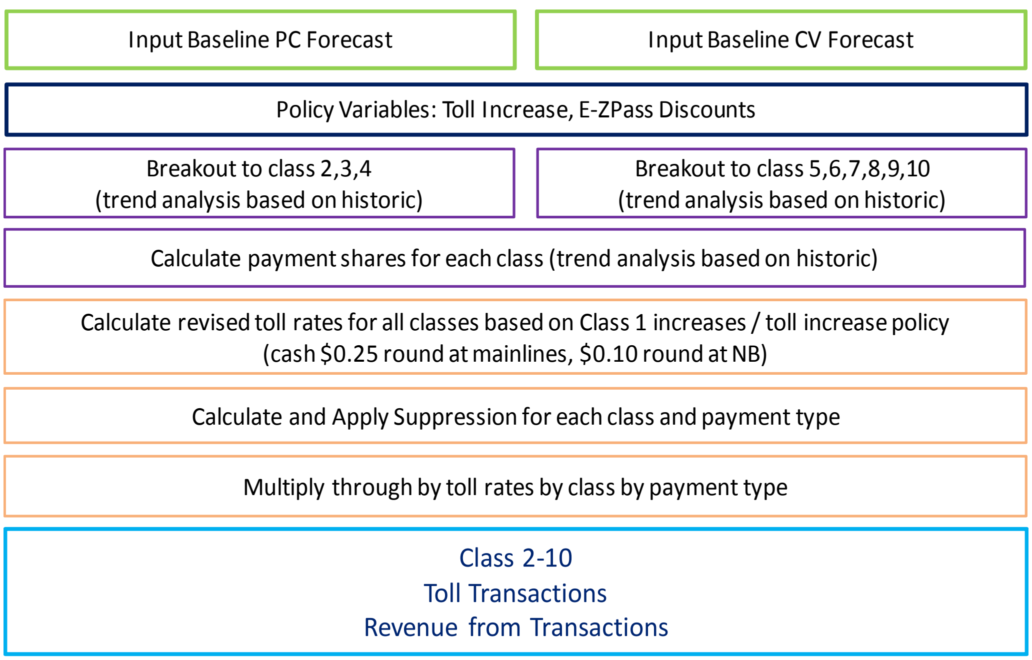
As noted above, the toll policies adopted by WVPA involve the introduction of a revised flat fee program available only to Class 1 passenger cars using a WV E-ZPass. The flat fee program will not be available to the Class 1 commercial vehicles; instead these vehicles will continue to purchase a WV E-ZPass Class 1 Commercial WV E-ZPass and pay tolls per plaza at a discounted rate.

The process that was followed to account for Class 1 commercial vehicles involved the following steps: 1) Estimate the number of Class 1 commercial vehicles based on 2017 actual transactions and the growth rate of baseline passenger car transactions; 2) Remove one third of the total Class 1 commercial vehicles at each of the three mainline plazas; 3) Perform Class 1 T&R forecasts for passenger cars only; 4) Assume that all Class 1 commercial vehicles use the WV E-ZPass payment option; 5) Treat Class 1 commercial vehicles similar to Classes 2-10 including using the same elasticity to estimate trip reduction and multiply through by appropriate toll rate; and 6) Combine transactions and revenue for all Class 1 vehicles.

5.4 Classes 2-10 Forecasting Approach

The Classes 2-10 forecasting approach is illustrated on **Figure 5-13**.

Figure 5-13 Classes 2-10 Forecasting Approach



The econometric model provided the Baseline forecast for PCs (Classes 1-4) and CVs (Classes 5-10), assuming no changes in current toll rate policies. The review of historical transactions on the Turnpike provided details about trends regarding vehicle class and payment method at each plaza. These historic trends on the Turnpike, combined with general industry trends, were used to prepare projections of anticipated class and payment shares at each plaza for the forecast horizon.

As noted earlier, the share of Class 1 transactions as a proportion of Classes 1-4 transactions is expected to change very little, and thus the share of Classes 2-4 is assumed to change very little over time. The proportion of Class 8 transactions (5 axle semi-trailer truck) among CV transactions which is currently around 85%, is assumed to decline by 2% to 3% at the mainline plazas over the forecast horizon. At North Beckley, this share is assumed to increase from about 75% today to 80% in the outer years of the forecast.

In terms of payment shares, Classes 2-4 customers paying with cash is assumed to drop from about 90% to 85%, while WV E-ZPass share remains at 4% throughout, and the Non-WV E-ZPass share is expected to increase from 6% to 11%. The cash share of CV transactions is assumed to drop from about 25% to 12%, while WV E-ZPass share is assumed to drop from about 15% to 12%, and Non-WV E-ZPass is assumed to increase from 60% to 76%.

For Classes 2-10, a toll rate elasticity was used to estimate customer response to higher toll rates, resulting in fewer transactions. The elasticity estimate for the Class 2-10 model was based, in part, on a review of historical Turnpike transaction trends following the last toll rate increase. Current toll rates and discount plans became effective on August 1, 2009. The Class 1 tolls at mainline plazas increased from $1.25 to $2.00 for cash customers (a 60% increase). Rates for all classes of commercial vehicles also increased by approximately 60%. With the introduction of the commercial discount programs, WV E-ZPass commercial account holders received a 20% relative savings, and Non-WV E-ZPass holders received a 13% relative savings from the new toll rate. Because the new rate became effective in the middle of the year, results of this increase appeared in two fiscal years (2009 and 2010). The increases in annual toll revenue were pronounced. Annual transactions, however, actually increased in each of these two years. (See Chapter 2 for additional detail.)

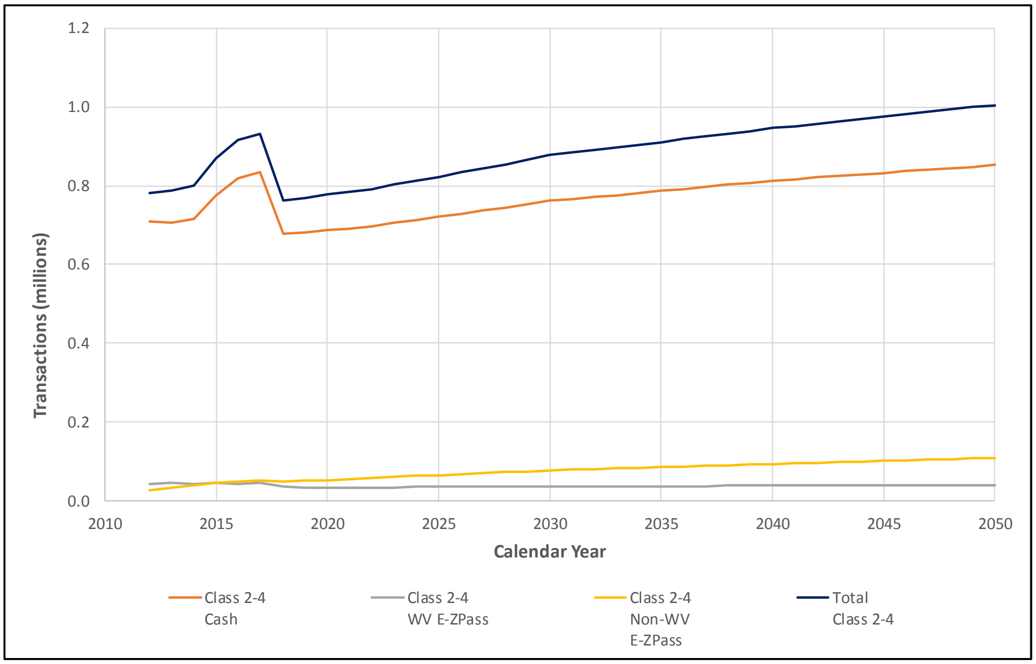
The econometric analysis was used (with effective toll rates as an explanatory variable) to help estimate the effect of toll changes on historical transactions. While only statistically significant for commercial vehicles at two of the mainline plazas, a toll elasticity could be approximately determined from the historical toll rate and transaction patterns. Based on model coefficients, the historical commercial vehicle toll rate elasticity was estimated to be -0.156 for the 2009 increase.

The toll rate increase for this forecast is higher than the increase in 2009, at 100%, i.e., a doubling of toll rate. While elasticities do not vary with the level of price adjustment, a higher elasticity than that proxied by the econometric model for the historical increases was applied in this forecast. The toll rate elasticity was adjusted to-0.196.

Note that when testing alternative toll rates, cash rates at mainline plazas were always rounded to the $0.25, while North Beckley cash rates were rounded to $0.10. E-ZPass toll rates are rounded to the $0.01.

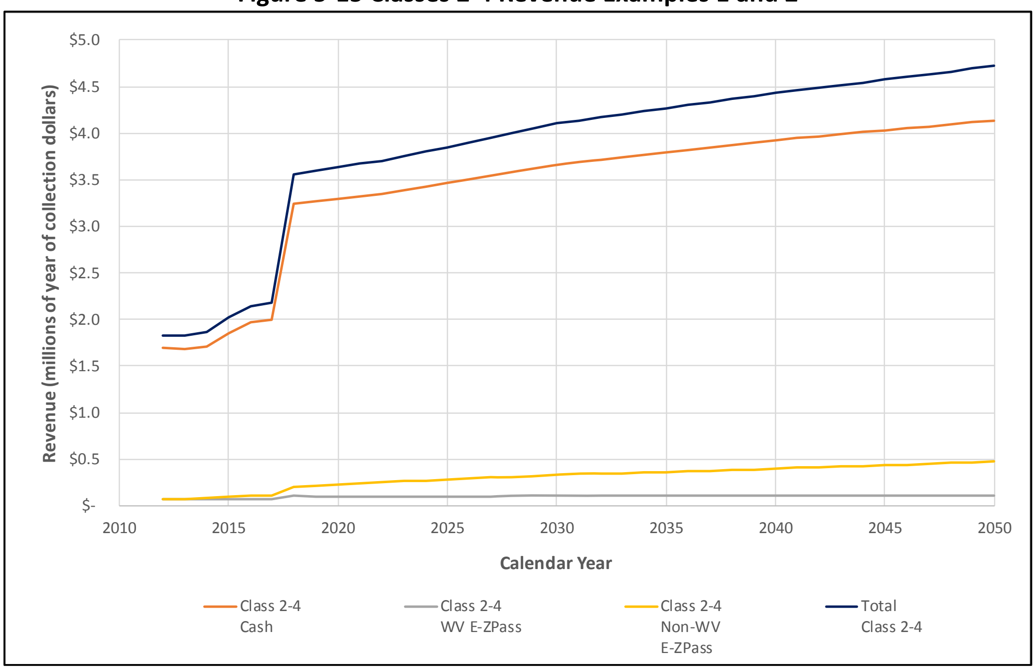
For the two examples described earlier in this chapter, Classes 2-10 toll rates are the same for Example 1 and 2, essentially representing a doubling of the toll rates from current policy. **Figures 5-14** and **5-15** represent the results for Classes 2-4 total transactions and revenue respectively.

Figure 5-14 Classes 2-4 Transactions Examples 1 and 2



Source: CDM Smith Analysis

Figure 5-15 Classes 2-4 Revenue Examples 1 and 2

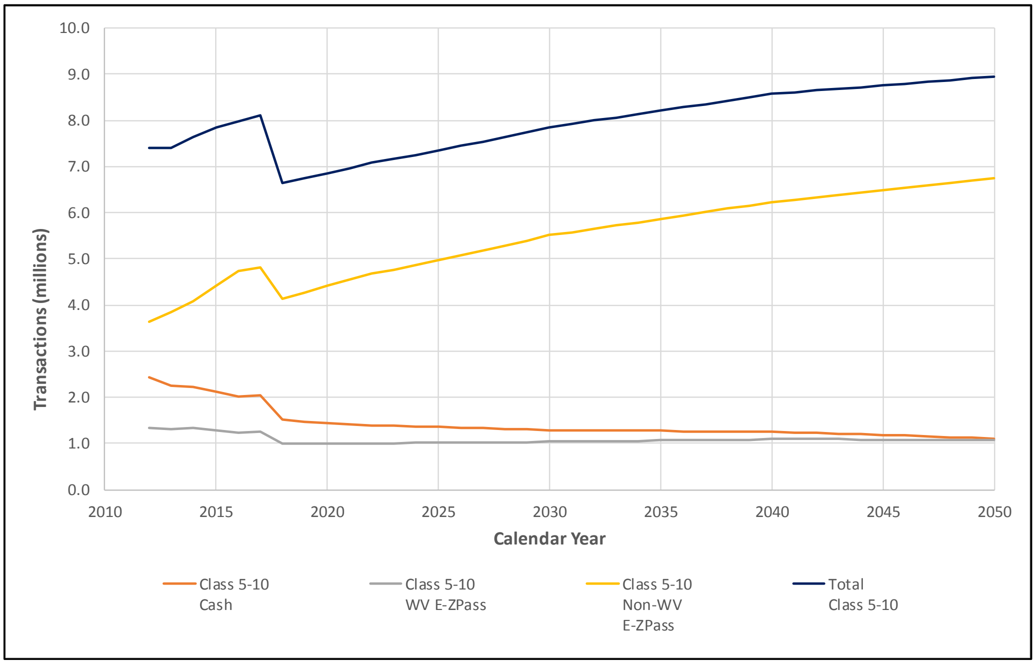


Source: CDM Smith Analysis

In both Examples 1 and 2, the Classes 2-4 transactions decrease significantly after the toll increase but continue to grow over time eventually exceeding the levels prior to the toll rate increase. Revenue increases significantly due to the toll increase and grows over time.

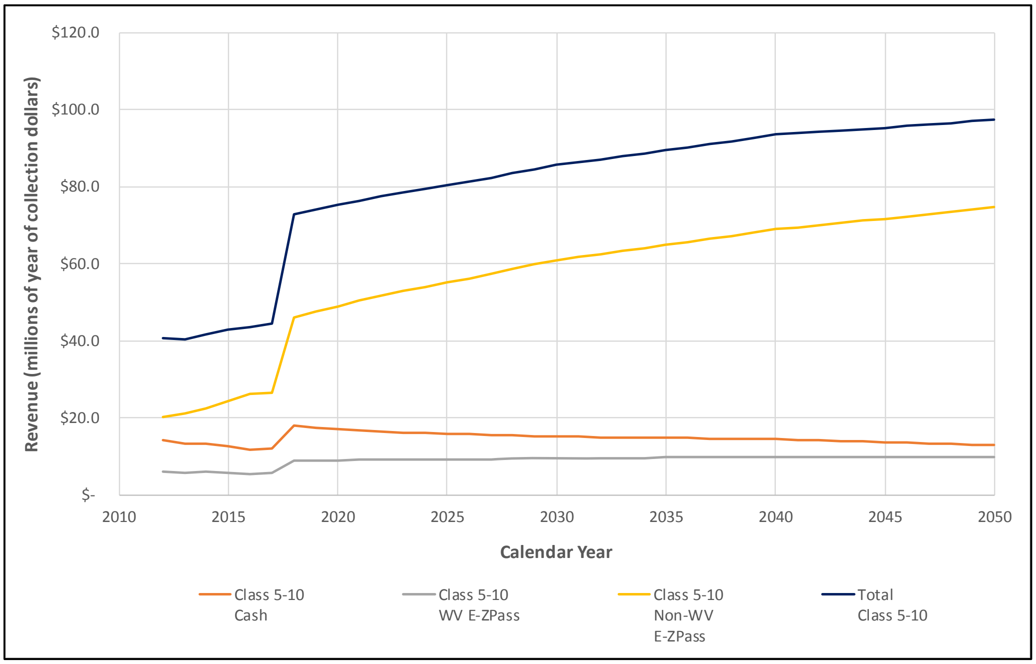
The results for Classes 5-10 are shown in **Figures 5-16** and **5-17**. The trends are similar in that the large toll increase in 2018 causes a significant drop in transactions which eventually recovers and grows above the levels prior to the toll rate increase. Annual revenue has an initial step up followed by slow but continuous growth over time. It is interesting to note that both cash transactions and revenue slowly decrease over time, due to the forecasted shift away from cash towards electronic toll collection, especially to Non-WV E-ZPass.

Figure 5-16 Classes 5-10 Transactions Examples 1 and 2



Source: CDM Smith Analysis

Figure 5-17 Classes 5-10 Revenue Examples 1 and 2



Source: CDM Smith Analysis

5.5 T&R Forecasts for Examples 1 and 2

Combining the results from Class 1 and Classes 2-10 models, results for Examples 1 and 2 were compiled to understand overall implications of the toll policies.

As noted above, several policy variables remain unchanged across the examples. The one-time issuance cost to enter the revised flat fee program (cost to issue the WV E-ZPass transponder) was set to $13 and the amount collected was assumed to exactly offset the issuance costs and is not included in the revenue. Only one vehicle can be registered with each E-ZPass account in the revised flat fee program for all alternatives. The flat fee program was assumed to start on January 1, 2018 for Examples 1 and 2.

The policy variables that differ across alternatives is the flat fee program annual amount:

Example 1 assumes an $8 Class 1 revised flat fee program.

Example 2 assumes a $25 Class 1 revised flat fee program.

The toll rates for Class 1 customers not choosing the flat fee program and all other customers would double starting on January 1, 2018. **Tables 5-1** and **5-2** provide the results of the two examples.

Existing conditions indicated about 76% of all transactions are Class 1 vehicles. Classes 2-4 vehicles make up about 2%, and Classes 5-10 the remaining 22%. Under Example 1, Class 1 transactions increase to about 78% of all transactions, and Classes 5-10 drop back to about 20% of all transactions. Existing revenue is about 49% from Class 1 transactions, 2% from Classes 2-4 transactions, and 49% from Classes 5-10 transactions.

Table 5-1 Example 1 ($8 flat fee program, 100% toll increase) Results

Calendar Year	Toll Transactions (millions)					Revenue (millions year of collection dollars)				
	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Trans w/flat fee	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Revenue w/flat fee
2012 (1)	3.16	22.86	0.78	7.40	**34.20**	$ 1.18	$ 39.02	$ 1.83	$ 40.67	**$ 82.70**
2013 (1)	3.30	22.63	0.79	7.40	**34.12**	$ 1.17	$ 38.79	$ 1.83	$ 40.41	**$ 82.20**
2014 (1)	3.23	22.99	0.80	7.64	**34.66**	$ 1.06	$ 39.51	$ 1.87	$ 41.79	**$ 84.23**
2015 (1)	3.13	24.11	0.87	7.84	**35.95**	$ 1.23	$ 41.53	$ 2.03	$ 42.81	**$ 87.60**
2016 (1)	3.09	24.50	0.92	7.98	**36.49**	$ 1.15	$ 42.24	$ 2.14	$ 43.46	**$ 88.99**
2017 (2)	3.31	24.55	0.93	8.11	**36.90**	$ 1.13	$ 42.37	$ 2.18	$ 44.33	**$ 90.01**
2018 (3)	16.04	10.64	0.76	6.64	**34.08**	$ 7.11	$ 33.73	$ 3.56	$ 72.91	**$ 117.31**
2019	16.17	10.75	0.77	6.75	**34.44**	$ 7.10	$ 34.14	$ 3.60	$ 74.06	**$ 118.90**
2020	16.31	10.87	0.78	6.86	**34.82**	$ 7.09	$ 34.52	$ 3.63	$ 75.18	**$ 120.42**
2021	16.45	10.97	0.78	6.97	**35.17**	$ 7.09	$ 34.90	$ 3.67	$ 76.30	**$ 121.96**
2022	16.59	11.09	0.79	7.08	**35.55**	$ 7.09	$ 35.28	$ 3.71	$ 77.42	**$ 123.50**
2023	16.74	11.17	0.80	7.16	**35.87**	$ 7.10	$ 35.57	$ 3.75	$ 78.36	**$ 124.78**
2024	16.88	11.25	0.81	7.26	**36.20**	$ 7.11	$ 35.87	$ 3.80	$ 79.31	**$ 126.09**
2025	17.02	11.34	0.82	7.35	**36.53**	$ 7.12	$ 36.18	$ 3.85	$ 80.30	**$ 127.45**
2026	17.17	11.43	0.83	7.45	**36.88**	$ 7.13	$ 36.50	$ 3.90	$ 81.30	**$ 128.83**
2027	17.31	11.53	0.84	7.54	**37.22**	$ 7.14	$ 36.84	$ 3.95	$ 82.34	**$ 130.27**
2028	17.46	11.63	0.85	7.64	**37.58**	$ 7.15	$ 37.19	$ 4.00	$ 83.39	**$ 131.73**
2029	17.61	11.74	0.87	7.75	**37.97**	$ 7.16	$ 37.56	$ 4.05	$ 84.48	**$ 133.25**
2030	17.76	11.85	0.88	7.85	**38.34**	$ 7.17	$ 37.95	$ 4.10	$ 85.59	**$ 134.81**
2031	17.90	11.92	0.88	7.92	**38.62**	$ 7.19	$ 38.21	$ 4.13	$ 86.33	**$ 135.86**
2032	18.04	12.00	0.89	7.99	**38.92**	$ 7.21	$ 38.48	$ 4.17	$ 87.08	**$ 136.94**
2033	18.18	12.07	0.90	8.06	**39.21**	$ 7.23	$ 38.76	$ 4.20	$ 87.84	**$ 138.03**
2034	18.32	12.15	0.90	8.13	**39.50**	$ 7.26	$ 39.04	$ 4.23	$ 88.62	**$ 139.15**
2035	18.47	12.23	0.91	8.21	**39.82**	$ 7.28	$ 39.32	$ 4.26	$ 89.40	**$ 140.26**
2036	18.61	12.31	0.92	8.28	**40.12**	$ 7.30	$ 39.61	$ 4.30	$ 90.19	**$ 141.40**
2037	18.75	12.39	0.92	8.35	**40.41**	$ 7.33	$ 39.91	$ 4.33	$ 90.99	**$ 142.56**
2038	18.90	12.48	0.93	8.43	**40.74**	$ 7.35	$ 40.21	$ 4.37	$ 91.80	**$ 143.73**
2039	19.05	12.56	0.94	8.50	**41.05**	$ 7.37	$ 40.52	$ 4.40	$ 92.63	**$ 144.92**
2040	19.20	12.65	0.95	8.58	**41.38**	$ 7.39	$ 40.83	$ 4.43	$ 93.46	**$ 146.11**
2041	19.33	12.69	0.95	8.62	**41.59**	$ 7.39	$ 41.00	$ 4.46	$ 93.82	**$ 146.67**
2042	19.47	12.73	0.96	8.65	**41.81**	$ 7.39	$ 41.18	$ 4.49	$ 94.19	**$ 147.25**
2043	19.61	12.77	0.96	8.68	**42.02**	$ 7.38	$ 41.37	$ 4.52	$ 94.56	**$ 147.83**
2044	19.75	12.81	0.97	8.72	**42.25**	$ 7.38	$ 41.56	$ 4.55	$ 94.94	**$ 148.43**
2045	19.89	12.85	0.97	8.76	**42.47**	$ 7.38	$ 41.76	$ 4.57	$ 95.33	**$ 149.04**
2046	20.03	12.90	0.98	8.79	**42.70**	$ 7.37	$ 41.96	$ 4.60	$ 95.72	**$ 149.65**
2047	20.18	12.95	0.99	8.83	**42.95**	$ 7.37	$ 42.17	$ 4.63	$ 96.12	**$ 150.29**
2048	20.32	13.00	0.99	8.87	**43.18**	$ 7.36	$ 42.39	$ 4.66	$ 96.53	**$ 150.94**
2049	20.47	13.05	1.00	8.91	**43.43**	$ 7.36	$ 42.61	$ 4.69	$ 96.94	**$ 151.60**
2050	20.61	13.10	1.00	8.95	**43.66**	$ 7.36	$ 42.84	$ 4.72	$ 97.36	**$ 152.28**

(1) 2012-2016: Actual values
(2) 2017: Estimated values subject to change
(3) 2019: Toll rates double, flat fee is $8 per year starting 1/1/18
Source: CDM Smith Analysis

Table 5-2 Example 2 ($25 flat fee program, 100% toll increase) Results

Calendar Year	Toll Transactions (millions)					Revenue (millions year of collection dollars)				
	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Trans w/flat fee	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Revenue w/flat fee
2012 (1)	3.16	22.86	0.78	7.40	**34.20**	$ 1.18	$ 39.02	$ 1.83	$ 40.67	**$ 82.70**
2013 (1)	3.30	22.63	0.79	7.40	**34.12**	$ 1.17	$ 38.79	$ 1.83	$ 40.41	**$ 82.20**
2014 (1)	3.23	22.99	0.80	7.64	**34.66**	$ 1.06	$ 39.51	$ 1.87	$ 41.79	**$ 84.23**
2015 (1)	3.13	24.11	0.87	7.84	**35.95**	$ 1.23	$ 41.53	$ 2.03	$ 42.81	**$ 87.60**
2016 (1)	3.09	24.50	0.92	7.98	**36.49**	$ 1.15	$ 42.24	$ 2.14	$ 43.46	**$ 88.99**
2017 (2)	3.31	24.55	0.93	8.11	**36.90**	$ 1.13	$ 42.37	$ 2.18	$ 44.33	**$ 90.01**
2018 (3)	12.35	12.55	0.76	6.64	**32.30**	$ 14.22	$ 40.02	$ 3.56	$ 72.91	**$ 130.71**
2019	12.46	12.68	0.77	6.75	**32.66**	$ 14.21	$ 40.45	$ 3.60	$ 74.06	**$ 132.32**
2020	12.58	12.80	0.78	6.86	**33.02**	$ 14.20	$ 40.87	$ 3.63	$ 75.18	**$ 133.88**
2021	12.70	12.91	0.78	6.97	**33.36**	$ 14.20	$ 41.28	$ 3.67	$ 76.30	**$ 135.45**
2022	12.82	13.04	0.79	7.08	**33.73**	$ 14.21	$ 41.69	$ 3.71	$ 77.42	**$ 137.03**
2023	12.94	13.13	0.80	7.16	**34.03**	$ 14.23	$ 42.01	$ 3.75	$ 78.36	**$ 138.35**
2024	13.05	13.23	0.81	7.26	**34.35**	$ 14.26	$ 42.34	$ 3.80	$ 79.31	**$ 139.71**
2025	13.17	13.33	0.82	7.35	**34.67**	$ 14.28	$ 42.68	$ 3.85	$ 80.30	**$ 141.11**
2026	13.30	13.44	0.83	7.45	**35.02**	$ 14.31	$ 43.04	$ 3.90	$ 81.30	**$ 142.55**
2027	13.42	13.54	0.84	7.54	**35.34**	$ 14.33	$ 43.41	$ 3.95	$ 82.34	**$ 144.03**
2028	13.54	13.66	0.85	7.64	**35.69**	$ 14.36	$ 43.80	$ 4.00	$ 83.39	**$ 145.55**
2029	13.67	13.78	0.87	7.75	**36.07**	$ 14.38	$ 44.21	$ 4.05	$ 84.48	**$ 147.12**
2030	13.79	13.90	0.88	7.85	**36.42**	$ 14.41	$ 44.64	$ 4.10	$ 85.59	**$ 148.74**
2031	13.91	13.99	0.88	7.92	**36.70**	$ 14.46	$ 44.94	$ 4.13	$ 86.33	**$ 149.86**
2032	14.02	14.07	0.89	7.99	**36.97**	$ 14.51	$ 45.25	$ 4.17	$ 87.08	**$ 151.01**
2033	14.14	14.16	0.90	8.06	**37.26**	$ 14.56	$ 45.56	$ 4.20	$ 87.84	**$ 152.16**
2034	14.25	14.25	0.90	8.13	**37.53**	$ 14.61	$ 45.87	$ 4.23	$ 88.62	**$ 153.33**
2035	14.37	14.34	0.91	8.21	**37.83**	$ 14.66	$ 46.20	$ 4.26	$ 89.40	**$ 154.52**
2036	14.49	14.44	0.92	8.28	**38.13**	$ 14.71	$ 46.53	$ 4.30	$ 90.19	**$ 155.73**
2037	14.61	14.53	0.92	8.35	**38.41**	$ 14.76	$ 46.86	$ 4.33	$ 90.99	**$ 156.94**
2038	14.73	14.63	0.93	8.43	**38.72**	$ 14.81	$ 47.20	$ 4.37	$ 91.80	**$ 158.18**
2039	14.85	14.72	0.94	8.50	**39.01**	$ 14.86	$ 47.55	$ 4.40	$ 92.63	**$ 159.44**
2040	14.97	14.82	0.95	8.58	**39.32**	$ 14.92	$ 47.90	$ 4.43	$ 93.46	**$ 160.71**
2041	15.09	14.87	0.95	8.62	**39.53**	$ 14.92	$ 48.09	$ 4.46	$ 93.82	**$ 161.29**
2042	15.21	14.92	0.96	8.65	**39.74**	$ 14.92	$ 48.29	$ 4.49	$ 94.19	**$ 161.89**
2043	15.33	14.97	0.96	8.68	**39.94**	$ 14.92	$ 48.50	$ 4.52	$ 94.56	**$ 162.50**
2044	15.45	15.02	0.97	8.72	**40.16**	$ 14.92	$ 48.71	$ 4.55	$ 94.94	**$ 163.12**
2045	15.58	15.07	0.97	8.76	**40.38**	$ 14.92	$ 48.93	$ 4.57	$ 95.33	**$ 163.75**
2046	15.70	15.12	0.98	8.79	**40.59**	$ 14.92	$ 49.16	$ 4.60	$ 95.72	**$ 164.40**
2047	15.82	15.18	0.99	8.83	**40.82**	$ 14.93	$ 49.39	$ 4.63	$ 96.12	**$ 165.07**
2048	15.95	15.24	0.99	8.87	**41.05**	$ 14.93	$ 49.63	$ 4.66	$ 96.53	**$ 165.75**
2049	16.07	15.30	1.00	8.91	**41.28**	$ 14.93	$ 49.88	$ 4.69	$ 96.94	**$ 166.44**
2050	16.20	15.36	1.00	8.95	**41.51**	$ 14.93	$ 50.13	$ 4.72	$ 97.36	**$ 167.14**

(1) 2012-2016: Actual values
(2) 2017: Estimated values subject to change
(3) 2019: Toll rates double, flat fee is $25 per year starting 1/1/18
Source: CDM Smith Analysis

Under Example 1, Class 1 revenue share (including the flat fee) slips to about 35%, Classes 2-4 share increases to 3%, and Classes 5-10 revenue share increases to 62%. Consequently, any losses in Class 1 revenue due to the revised flat fee program are more than made up for by the revenue increases in the other class, particularly Classes 5-10.

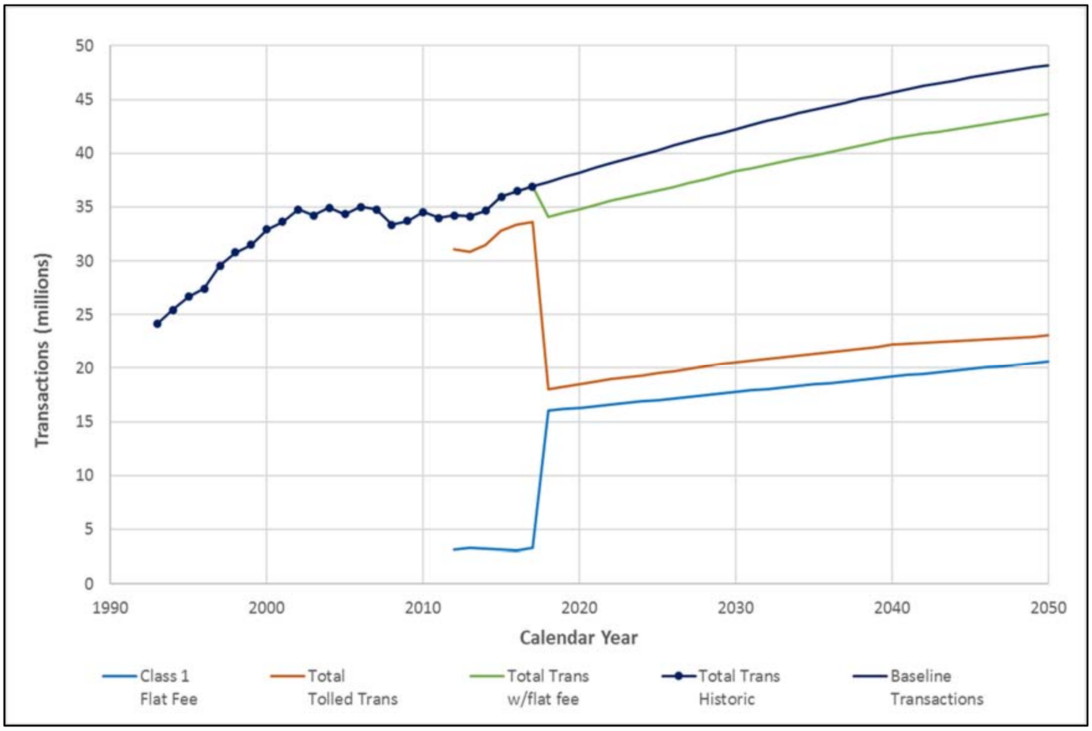
Transactions share results are similar for Example 2. However, Class 1 revenue share drops from about 48% to 41%, Classes 2-4 is similar at 3%, and Classes 5-10 revenue share rises only to about 56%.

Figures 5-18 and **5-19** illustrate Example 1 results and **Figures 5-20 and 5-21** illustrate Example 2 results.

In Example 1, the combination of introducing the revised flat fee program and doubling tolls results in a large increase in flat fee transactions over the current flat fee program (Personal Discount Plan 1) transactions, increasing from just over three million transactions annually to over 16 million in 2018 and growing to 21 million by 2050. Tolled transactions decrease from about 34 million to about 18 million in 2018 and increase slowly to about 23 million by 2050. Total transactions drop from about 37 million to 34 million in 2018 and then grow to 44 million by 2050. Consequently, while the revised flat fee program results in a larger number of transactions, the doubling of toll rates causes a reduction in transactions compared to the baseline forecast. For revenue, flat fee revenue increases from about $1.2 million today to about $7M in 2018 and stays relatively flat over time. Tolled revenue increases from about $89 million today to $110 million in 2018 with the toll increase and grows to about $144 million by 2050. Total revenue grows from about $90 million today to $117 million in 2018 to $152 million by 2050, well above the baseline forecast.

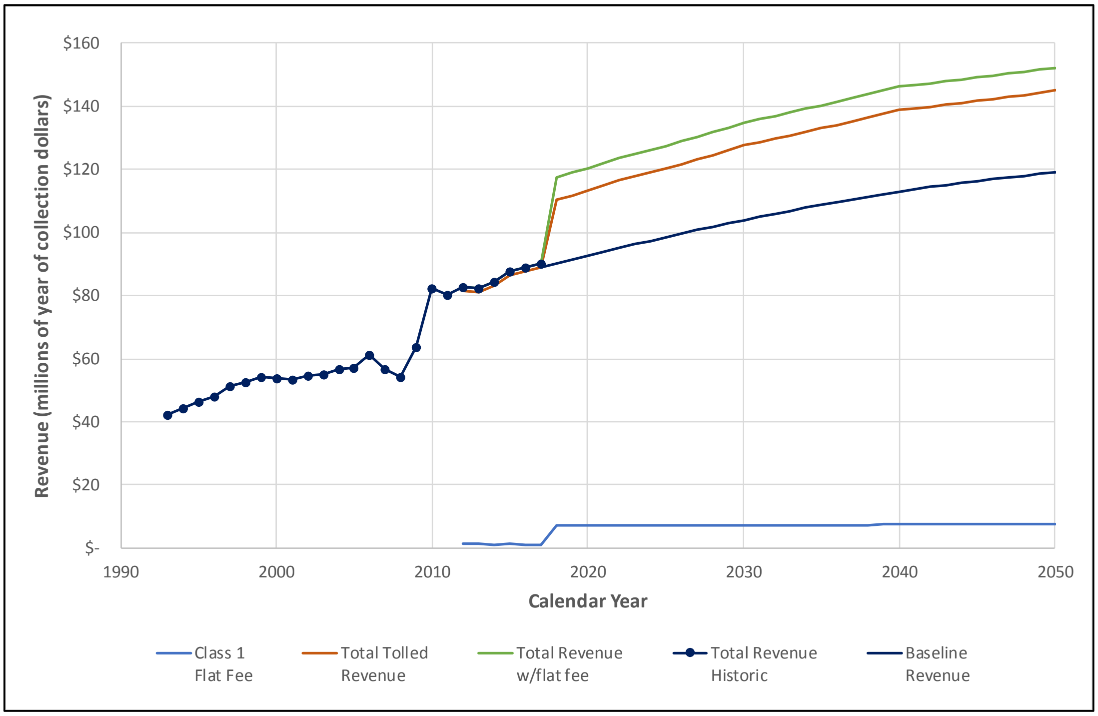
In Example 2, the increase in flat fee transactions is not as dramatic, only increasing to 13 million in 2018 and growing to about 17 million by 2050. Fewer people enter the flat fee program due to its higher cost. Tolled transactions decrease from about 34 million to about 20 million in 2018 and increase slowly to about 25 million by 2050. Overall, Example 2 has about 2 million less transactions than Example 1. In terms of revenue, flat fee revenue is more for Example 2 at about $15M annually over the forecast horizon. Tolled revenue increases from about $89 million in 2018 to about $116M in 2018 and increasing to $152M by 2050. The total annual revenues for Example 2 are approximately $15 million more than Example 1 and approximately $45 million more than the Baseline.

Figure 5-18 Example 1 Transactions



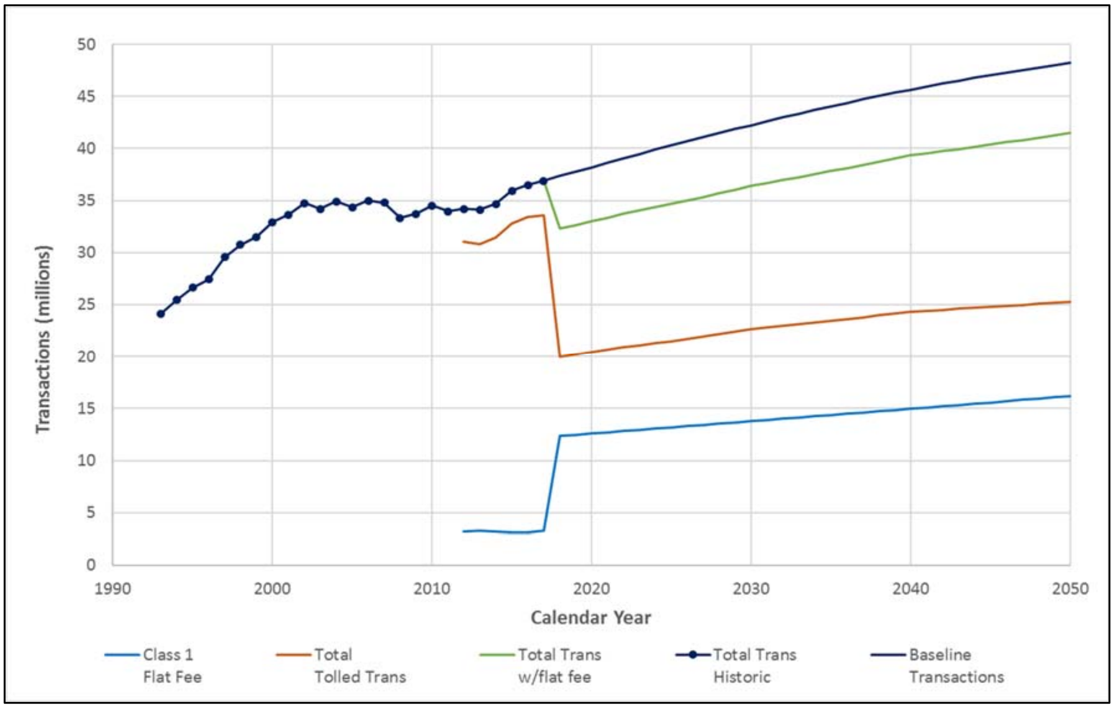
Source: CDM Smith Analysis

Figure 5-19 Example 1 Revenue



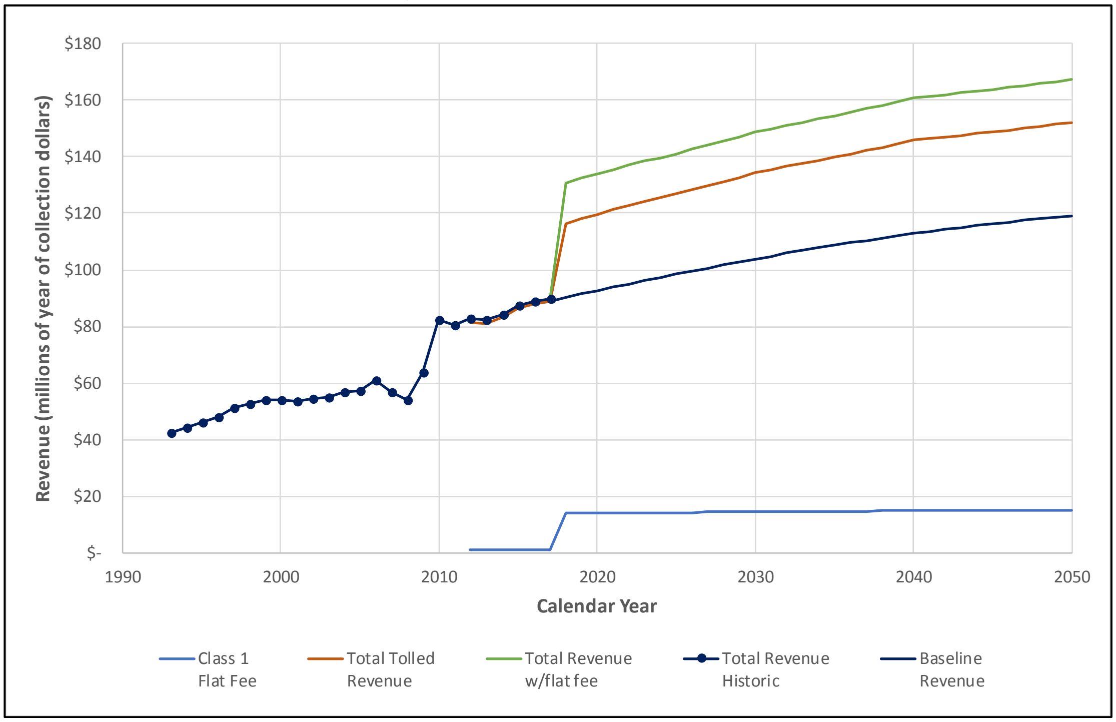
Source: CDM Smith Analysis

Figure 5-20 Example 2 Transactions



Source: CDM Smith Analysis

Figure 5-21 Example 2 Revenue



Source: CDM Smith Analysis

Chapter 6

Transactions and Revenue Forecast

This chapter contains the T&R forecasts for the final approved scenario. WVPA's goal was to support the improvements to the Turnpike and to access roads connecting to the Turnpike, as identified in Governor Justice's ***Roads to Prosperity*** program. The intent of WVPA staff has been to maximize the amount of toll revenue bonds that can be sold, while maintaining the benefits of the flat fee program and retaining reasonable toll rates, as well as providing funds to keep the Turnpike in a good state of repair and operating efficiently. After reviewing a number of potential toll scenarios and taking into account desired toll policy and outcomes, WVPA staff and advisors selected a toll scenario that is a hybrid between Examples 1 and 2 with an indexing of toll rates and fees to achieve desired revenue levels. This scenario was later approved by the WVPA Board with some modifications.

At the introduction of this scenario, assumed to occur on September 1, 2018, Class 1 passenger car customers will have the opportunity to choose an early enrollment option which covers tolls for a three-year period at a discounted cost of $24 (plus a $13 issuance fee if not already part of the WV E-ZPass program). To participate in this early enrollment option, customers will need to enroll in the flat fee program and pay the flat fee between September 1, 2018 and December 31, 2018. Customers in this program will enjoy unlimited, toll-free use of the Turnpike from time of joining through December 31, 2021. For all other customers:

- The CY 2018 toll rates will remain the same as CY 2017
- In CY 2019, the annual cost of the Class 1 flat fee program will be $25 and cover CY 2019 only; and toll rates for all other customers paying tolls (Classes 1-10) will double
- The toll policies in CY 2020 and 2021 are the same as CY 2019
- Starting in CY 2022 and beyond, all toll rates will increase nominally at 1.6% annually subject to rounding and the $25 annual flat fee will increase by 5% every third year (including CY 2022).

6.1 Tolling Policy and Toll Rate Schedule

At its meeting duly held on June 7, 2018, the Authority adopted a resolution to approve the schedule of toll rates for passage along the Turnpike reflected on **Table 6-1**. This new toll rate schedule represents a 100% increase in toll rates for all classes of vehicles. Class 1 passenger motor vehicles are eligible to enroll in an annual flat fee program providing them with unlimited travel along the Turnpike for a year.

Table 6-1 West Virginia Parkways Toll Rate Schedule - Effective January 1, 2019

Toll Class	Vehicle Type	Number of axles	Barriers A, B & C Cash	Barriers A, B & C WV E-ZPass	Barriers A, B & C Non-WV E-ZPass	North Beckley Cash	North Beckley WV E-ZPass	North Beckley Non-WV E-ZPass
1	Single Fee Discount Program including Limited (One-Time) Early Enrollment Option	2	$ 0.00 with valid Single Fee Discount Plan or Early Enrollment Option			$ 0.00 with valid Single Fee Discount Plan or Early Enrollment Option		
1	Passenger cars/pickup trucks (under 7' 6")	2	$4.00	$2.60	$4.00	$0.75	$0.52	$0.80
2	All Class 1 vehicles with a trailer (under 7' 6")	3+	$5.00	$3.25	$5.00	$1.50	$1.04	$1.60
3	Motorhomes only (over 7' 6")	2-3	$5.00	$3.25	$5.00	$1.50	$1.04	$1.60
4	Class 3 vehicles with a trailer (over 7' 6")	3+	$6.50	$4.22	$6.50	$2.50	$1.56	$2.40
5	2-axle trucks	2	$6.50	$5.20	$5.66	$1.50	$1.28	$1.40
6	3-axle trucks	3	$9.00	$7.20	$7.84	$2.50	$1.92	$2.08
7	4-axle trucks	4	$13.00	$10.40	$11.32	$3.25	$2.56	$2.78
8	5-axle trucks	5	$13.50	$10.80	$11.74	$3.25	$2.56	$2.78
9	6 or more-axle trucks	6+	$19.00	$15.20	$16.54	$4.75	$3.84	$4.18
10	Oversize trucks		$24.00	$19.20	$20.88	$14.50	$11.52	$12.52

Automatic Adjustment: (i) Beginning in 2022, the toll rate schedule set forth above shall be subject to an automatic increase of 1.60% per year; provided, that the amount of any resulting increased rate shall be rounded to the nearest $0.25 for the Cash Rate at each Mainline Toll Plaza and the North Beckley Plaza, (ii) the corresponding WV E-ZPass Rates and Non-WV E-ZPass Rates thus shall also be subject to the automatic increase of 1.60% per year, (iii) the annual automatic increases described in this paragraph shall be calculated from the pre-rounded Cash Rates, not the rounded Cash Rates, and (iv) beginning on January 1, 2022, in accordance with the Act, the $25 fee charged for the Single Fee Discount Program shall be automatically increased by 5.00% and then shall be automatically increased by 5.00% every three years thereafter (that is, on the January 1st that is the third anniversary of the previous automatic 5.00% increase) without further action of the Authority. Single Fee Discount Program: Beginning on January 1, 2019, a customer driving a Toll Class 1 passenger motor vehicle (i.e., two axle passenger vehicles weighing less than 8,000 pounds and under 7’6" for personal - non-commercial use) may obtain (upon submission of a complete application, payment of applicable fees and receipt of a special transponder from the West Virginia Parkways Authority) unlimited travel on the West Virginia Turnpike for one year (from the month of purchase) for that vehicle for an annual fee of $25 per year per vehicle (subject to the subsequent 5.00% increases as provided above), plus applicable costs of issuing a special transponder for that vehicle. Non-Commercial Vehicles in Toll Class II, III and IV – Discount Plan for West Virginia E-ZPass Customers: Customers with vehicles in Class 2-4 (i.e. Vehicles greater than 7’6” in height or Class 1 vehicles towing trailers) having a WV E-ZPass will continue to receive a 35% discount off of the pre-rounded Cash Rates at each toll plaza on the West Virginia Turnpike; provided, however, that the applicable Cash Rate at each Mainline Toll Plaza and the North Beckley Toll Plaza shall be rounded to the nearest $0.25. Commercial Discount Plan #A: There is a $25.00 charge for the purchase of each E-ZPass transponder (non-refundable). Rates are based on the West Virginia Toll Rates table above under the column “WV E-ZPass”. Commercial Discount Plan #B: Accounts are opened and managed by other E-ZPass agencies, so there is no paperwork, account maintenance, or charge for transponders. Rates are based on the West Virginia Toll Rates table above under the column “Non-WV E-ZPass”. *Effective Date: This Tolling Policy and Toll Rate Schedule shall become effective as of January 1, 2019; provided, that the Limited (One Time) Early Enrollment Option shall become available and effective as of September 1, 2018.

6.2 T&R Forecasts

The T&R forecast for the final approved scenario is presented in **Table 6-2**, **Figure 6-1,** and **Figure 6-2**.

In order to account for the early enrollment option, it was assumed Class 1 customers would view it similar to the Example 1 results provided in Chapter 5 based on spreading the $24 over three years, or $8 per year. It was assumed 90% of the Class 1 customers taking advantage of the Example 1 $8 flat fee program would decide to join the early enrollment option in 2018. Additional customers are assumed to join later for $25 per year: the percentage of flat fee customers joining is 10% in 2019, 15% in 2020, and 20% in 2021 of the Example 2 results provided in Chapter 5.

CY 2018 was adjusted for a September 1 start date for the three year buy-in. Regular tolls are assumed to be collected through the end of August 2018. Once the new flat fee program with early buy-in option is available, it is assumed that all those who would enter the program in 2018 would do so on September 1, 2018 and have free tolls for the remaining four months of the year.

Annual transactions increase from about 37 million in 2017 to about 38 million in 2018 due to the unlimited transactions allowed under the flat fee program and the early enrollment option which draws more customers. However, the increase is transactions is modest as the new program is available only starting September 1, 2018. Transactions drop to about 34 million in 2019 due to the toll rate increase. There is a noticeable decrease in transactions in 2022 due to the ending of the early enrollment option coverage. Transactions increase slowly to about 35 million by 2030, but then begin to decrease as toll rates escalate and overall growth tapers off, shrinking to about 32 million by 2050.

Early on, approximately 47% of the transactions are from customers that opt for the flat fee program early enrollment prior to December 31, 2018 and others who join the annual flat fee program later through 2021. In 2022, annual flat fee transactions decrease to approximately 37% of all transactions since the early enrollment option coverage ends and fewer customers choose the $26.25 ($25.00 plus 5% escalation) flat fee program. The flat fee share of transactions increases to 51% by 2050 reflecting the relative attraction of the revised flat fee program despite both escalation in the flat fee amount and regular toll rates.

Among tolled transactions, approximately 63% are PC transactions and 37% are CV transactions during the early enrollment option coverage. The share of PC toll transactions increases to 67% in 2022 when the early enrollment option coverage ends and slowly decreases to approximately 59% by 2050 as more passenger car customers select the flat fee program.

Annual revenue increases from about $90 million in 2017 to $105 million in 2018 with a large increase in the Class 1 Flat Fee revenue from the early enrollment option and a large decrease in Class 1 tolled revenue. During the period 2019-2021, total revenue increases due to the initial toll rate increase, but is moderated by the early enrollment option. In 2022, a noticeable jump up in revenue accompanies the end of the early enrollment coverage and revenue increases over time due to escalating toll rates. The revenue generated by the flat fee program represents about 19% of all revenue in 2018, about 1% to 2% in the years 2019-2021 (those who missed the early enrollment period but choose the flat fee program just for each year), and about 10% starting in 2022 growing to 16% by 2050. Among total tolled revenue, about one-third comes from passenger cars while two-thirds comes from commercial vehicles. From 2023 to 2030, total revenue is expected to grow about 1.7% annually, slowing to about 1.1% growth annually through 2040, and slowing further to about 0.3% growth through 2050. Every third year, the 5% increase in the annual flat fee generates a slightly higher annual growth in revenue.

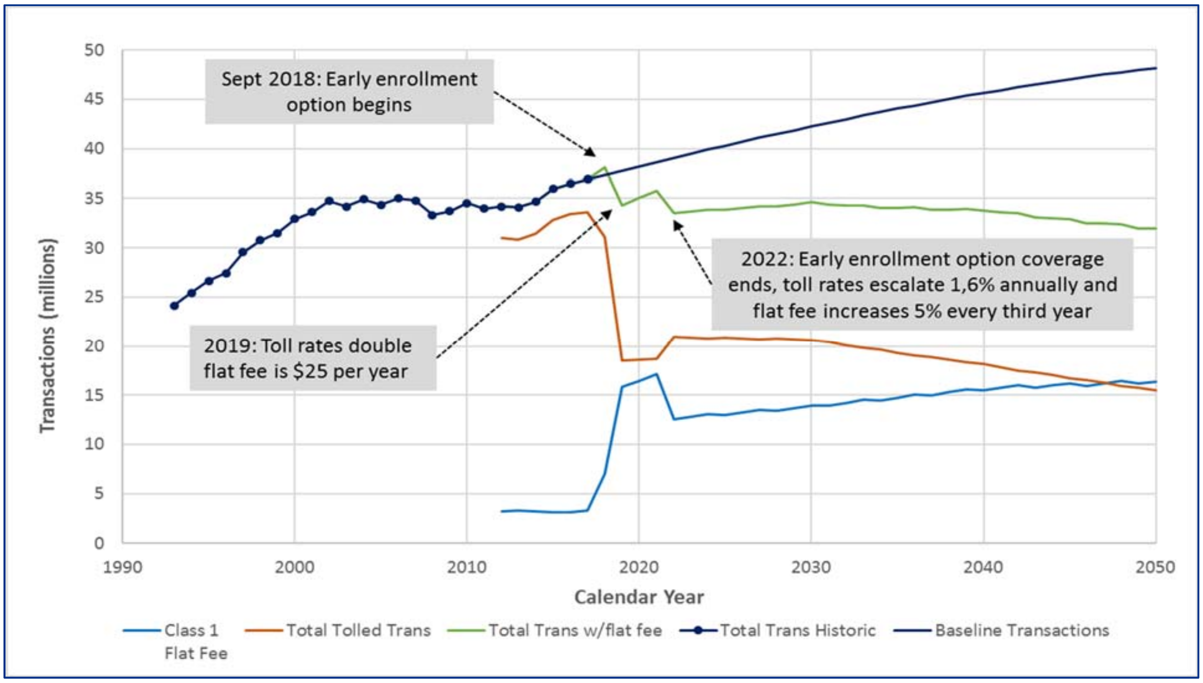
Note that the flat fee program was assumed to start on September 1, 2018 in the forecast.

Table 6-2 Toll Transactions and Revenue Forecast

Calendar Year	Toll Transactions (millions)					Revenue (millions year of collection dollars)				
	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Trans w/flat fee	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Revenue w/flat fee
2012 (1)	3.16	22.86	0.78	7.40	**34.20**	$ 1.18	$ 39.02	$ 1.83	$ 40.67	**$ 82.70**
2013 (1)	3.30	22.63	0.79	7.40	**34.12**	$ 1.17	$ 38.79	$ 1.83	$ 40.41	**$ 82.20**
2014 (1)	3.23	22.99	0.80	7.64	**34.66**	$ 1.06	$ 39.51	$ 1.87	$ 41.79	**$ 84.23**
2015 (1)	3.13	24.11	0.87	7.84	**35.95**	$ 1.23	$ 41.53	$ 2.03	$ 42.81	**$ 87.60**
2016 (1)	3.09	24.50	0.92	7.98	**36.49**	$ 1.15	$ 42.24	$ 2.14	$ 43.46	**$ 88.99**
2017 (2)	3.31	24.55	0.93	8.11	**36.90**	$ 1.13	$ 42.37	$ 2.18	$ 44.33	**$ 90.01**
2018 (3)	7.01	21.89	0.95	8.26	**38.11**	$ 19.90	$ 37.27	$ 2.21	$ 45.33	**$ 104.71**
2019 (4)	15.82	10.99	0.77	6.75	**34.33**	$ 1.42	$ 34.75	$ 3.60	$ 74.06	**$ 113.83**
2020	16.46	10.95	0.78	6.86	**35.05**	$ 2.13	$ 34.62	$ 3.63	$ 75.18	**$ 115.56**
2021	17.11	10.92	0.78	6.97	**35.78**	$ 2.84	$ 34.51	$ 3.67	$ 76.30	**$ 117.32**
2022 (5)	12.55	13.18	0.79	7.02	**33.54**	$ 14.42	$ 42.33	$ 3.71	$ 78.04	**$ 138.50**
2023	12.79	13.04	0.79	7.05	**33.67**	$ 14.73	$ 42.45	$ 3.79	$ 79.54	**$ 140.51**
2024	13.03	12.92	0.80	7.08	**33.83**	$ 15.05	$ 42.61	$ 3.86	$ 81.09	**$ 142.61**
2025	12.99	12.94	0.80	7.11	**33.84**	$ 15.57	$ 43.24	$ 3.94	$ 82.67	**$ 145.42**
2026	13.24	12.82	0.80	7.14	**34.00**	$ 15.91	$ 43.42	$ 4.03	$ 84.31	**$ 147.67**
2027	13.49	12.71	0.80	7.17	**34.17**	$ 16.25	$ 43.63	$ 4.11	$ 85.98	**$ 149.97**
2028	13.44	12.75	0.81	7.20	**34.20**	$ 16.80	$ 44.37	$ 4.20	$ 87.71	**$ 153.08**
2029	13.70	12.65	0.81	7.23	**34.39**	$ 17.16	$ 44.61	$ 4.28	$ 89.48	**$ 155.53**
2030	13.96	12.56	0.81	7.27	**34.60**	$ 17.53	$ 44.89	$ 4.37	$ 91.30	**$ 158.09**
2031	13.92	12.38	0.81	7.25	**34.36**	$ 18.24	$ 44.86	$ 4.43	$ 92.54	**$ 160.07**
2032	14.21	12.07	0.81	7.24	**34.33**	$ 18.79	$ 44.31	$ 4.49	$ 93.80	**$ 161.39**
2033	14.51	11.77	0.80	7.22	**34.30**	$ 19.36	$ 43.78	$ 4.54	$ 95.08	**$ 162.76**
2034	14.44	11.62	0.80	7.20	**34.06**	$ 20.11	$ 43.81	$ 4.60	$ 96.39	**$ 164.91**
2035	14.75	11.34	0.80	7.19	**34.08**	$ 20.72	$ 43.30	$ 4.66	$ 97.71	**$ 166.39**
2036	15.06	11.06	0.80	7.17	**34.09**	$ 21.35	$ 42.81	$ 4.72	$ 99.05	**$ 167.93**
2037	14.98	10.94	0.79	7.16	**33.87**	$ 22.14	$ 42.90	$ 4.78	$ 100.42	**$ 170.24**
2038	15.30	10.68	0.79	7.14	**33.91**	$ 22.81	$ 42.43	$ 4.84	$ 101.81	**$ 171.89**
2039	15.63	10.42	0.79	7.12	**33.96**	$ 23.51	$ 41.97	$ 4.90	$ 103.22	**$ 173.60**
2040	15.52	10.32	0.78	7.11	**33.73**	$ 24.33	$ 42.12	$ 4.96	$ 104.66	**$ 176.07**
2041	15.75	10.06	0.78	7.03	**33.62**	$ 24.70	$ 41.43	$ 5.00	$ 105.18	**$ 176.31**
2042	15.98	9.80	0.77	6.96	**33.51**	$ 25.07	$ 40.76	$ 5.04	$ 105.71	**$ 176.58**
2043	15.75	9.69	0.76	6.88	**33.08**	$ 25.50	$ 40.71	$ 5.07	$ 106.25	**$ 177.53**
2044	15.99	9.45	0.75	6.81	**33.00**	$ 25.89	$ 40.08	$ 5.11	$ 106.80	**$ 177.88**
2045	16.23	9.22	0.75	6.74	**32.94**	$ 26.28	$ 39.47	$ 5.15	$ 107.36	**$ 178.26**
2046	15.97	9.13	0.74	6.67	**32.51**	$ 26.67	$ 39.48	$ 5.19	$ 107.93	**$ 179.27**
2047	16.21	8.91	0.73	6.60	**32.45**	$ 27.09	$ 38.90	$ 5.23	$ 108.50	**$ 179.72**
2048	16.45	8.69	0.73	6.53	**32.40**	$ 27.50	$ 38.34	$ 5.27	$ 109.09	**$ 180.20**
2049	16.16	8.62	0.72	6.46	**31.96**	$ 27.85	$ 38.40	$ 5.31	$ 109.68	**$ 181.24**
2050	16.41	8.42	0.71	6.40	**31.94**	$ 28.28	$ 37.87	$ 5.35	$ 110.28	**$ 181.78**

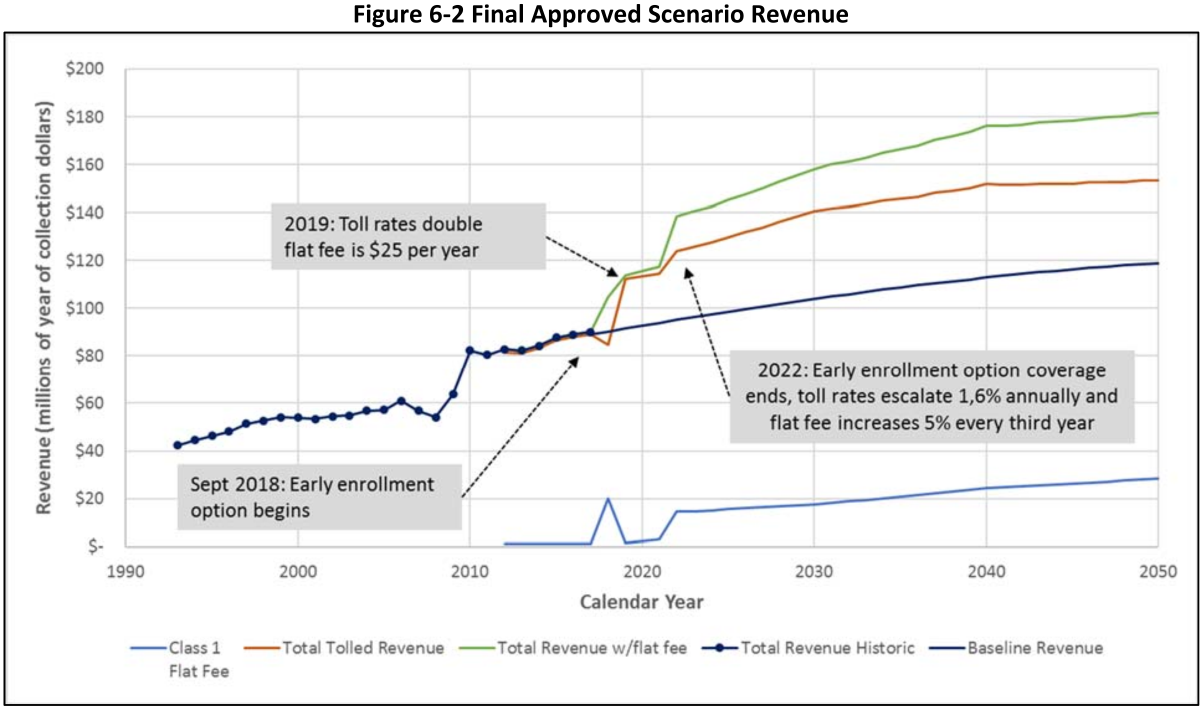
(1) 2012-2016: Actual values
(2) 2017: Estimated values subject to change
(3) 2018: Early enrollment option assumed to begin September 1, 2018
(4) 2019: Toll rates double, flat fee is $25 per year
(5) 2022: Early enrollment option coverage ends December 31, 2021, toll rates escalate 1.6% annually and flat fee increases 5% every third year
Source: CDM Smith Analysis

Figure 6-1 Final Approved Scenario Transactions



Source: CDM Smith Analysis

Figure 6-2 Final Approved Scenario Revenue



Source: CDM Smith Analysis

6.3 Comparison with Baseline Forecast

Compared to the baseline forecast (i.e. without any changes in toll policies), transactions in the final approved scenario are about 2% higher in 2018 mostly due to the early enrollment option coverage and about 8% lower in the years 2019-2021 primarily due to the toll increase. A further step down to about 14% lower than baseline occurs in 2022 due to the ending of the early enrollment option coverage and the higher toll rates. Starting in 2030, total transactions decline because of the escalating toll rates, reaching 34% lower than the baseline by 2050.

Revenue is about 16% higher than the baseline in 2018 primarily due to the early enrollment option and about 25% higher in the years 2019-2021 due to the toll increase. Once the early enrollment option coverage ends, revenue is about 46% higher in 2022 rising slowly to about 56% higher than the baseline in 2040 and then ends up about 53% higher than the baseline by 2050.

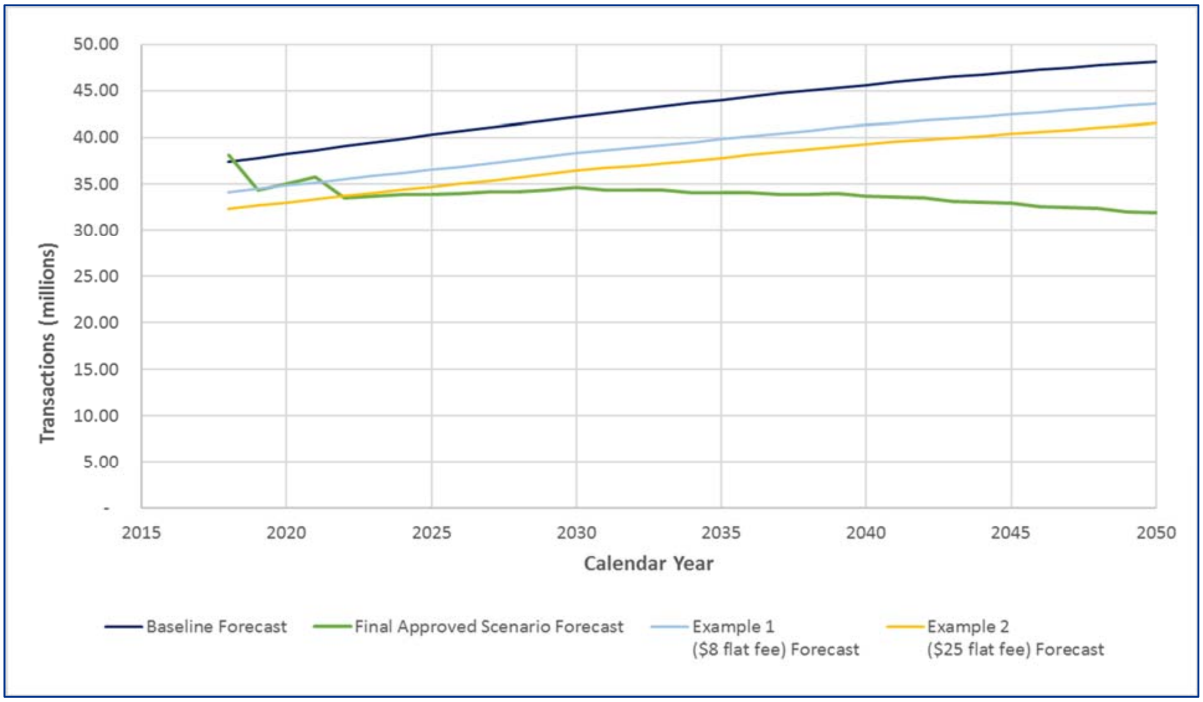
6.4 Comparison with Example 1 and Example 2 Forecasts

The final approved scenario is a hybrid of Examples 1 and 2 from Chapter 5. The results for Example 1 ($8 flat fee program), Example 2 ($25 flat fee program), and the baseline forecast are shown in **Figures 6-3** and **6-4**. These figures illustrate the relationship between the final approved scenario and the baseline and the examples covered in Chapter 5.

Transactions in the final approved scenario are higher initially than the other three, since there is no assumed toll increase for 2018 and the early enrollment option is assumed to be in place inducing some additional transactions above the baseline. In 2019-2021, transactions in the final approved scenario drop down to the Example 1 level since the early enrollment option at $24 for three years is similar to the $8 per year flat fee program of Example 1. Once the early enrollment option coverage ends in 2022, transactions decrease to a level similar to the $25 per year flat fee program of Example 2. However, as time goes on, the escalation in toll rates and annual flat fee causes a slow reduction in transactions below the results in Example 2. While some Class 1 customers will convert to the flat fee program, others will stop using the Turnpike as will some of the Classes 2-10 customers who are not eligible for the flat fee program.

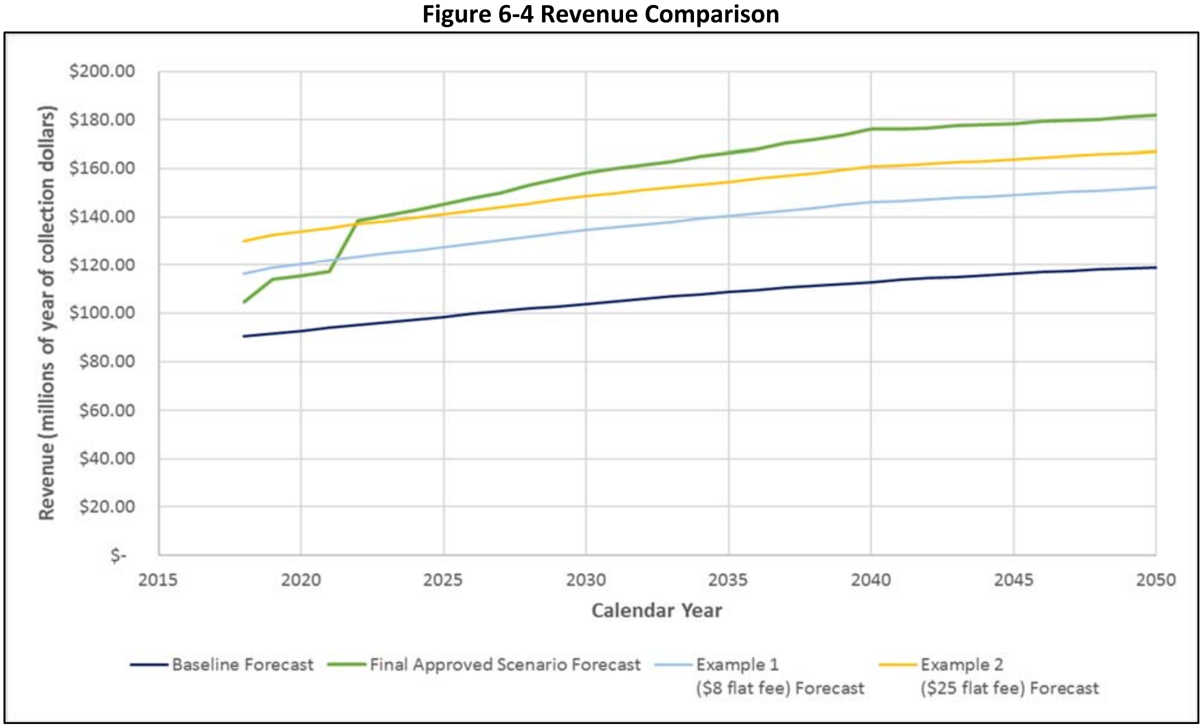
In terms of revenue, the final approved scenario starts higher than the baseline forecast due to the early enrollment option and regular per trip tolls. Revenue increases to almost the Example 1 level in 2019 due to the large toll increase and since the early enrollment option at $24 is similar to the $8 per year flat fee program of Example 1. In 2022 revenue jumps up to Example 2 levels because the early enrollment option ends and the $26.25 cost to of the flat fee program is similar to Example 2 ($25). Revenue continues to rise over time due to the escalation in both the flat fee program rate and toll rates.

Figure 6-3 Transactions Comparison



Source: CDM Smith Analysis

Figure 6-4 Revenue Comparison



Source: CDM Smith Analysis

6.5 Toll Rate Comparison

This section contains a comparison of the toll rate per mile between West Virginia Parkways (current and future toll rates as of January 1, 2019) and other toll agencies in the United States. **Tables 6-3** through **6-6** respectively show the toll rates per mile for passenger car cash payment, 5 axle truck cash payment, passenger car electronic tolling, and 5 axle truck electronic tolling. These tables show that the 2018 WVP toll rates per mile are below most comparable toll agencies. With the 2019 increase, toll rates will generally be closer to average rates charged by other agencies. Many of these toll agencies have adopted indexed toll rates or are considering toll increases.

Table 6-3 Toll Rate per Mile Comparison – Passenger Car Cash

Agency	Per Mile Rate
Metropolitan Washington Airports Authority (VA)	$ 0.26
Richmond Metropolitan Transportation Authority (VA)	$ 0.21
Osceola County (FL)	$ 0.16
Delaware Department of Transportation (DE)	$ 0.16
Central Florida Expressway Authority (FL)	$ 0.16
Pennsylvania Turnpike Commission (PA)	$ 0.15
Florida Turnpike Enterprise (FL)	$ 0.14
West Virginia Parkways (2019) (WV)	$ 0.14
Illinois State Toll Highway Authority (IL)	$ 0.12
New Jersey Turnpike Authority (NJ) - New Jersey Turnpike	$ 0.12
South Jersey Transportation Authority (NJ)	$ 0.09
Maryland Transportation Authority (MD)	$ 0.08
Ohio Turnpike and Infrastructure Commission (OH)	$ 0.08
Virginia Department of Transportation (VA)	$ 0.08
West Virginia Parkways (2018) (WV)	$ 0.07
Oklahoma Turnpike Authority (OK)	$ 0.07
New York State Thruway Authority (NY)	$ 0.06
Maine Turnpike Authority (ME)	$ 0.06
New Hampshire Department of Transportation (NH)	$ 0.06
Kansas Turnpike Authority (KS)	$ 0.06
Florida Department of Transportation (FL)	$ 0.05
New Jersey Turnpike Authority (NJ) - Garden State Parkway	$ 0.05

Table 6-4 Toll Rate per Mile Comparison – 5 Axle Truck Cash

Agency	Per Mile Rate
Metropolitan Washington Airports Authority (VA)	$ 0.78
Pennsylvania Turnpike Commission (PA)	$ 0.76
Osceola County (FL)	$ 0.65
Florida Turnpike Enterprise (FL)	$ 0.53
Illinois State Toll Highway Authority (IL)	$ 0.51
Maryland Transportation Authority (MD)	$ 0.48
West Virginia Parkways (2019) (WV)	$ 0.46
New Jersey Turnpike Authority (NJ) - New Jersey Turnpike	$ 0.42
Delaware Department of Transportation (DE)	$ 0.37
South Jersey Transportation Authority (NJ)	$ 0.34
Central Florida Expressway Authority (FL)	$ 0.33
Richmond Metropolitan Transportation Authority (VA)	$ 0.29
New York State Thruway Authority (NY)	$ 0.28
Maine Turnpike Authority (ME)	$ 0.25
West Virginia Parkways (2018) (WV)	$ 0.23
Oklahoma Turnpike Authority (OK)	$ 0.23
Ohio Turnpike and Infrastructure Commission (OH)	$ 0.21
New Hampshire Department of Transportation (NH)	$ 0.21
Florida Department of Transportation (FL)	$ 0.20
Virginia Department of Transportation (VA)	$ 0.15
Kansas Turnpike Authority (KS)	$ 0.15

Table 6-5 Toll Rate per Mile Comparison – Passenger Car ETC

Agency	Per Mile Rate
Transportation Corridor Agencies (CA)	$ 1.35
E-470 Public Highway Authority (CO)	$ 1.22
Harris County Toll Road Authority (TX)	$ 0.88
North Carolina Turnpike Authority (NC)	$ 0.84
Metropolitan Washington Airports Authority (VA)	$ 0.78
Tampa-Hillsborough County Expressway Authority (FL)	$ 0.77
North Texas Tollway Authority (TX)	$ 0.74
Maryland Transportation Authority (MD)	$ 0.70
Miami-Dade Expressway Authority (FL)	$ 0.69
Osceola County (FL)	$ 0.65
Pennsylvania Turnpike Commission (PA)	$ 0.55
Illinois State Toll Highway Authority (IL)	$ 0.53
West Virginia Parkways (2019*) (WV)	$ 0.40
New Jersey Turnpike Authority (NJ) - New Jersey Turnpike	$ 0.39
South Jersey Transportation Authority (NJ)	$ 0.34
Central Florida Expressway Authority (FL)	$ 0.33
Delaware Department of Transportation (DE)	$ 0.31
Richmond Metropolitan Transportation Authority (VA)	$ 0.29
Florida Turnpike Enterprise (FL)	$ 0.28
New York State Thruway Authority (NY)	$ 0.26
Maine Turnpike Authority (ME)	$ 0.23
Oklahoma Turnpike Authority (OK)	$ 0.21
West Virginia Parkways (2018) (WV)	$ 0.20
Florida Department of Transportation (FL)	$ 0.20
New Hampshire Department of Transportation (NH)	$ 0.19
Massachusetts Department of Transportation (MA)	$ 0.17
Ohio Turnpike and Infrastructure Commission (OH)	$ 0.17
Virginia Department of Transportation (VA)	$ 0.15
Kansas Turnpike Authority (KS)	$ 0.13

* Non-WV E-ZPass rate. Nearly all WV E-ZPass customers will join the flat fee program.

Table 6-6 Toll Rate per Mile Comparison – 5 Axle Truck ETC

Agency	Per Mile Rate
Transportation Corridor Agencies (CA)	$ 0.36
E-470 Public Highway Authority (CO)	$ 0.31
Metropolitan Washington Airports Authority (VA)	$ 0.26
North Carolina Turnpike Authority (NC)	$ 0.21
Richmond Metropolitan Transportation Authority (VA)	$ 0.21
Tampa-Hillsborough County Expressway Authority (FL)	$ 0.19
Harris County Toll Road Authority (TX)	$ 0.19
North Texas Tollway Authority (TX)	$ 0.18
Miami-Dade Expressway Authority (FL)	$ 0.17
Osceola County (FL)	$ 0.16
Delaware Department of Transportation (DE)	$ 0.16
Central Florida Expressway Authority (FL)	$ 0.14
West Virginia Parkways (2019*) (WV)	$ 0.14
New Jersey Turnpike Authority (NJ) - New Jersey Turnpike	$ 0.12
Pennsylvania Turnpike Commission (PA)	$ 0.11
Maryland Transportation Authority (MD)	$ 0.10
South Jersey Transportation Authority (NJ)	$ 0.09
Florida Turnpike Enterprise (FL)	$ 0.08
Virginia Department of Transportation (VA)	$ 0.08
Illinois State Toll Highway Authority (IL)	$ 0.07
Oklahoma Turnpike Authority (OK)	$ 0.06
Maine Turnpike Authority (ME)	$ 0.06
Ohio Turnpike and Infrastructure Commission (OH)	$ 0.05
Florida Department of Transportation (FL)	$ 0.05
New York State Thruway Authority (NY)	$ 0.05
New Jersey Turnpike Authority (NJ) - Garden State Parkway	$ 0.05
Kansas Turnpike Authority (KS)	$ 0.04
West Virginia Parkways (2018) (WV)	$ 0.04
Massachusetts Department of Transportation (MA)	$ 0.04
New Hampshire Department of Transportation (NH)	$ 0.04

* Non-WV E-ZPass rate, which is the dominate payment method currently representing 60% of all Class 5-10 transactions.

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Chapter 7

Sensitivity Tests

This chapter contains test results from experiments conducted to measure the sensitivity of the T&R estimates to key study assumptions. As described in CDM Smith's Disclaimer, the T&R estimates are forecasts of an uncertain future. The assumptions chosen for the tests are those that present risks and have a potential impact on the estimates. The purpose of the sensitivity tests is to help identify the sources of risk. All sensitivity tests were conducted for year 2030, and results were compared to the final approved scenario.

Each parameter was tested individually; the results are not necessarily additive or multiplicative, and do not provide an estimate of the overall impact if they were to occur in combinations. The tests include the following:

- Regional growth (all classes)
- Toll rates (all classes)
- Elasticity to toll rates (all classes)
- Pay share proportions (all classes)
- Frequency of use (Class 1)
- Annual flat fee program cost (Class 1)
- Transponder issuance cost (Class 1)
- Multi-plaza divider (Class 1)

7.1 Regional Growth

A sensitivity test related to regional growth assumptions was performed to measure the impact on overall T&R estimates for all vehicle classes.

The final approved scenario T&R estimates presented in Chapter 6 are based on the "baseline" socioeconomic forecast derived from an econometric analysis. Along with the baseline socioeconomic forecast, a more pessimistic socioeconomic forecast was prepared as described in Chapter 3.

Using the downside or pessimistic socioeconomic forecast for year 2030, transaction and toll revenue forecasts were developed and the results were compared against the final approved scenario. The results are presented in **Table 7-1**.

Table 7-1 Regional Growth Sensitivity Test

2030 Regional Growth Test	Toll Transactions (millions)					Revenue (millions year of collection dollars)				
	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Trans w/fat fee	Class 1 Flat Fee	Class 1 Tolled	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Revenue
Final Approved Scenario	13.96	12.56	0.81	7.27	**34.60**	$ 17.53	$ 44.89	$ 4.37	$ 91.30	**$ 158.09**
Downside Socio-economic	13.11	11.77	0.76	6.54	**32.18**	$ 16.50	$ 42.32	$ 4.12	$ 82.85	**$ 145.80**
% Change	*-6.1%*	*-6.3%*	*-5.6%*	*-10.1%*	***-7.0%***	*-5.9%*	*-5.7%*	*-5.6%*	*-9.3%*	***-7.8%***

Source: CDM Smith Analysis

For 2030, under the downside regional growth scenario, total transactions and revenue are expected to be reduced by approximately 7.0% and 7.8%, respectively.

7.2 Toll Rates

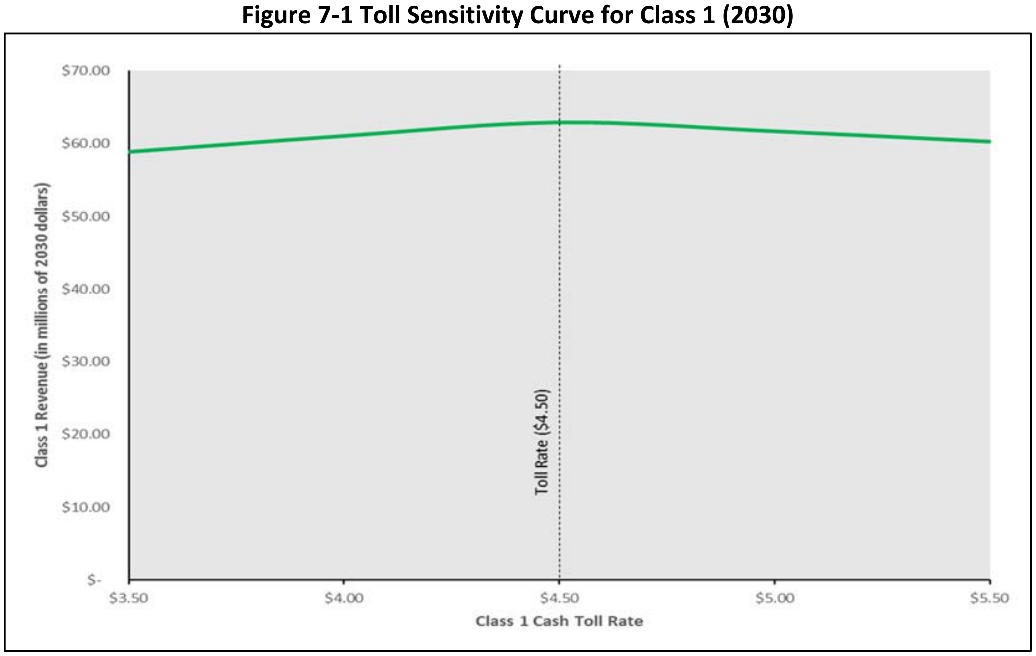
Toll rate sensitivity tests were performed first for Class 1 vehicles only, then for Classes 2-10, and finally for all vehicles. The final approved scenario is based on a 2030 cash toll rate of $4.50 for Class 1 vehicles and $15.50 for Class 8 vehicles. Toll sensitivity curves show the impact of varying toll rates on toll revenue.

7.2.1 Class 1 Toll Rate Sensitivity

A range of Class 1 cash toll rates from $3.50 to $5.50 in $0.50 increment was tested for year 2030. Toll rates for Classes 2-10 were kept unchanged in this test.

Figure 7-1 shows the toll sensitivity curve for 2030 Class 1 revenue including flat fee and toll revenues. The graph shows where the toll rate ($4.50 for Class 1 cash payment) in the final approved scenario corresponds to the revenue-maximizing toll rate.

Figure 7-1 Toll Sensitivity Curve for Class 1 (2030)



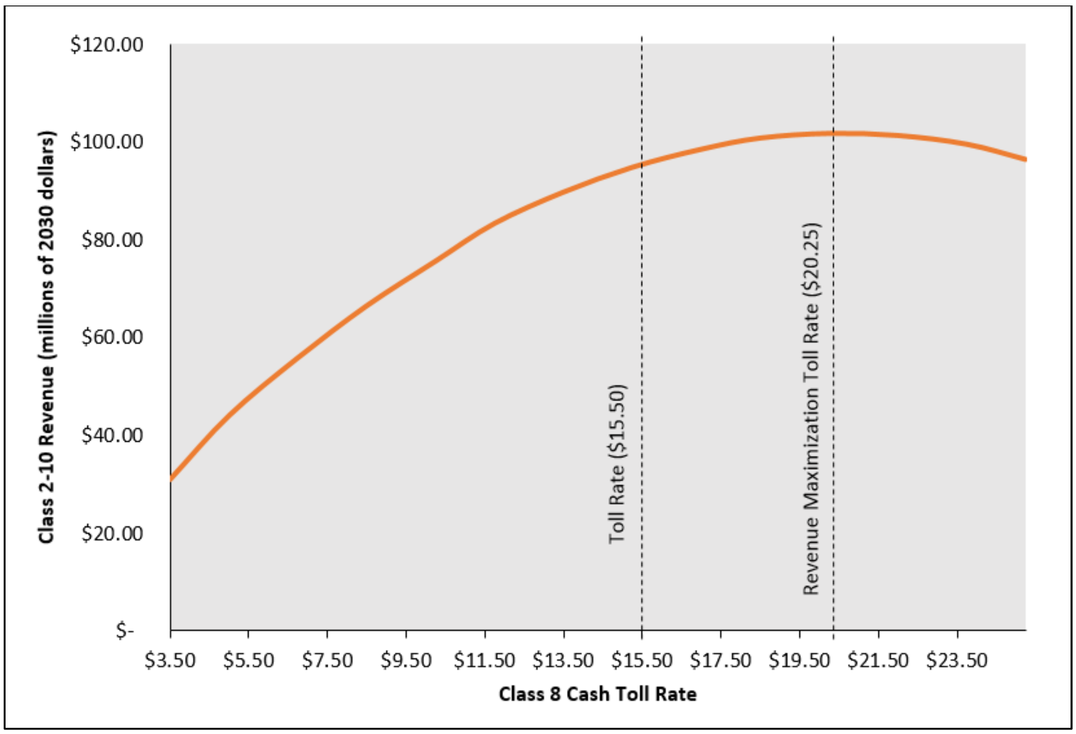
Source: CDM Smith Analysis

7.2.2 Classes 2-10 Toll Rate Sensitivity

Using the Class 8 cash toll rate as a heading to describe the range of toll rates, Class 8 cash toll rates from $3.50 to $25.25 were tested for year 2030. Toll rates for Class 1 vehicles were kept unchanged in this test. Toll rates for other payment types and other vehicle classes 2-10 were varied using the same proportions as the current toll rates.

Figure 7-2 shows the toll sensitivity curve for 2030 Classes 2-10 toll revenue. The graph shows the toll rate ($15.50 for Class 8 cash payment) used in the final approved scenario is lower than the revenue-maximizing toll rate, which would correspond to about $20.25 for Class 8 cash payment.

Figure 7-2 Toll Sensitivity Curve for Classes 2-10 (2030)



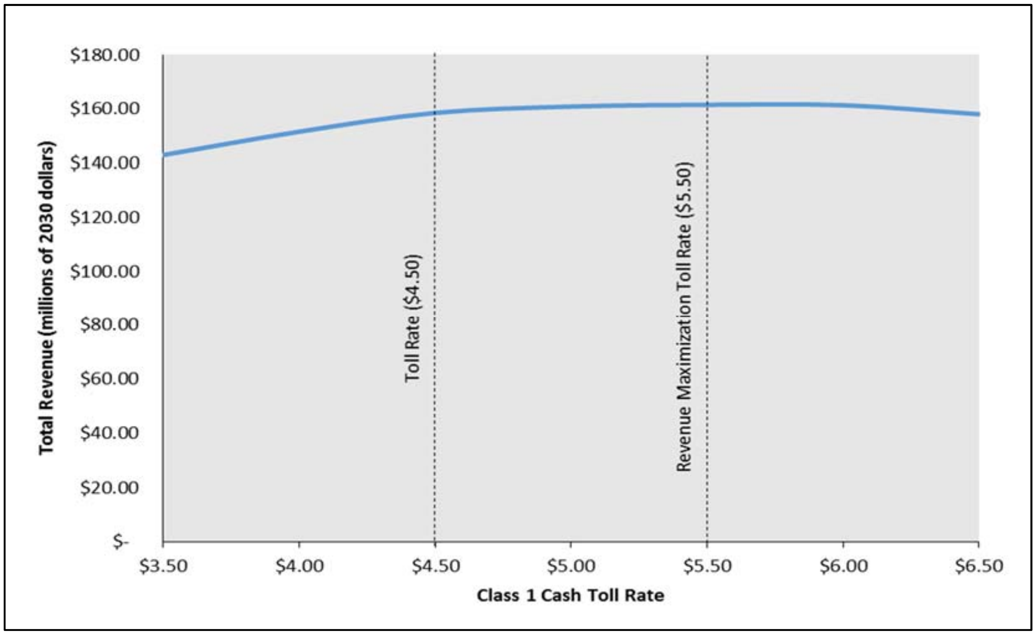
Source: CDM Smith Analysis

7.2.3 All Classes Toll Rate Sensitivity

For this test, a range of Class 1 cash toll rates from $3.50 to $6.50 in $0.50 increments was tested for year 2030. Toll rates for other payment types and other vehicle classes were varied using the same proportions as the current toll rates.

Figure 7-3 shows the toll sensitivity curve for 2030 total revenue including Classes 1 through 10. The graph shows the toll rates ($4.50 for Class 1 cash payment; $15.50 for Class 8 cash payment) used in the final approved scenario are lower than the revenue-maximizing toll rates, which would correspond to about $5.50 for Class 1 cash payment.

Figure 7-3 Toll Sensitivity Curve for All Classes (2030)



Source: CDM Smith Analysis

7.3 Toll Rate Elasticity

Sensitivity tests concerning toll rate elasticity factors were performed to establish impact on the T&R forecasts, first for Class 1 vehicles only, and then for Classes 2-10 vehicles. The final approved scenario uses elasticity factors of - 0.18 for Class 1 vehicles and - 0.196 for Classes 2-10 vehicles.

7.3.1 Class 1 Toll Rate Elasticity

In the Class 1 sensitivity test, an elasticity of - 0.30 (instead of - 0.18) was used. This elasticity factor only applies to the Class 1 vehicles that continue to pay cash after the flat fee program option is offered. The elasticity factor controls the percentage of suppressed trips in response to tolls. A higher elasticity leads to fewer trips, therefore less revenue from tolls.

The results of the Class 1 elasticity test are presented in **Table 7-2**. For 2030, under the scenario with a higher elasticity, the number of Class 1 transactions is reduced by 2.2%, and the Class 1 revenue decreases by 2.8%. As a percentage of the overall revenue, the test scenario leads to a 1.1% reduction.

Table 7-2 Class 1 Elasticity Sensitivity Test

2030 Class 1 Elasticity Test	Toll Transactions (millions)					Revenue (millions year of collection dollars)					
	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Total All Classes
Final Approved Scenario (- 0.18)	13.96	7.30	1.51	3.76	**26.53**	$ 17.53	$ 27.34	$ 3.25	$ 14.30	**$ 62.42**	**$ 157.92**
Elasticity - 0.30	13.96	6.71	1.51	3.76	**25.93**	$ 17.53	$ 25.60	$ 3.25	$ 14.30	**$ 60.68**	**$ 156.17**
% Change	*0.0%*	*-8.1%*	*0.0%*	*0.0%*	***-2.2%***	*0.0%*	*-6.4%*	*0.0%*	*0.0%*	***-2.8%***	***-1.1%***

Source: CDM Smith Analysis

7.3.2 Classes 2-10 Toll Rate Elasticity

A separate elasticity test was performed for Classes 2-10 vehicles, with the Class 1 elasticity factor remaining unchanged compared to the final approved scenario. For Classes 2-10 vehicles, the final approved scenario uses an elasticity factor of - 0.196. As part of the sensitivity test, two lower values (- 0.161 and - 0.126) as well as two higher values (- 0.231 and - 0.266) were tested. The results are presented in **Table 7-3**.

Table 7-3 Classes 2-10 Elasticity Sensitivity Test

2030 Class 2-10 Elasticity Test	Toll Transactions (millions)			Revenue (millions year of collection $)			
	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Class 2-10	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Class 2-10	Total All Classes
Final Approved Scenario (- 0.196)	0.81	7.27	**8.08**	$ 4.37	$ 91.30	**$ 95.68**	**$ 157.92**
Elasticity - 0.126	0.91	8.16	**9.07**	$ 4.91	$ 102.52	**$ 107.43**	**$ 169.67**
% Change	*12.2%*	*12.3%*	***12.3%***	*12.2%*	*12.3%*	***12.3%***	***7.4%***
Elasticity - 0.161	0.86	7.72	**8.58**	$ 4.64	$ 96.91	**$ 101.55**	**$ 163.79**
% Change	*6.1%*	*6.1%*	***6.1%***	*6.1%*	*6.1%*	***6.1%***	***3.7%***
Elasticity - 0.231	0.76	6.82	**7.59**	$ 4.11	$ 85.70	**$ 89.81**	**$ 152.05**
% Change	*-6.1%*	*-6.1%*	***-6.1%***	*-6.1%*	*-6.1%*	***-6.1%***	***-3.7%***
Elasticity - 0.266	0.71	6.38	**7.09**	$ 3.84	$ 80.09	**$ 83.93**	**$ 146.17**
% Change	*-12.2%*	*-12.3%*	***-12.3%***	*-12.2%*	*-12.3%*	***-12.3%***	***-7.4%***

Source: CDM Smith Analysis

For 2030, under the scenario with the highest elasticity (- 0.266), the number of Classes 2-10 transactions is reduced by 12.3%, and the Classes 2-10 revenue decreases by the same percentage. As a percentage of the overall revenue, this scenario leads to a 7.4% reduction.

7.4 Pay Share Proportions

As described in Chapter 5, the final approved scenario is based on certain assumptions regarding methods of payment (cash, WV E-ZPass, and Non-WV E-ZPass) for all classes of vehicles prior to implementation of the flat fee program, i.e., with no change in current toll policies. As part of this sensitivity test, different initial pay share proportions were tested to determine the impact on T&R forecasts. The sensitivity test was performed separately for Class 1 vehicles and for Classes 2-10 vehicles.

7.4.1 Class 1 Pay Share Proportions

As part of the Class 1 sensitivity test, two scenarios were tested for year 2030: a decrease or increase the initial cash share assumed in the final approved scenario by 10% at each plaza and splitting the remaining share according to the current proportion between the two E-ZPass types.

The results of this test are presented in **Table 7-4**.

Table 7-4 Class 1 Pay Share Proportions Sensitivity Test

2030 Class 1 Pay Share Test	Toll Transactions (millions)					Revenue (millions year of collection dollars)					
	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Total All Classes
Final Approved Scenario	13.96	7.30	1.51	3.76	**26.53**	$ 17.53	$ 27.34	$ 3.25	$ 14.30	**$ 62.42**	**$ 158.10**
Lower initial cash share	14.62	5.61	1.66	4.72	**26.61**	$ 15.28	$ 20.97	$ 3.48	$ 18.16	**$ 57.90**	**$ 153.58**
% Change	*4.7%*	*-23.1%*	*10.1%*	*25.5%*	***0.3%***	*-12.9%*	*-23.3%*	*7.3%*	*27.0%*	***-7.3%***	***-2.9%***
Higher initial cash share	13.21	9.00	1.35	2.80	**26.36**	$ 19.79	$ 34.27	$ 3.01	$ 10.44	**$ 67.51**	**$ 163.19**
% Change	*-5.4%*	*23.3%*	*-10.1%*	*-25.5%*	***-0.6%***	*12.9%*	*25.3%*	*-7.3%*	*-27.0%*	***8.1%***	***3.2%***

Source: CDM Smith Analysis

For 2030, under the scenario with a lower initial cash share, Class 1 transactions increase by 0.3%, and Class 1 revenue decreases by 7.3%. The impact on overall revenue is a 2.9% reduction.

For 2030, under the scenario with a higher initial cash share, Class 1 transactions decrease by 0.6%, and Class 1 revenue increases by 8.1%. The impact on overall revenue is a 3.2% increase.

The impact on revenue is primarily driven by the amount of cash transactions. With a lower initial cash share, there are fewer remaining cash payers after the revised flat fee is offered, therefore less revenue. The opposite trend is observed with a higher initial cash share, which leads to higher revenue.

7.4.2 Classes 2-10 Pay Share Proportions

A separate sensitivity test was performed for Classes 2-10 vehicles pay share proportions, with the Class 1 shares remaining unchanged compared to the final approved scenario. As part of the Classes 2-10 sensitivity test, two tests were performed for year 2030. Pay Share Test 1 involved lowering the initial cash share by 10% and distributing the remainder proportionally to WV E-ZPass and Non-WV E-ZPass. Pay Share Test 2 consisted of keeping the initial cash share unchanged but lowering the Non-WV E-ZPass share by 10% and increasing the WV E-ZPass share to compensate.

The results of this test are presented in **Table 7-5**.

Table 7-5 Classes 2-10 Pay Share Proportions Sensitivity Test

2030 Class 2-10 Pay Share Test	Toll Transactions (millions)			Revenue (millions year of collection dollars)			
	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Class 2-10	Class 2-4 Tolled	Class 5-10 (CV) Tolled	Total Class 2-10	Total All Classes
Final Approved Scenario	0.81	7.27	**8.08**	$ 4.37	$ 91.30	**$ 95.68**	**$ 157.92**
Pay Share Test 1	0.81	7.27	**8.08**	$ 4.32	$ 90.02	**$ 94.33**	**$ 156.57**
% Change	*0.0%*	*0.0%*	***0.0%***	*-1.4%*	*-1.4%*	***-1.4%***	***-0.9%***
Pay Share Test 2	0.81	7.27	**8.08**	$ 4.33	$ 90.58	**$ 94.91**	**$ 157.15**
% Change	*0.0%*	*0.0%*	***0.0%***	*-1.0%*	*-0.8%*	***-0.8%***	***-0.5%***

Source: CDM Smith Analysis

The amount of tolled transactions does not vary in this test, it is only the share by payment type that changes. In Pay Share Test 1, revenue from Classes 2-10 vehicles is expected to decrease by 1.4%, leading to an overall revenue decrease of 0.9%. In Pay Share Test 2, revenue from Classes 2-10 vehicles is expected to decrease by 0.8%, leading to an overall revenue decrease of 0.5%.

7.5 Frequency of Use

As described in Chapter 5, the Class 1 forecasting approach was based on certain assumptions to derive the frequency of use for cash customers since this information was not directly available from the collected data.

CDM Smith used a Pareto function, statistically fit, to describe the frequency of use at each plaza. The Pareto distributions at each plaza and model year were then adjusted so that the number of overall trips in the 30+ trips per year bin prior to implementation of the flat fee program exceeded the number of E-ZPass trips in that bin by 10%. The total trips met the baseline transactions forecast for the year being modeled. The sensitivity test held the number of WV E-ZPass customers constant but increased the cash exceedance to 15%. By increasing the share of high frequency cash users, the share of low frequency cash users was decreased accordingly.

The results of this test are presented in **Table 7-6**. For 2030, under the scenario with an increased initial share of high frequency cash trips, the number of Class 1 transactions is nearly unchanged, while the Class 1 revenue decreases by 1.4%. As a percentage of the overall revenue, the test scenario leads to a 0.5% reduction.

In this test, there is a swing toward more transactions being covered in the flat fee program since it is assumed more customers are high frequency users and they tend to choose the flat fee program more often. This results in fewer cash paying toll trips and less cash toll revenue. Additionally, the reduction in flat fee customers in the lower frequency bins exceeds the additional customers in the high frequency bins. Consequently, there is less flat fee revenue.

Table 7-6 Frequency of Use Sensitivity Test

2030 Frequency Test	Toll Transactions (millions)					Revenue (millions year of collection dollars)					
	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Total All Classes
Final Aproved Scenario	13.96	7.30	1.51	3.76	**26.53**	$ 17.53	$ 27.34	$ 3.25	$ 14.30	**$ 62.42**	**$ 158.10**
Higher Initial Share of High Frequency Cash Trips	14.13	7.15	1.51	3.76	**26.54**	$ 17.28	$ 26.76	$ 3.25	$ 14.30	**$ 61.58**	**$ 157.26**
% Change	*1.2%*	*-2.0%*	*0.0%*	*0.0%*	***0.1%***	*-1.5%*	*-2.1%*	*0.0%*	*0.0%*	***-1.4%***	***-0.5%***

Source: CDM Smith Analysis

7.6 Annual Flat Fee Cost

The final approved scenario assumes an annual flat fee cost of $28.94 in 2030, escalated every three years by 5% starting in 2022. The sensitivity of this parameter was tested by changing the value to either a lower value ($25), or a higher value ($30 and $35). The results are presented on **Table 7-7**.

With a lower annual flat fee cost ($25 in the test), more customers switch to the flat fee program, which reduces the amount of tolled revenue from cash, WV E-ZPass, and Non-WV E-ZPass. While there are more customers in the flat fee program, the lower fee results in a net loss in flat fee revenue. The effect on total revenue is a drop of 1.4%. The opposite trend is observed with a higher flat fee cost. Fewer customers switch to the flat fee program, generating more toll revenue and the higher fee, despite fewer flat fee customers, increases flat fee revenue. With a flat fee of $35 (i.e. 21% higher than the final approved scenario), the overall revenue increases by 1.6%.

Table 7-7 Annual Flat Fee Cost Sensitivity Test

2030 Flat Fee Test	Toll Transactions (millions)					Revenue (millions year of collection dollars)					
	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Total All Classes
Final Approved Scenario ($28.94)	13.96	7.30	1.51	3.76	**26.53**	$ 17.53	$ 27.34	$ 3.25	$ 14.30	**$ 62.42**	**$ 158.10**
$25 Flat Fee	14.88	7.01	1.44	3.71	**27.04**	$ 16.83	$ 26.20	$ 3.14	$ 14.08	**$ 60.24**	**$ 155.92**
% Change	*6.6%*	*-3.9%*	*-4.6%*	*-1.3%*	***1.9%***	*-4.0%*	*-4.2%*	*-3.4%*	*-1.6%*	***-3.5%***	***-1.4%***
$30 Flat Fee	13.72	7.37	1.52	3.77	**26.39**	$ 17.66	$ 27.65	$ 3.28	$ 14.36	**$ 62.94**	**$ 158.62**
% Change	*-1.8%*	*1.0%*	*1.3%*	*0.3%*	***-0.5%***	*0.7%*	*1.1%*	*0.9%*	*0.4%*	***0.8%***	***0.3%***
$35 Flat Fee	12.58	7.72	1.61	3.82	**25.74**	$ 17.98	$ 29.03	$ 3.43	$ 14.60	**$ 65.03**	**$ 160.71**
% Change	*-9.9%*	*5.7%*	*7.2%*	*1.8%*	***-3.0%***	*2.5%*	*6.2%*	*5.6%*	*2.1%*	***4.2%***	***1.6%***

Source: CDM Smith Analysis

7.7 Transponder Issuance Cost

The final approved scenario assumes that WV E-ZPass transponders are issued at a one-time initial cost of $13 (for those who do not already have a transponder). The sensitivity of this parameter was tested by changing the value to $5, $10, $15, and $20. The results are presented on **Table 7-8**.

While the revenue forecast does not include the revenue generated from the transponder sales, the issuance cost does affect customers' choice of payment method (flat fee program, cash, or E-ZPass) and therefore influences the revenue generated from the various payment types.

With a lower issuance cost ($5 or $10), there is a higher incentive to enter the flat fee program, producing more revenue from the annual flat fee and less revenue from cash payment. The increased revenue from the flat fee exceeds the reduction in toll revenue, leading to an overall revenue increase. The opposite trend is observed in the case of a higher issuance cost ($15 or $20) which produces a decrease in revenue. For instance, with an issuance cost of $20 (i.e. 54% higher than the final approved scenario), the overall revenue decreases by 0.4%.

Table 7-8 Transponder Issuance Cost Sensitivity Test

2030 Issuance Cost Test	Toll Transactions (millions)					Revenue (millions year of collection dollars)					
	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Total All Classes
Final Approved Scenario ($13)	13.96	7.30	1.51	3.76	**26.53**	$ 17.53	$ 27.34	$ 3.25	$ 14.30	**$ 62.42**	**$ 158.10**
$5 Issuance Cost	15.49	6.81	1.40	3.68	**27.37**	$ 21.07	$ 25.37	$ 3.08	$ 13.93	**$ 63.44**	**$ 159.12**
% Change	*10.9%*	*-6.8%*	*-7.2%*	*-2.2%*	***3.2%***	*20.1%*	*-7.2%*	*-5.2%*	*-2.6%*	***1.6%***	***0.6%***
$10 Issuance Cost	14.53	7.12	1.46	3.73	**26.84**	$ 18.79	$ 26.62	$ 3.18	$ 14.17	**$ 62.76**	**$ 158.44**
% Change	*4.1%*	*-2.5%*	*-2.7%*	*-0.8%*	***1.2%***	*7.2%*	*-2.6%*	*-2.0%*	*-0.9%*	***0.5%***	***0.2%***
$15 Issuance Cost	13.59	7.41	1.53	3.78	**26.32**	$ 16.74	$ 27.81	$ 3.29	$ 14.38	**$ 62.23**	**$ 157.91**
% Change	*-2.7%*	*1.6%*	*1.8%*	*0.5%*	***-0.8%***	*-4.5%*	*1.7%*	*1.4%*	*0.6%*	***-0.3%***	***-0.1%***
$20 Issuance Cost	12.68	7.70	1.60	3.82	**25.80**	$ 14.90	$ 28.95	$ 3.41	$ 14.57	**$ 61.84**	**$ 157.51**
% Change	*-9.2%*	*5.5%*	*6.4%*	*1.6%*	***-2.8%***	*-15.0%*	*5.9%*	*5.0%*	*1.9%*	***-0.9%***	***-0.4%***

Source: CDM Smith Analysis

7.8 Multi-plaza Divider

In the final approved scenario, the number of Class 1 customers was initially derived from the number of customers at each plaza. The total number of customers at all plazas was divided by three to account for one-way trips involving travel through more than one plaza. The sensitivity of this parameter was tested by changing the value from 3 to 2.5. The results are presented in **Table 7-9**.

Table 7-9 Multi-plaza Divider Sensitivity Test

2030 Multiplaza Divider Test	Toll Transactions (millions)					Revenue (millions year of collection dollars)					
	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Class 1 Flat Fee	Class 1 Cash	Class 1 WV E-ZPass	Class 1 Non-WV E-ZPass	Total Class 1	Total All Classes
Final Approved Scenario (Divider = 3)	13.96	7.30	1.51	3.76	**26.53**	$ 17.53	$ 27.34	$ 3.25	$ 14.30	**$ 62.42**	**$ 158.10**
Divider 2.5	13.96	7.30	1.51	3.76	**26.53**	$ 21.04	$ 27.34	$ 3.25	$ 14.30	**$ 65.93**	**$ 161.61**
% Change	*0.0%*	*0.0%*	*0.0%*	*0.0%*	***0.0%***	*20.0%*	*0.0%*	*0.0%*	*0.0%*	***5.6%***	***2.2%***

Source: CDM Smith Analysis

The divider factor does not have any impact on transactions or tolled revenue, it only affects the amount of fee generated by customers entering the flat fee program. By changing the parameter from 3 to 2.5, the revenue from Class 1 vehicles increases by 5.6%, which represents a 2.2% increase in overall revenue.

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Disclaimer

CDM Smith used currently-accepted professional practices and procedures in the development of the traffic and revenue (T&R) 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. In formulating the estimates, CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the West Virginia Parkways Authority (WVPA), Resource Systems Group, Inc. and StreetLight Data, Inc. 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 T&R 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 WVPA. These estimates and projections may not be indicative of actual or future values, and are therefore subject to substantial uncertainty. Future developments 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.

CDM Smith is not, and has not been, a municipal advisor as defined in Federal law (the Dodd Frank Bill) to WVPA and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to WVPA with respect to the information and material contained in this report. CDM Smith is not recommending and has not recommended any action to WVPA. WVPA 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 E

CONSULTING ENGINEER'S REPORT

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CONSULTING ENGINEER'S REPORT

for the

West Virginia Parkways Authority

CONSULTING ENGINEER'S DETAILED RECOMMENDATIONS BASED ON STUDY OF WV TURNPIKE'S NEEDS FOR ESTIMATED OPERATING EXPENSES, RENEWAL AND REPLACEMENT REQUIREMENTS AND CAPITAL COSTS

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July 23, 2018

General Engineering Consultant
to the
West Virginia Parkways Authority

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The purpose of this report is to provide information from the General Engineering Consultant of the West Virginia Parkways Authority (Authority) on:

(1) the current condition of the West Virginia Turnpike

(2) Recent accomplishments and investment in the Turnpike's good repair,

(3) the Turnpike's annual needs for operating expenses (see Table No.1),

(4) the Turnpike's annual needs for renewal and replacement requirements (see Table No. 2),

(5) the Turnpike's capital needs (see Table No. 3), and

(6) the recommendations of HNTB as to how to address these needs,

based on its latest inspections, its long-term familiarity with the Turnpike and its professional engineering judgment.

Turnpike operations are funded entirely by Turnpike toll revenues. Toll revenues must pay for operating and routine maintenance expenses, debt service, renewal and replacement requirements and capital needs.

This report recommends a 10-year program to address Authority needs. This report explains the reasoning behind this recommendation.

Bridge repairs and culvert repair needs comprise most of the critical needs facing the Authority. There are 116 bridges located on the Turnpike. Many of these bridge decks are approaching 30 years or older. This 10-year program calls for replacement of 42 bridge decks.
In addition, the Authority will need to upgrade its computer based toll collection system one time over the next 10 years. Replacement or spare parts are difficult to obtain and expensive. Computer operating systems and software are at or near obsolete. Because a failure of the system would present serious and major operational and financial issues for the Authority (or any toll road), system upgrades are essential and will provide for reliable and cost-effective toll collections.

The proposed 10-year program will also address the remaining other needs. This will include, without limitation bridge painting and repairs, guardrail replacement, culvert repairs, equipment replacement, signing and lighting repairs, paving, and pavement repairs and maintenance such as pothole patching.

This program will allow the Authority to ensure that the Turnpike is safe and properly maintained.

IN THE PROFESSIONAL ENGINEERING OPINION OF HNTB, THIS PROPOSED 10 YEAR PROGRAM IS WHAT IS NECESSARY TO MEET THE TURNPIKE INDENTURE'S "GOOD REPAIR" REQUIREMENTS IN THE FUTURE.

Summary of 10-Year Plan for R&R and Capital Investment in $Millions (rounded to $100,000)

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Renewal and Replacement										
Facilities/Safety/State Police (100/0)	1.0	1.1	0.7	0.7	0.8	0.9	0.8	0.8	0.4	0.4
Roadway Painting (80/20)	1.4	1.7	1.7	1.7	1.7	1.7	1.9	2.0	2.0	2.0
Shot-crete Repairs (100/0)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sign Replacement (100/0)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Roadway Lighting (100/0)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Full-Depth Concrete Repairs (60/40)	0.9	1.6	1.2	0.7	0.4	0.3	0.3	0.3	0.3	0.3
Guardrail Replacement (100/0)	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Culvert Repairs (50/50) ($2M 18FY)	4.7	6.0	6.7	6.9	7.0	7.3	7.5	7.7	8.0	8.5
Bridge and Facilities Repairs (100/0)	2.0	2.0	2.1	2.2	2.2	2.3	2.4	2.4	2.5	2.6
Bridge Painting R&R (50/50)($2.5M 18FY)	3.4	2.0	2.0	2.0	2.2	2.2	1.6	0.8	1.5	2.4
Bridge Deck Sealing and Overlays (100/0)	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Slope Conditioning (100/0)	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8
Equipment (100/0)	1.8	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.1
Total R&R Costs per FY	**17.2**	**18.1**	**18.3**	**18.2**	**18.4**	**18.8**	**18.8**	**18.5**	**19.4**	**21.0**
Capital Program										
Paving										
1A-16 (Carryover from FY 18)	2.0									
1A-18 (Carryover from FY 18)	12.0									
2A-18 (Carryover from FY 18)	8.0									
2A-16	5.0									
1A-19	7.0	15.0								
2A-19	2.0	8.0								
1A-20		3.0	5.3							
1A-21			5.0	5.0						
1A-22				5.6	3.0					
1A-23					5.0	4.3				
2A-23					4.6	10.0				
Paving FY 2024-2047 (50/50)						5.8	11.6	11.8	12.1	12.5
Facilities										
Toll System Upgrade	5.0							6.0		
Buildings	1.4	6.0	3.0							
Parking Lot Paving	0.6		1.0							
Misc Needs				1.0	1.0	1.0	1.1	1.1	1.1	1.2
Total Traditional Costs	43.0	32.0	14.3	11.6	13.6	21.1	12.7	18.9	13.2	13.7
Major Future Needs										
BDR-1-17, and 2-17 (Carryover from FY 18)	6.0									
BDR-1-18 (100/0)		6.5								
BDR-1-20, 2-20, 3-20, and 4-20 (50/50)		9.5	9.4							
BDR-1-21, 2-21, 3-21, and 4-21 (50/50)			9.7	9.7						
BDR-1-22, 2-22, 3-22, and 4-22 (50/50)				10.0	10.0					
BDR-1-23, 2-23, 3-23, and 4-23 (50/50)					10.3	10.3				
Annual Bridge Deck Replacements (50/50)						10.3	20.9	22.9	23.1	23.6
Yeager Bridge Painting NB and SB (50/50)				7.0	8.0	8.0	9.0			
Bluestone Bridge Painting (50/50)	5.0	5.0						5.0	6.0	
Total Major Needs Costs	11.0	21.0	19.1	26.7	28.3	28.6	29.9	27.9	29.1	23.6
Total Capital Costs per FY	**54.0**	**53.0**	**33.4**	**38.3**	**41.9**	**49.7**	**42.6**	**46.8**	**42.3**	**37.3**

1.0 INTRODUCTION AND PURPOSE

The purpose of this document is to provide a report from the General Engineering Consultant of the West Virginia Parkways Authority (Authority) on the current physical condition of the West Virginia Turnpike (Turnpike), to outline projects currently in progress on the Turnpike, and to document the adequacy or inadequacy of the current programs and capital needs.

This report identifies and details these expected needs and outlines how they must be addressed in our professional engineering judgment.

2.0 THE WEST VIRGINIA TURNPIKE SYSTEM

2.1 OVERVIEW OF THE WEST VIRGINIA TURNPIKE SYSTEM

The West Virginia Turnpike is an 88-mile long toll road extending from Charleston to Princeton, West Virginia. Originally constructed during the 1950s as a two-lane toll road through rugged mountains with passing lanes on steep grades, there were originally six interchanges. Eleven additional interchanges, including the I-64 Interchange south of Beckley, were added during a 15 year long upgrading period from 1972 to 1987. This resulted in a scenic, modern four-lane divided interstate highway with construction costs of nearly $741 million. Financing was accomplished through the use of federal highway funds on a 90% to 10% matching basis. The West Virginia Division of Highways (WVDOH) supplied the 10% matching funds. The Authority repaid the 10% matching funds to the WVDOH with the last payment made in June 1994. An eighteenth interchange was constructed at Beckley utilizing Turnpike funds. It was opened to traffic May 22, 1996. It eliminated a dangerous south bound merge condition and provided access for northbound and southbound traffic to the Beckley Travel Plaza, Caperton Center, and Raleigh County Route 11 (Dry Hill Road).

The Turnpike was originally financed in the 1950s with Turnpike toll revenue bonds. Overtime the Turnpike was upgraded to interstate standards, and other interstate highway connections to the Turnpike were completed (I-64, I-77 and I-79). In 1989 the Authority was formed as the successor to the original West Virginia Turnpike Commission. That same year, the Authority issued new Turnpike revenue and refunding bonds to refinance the original 1950's bonds, to repay the WVDOH its matching funds for the upgrade of the Turnpike to interstate standards and pay issuance costs. The 1989 bonds were refunded in 1993 to take advantage of lower interest rates, and have been refunded in 2002, 2003 and 2008. Under the existing and proposed Indentures, the Authority has various specific covenants that require consideration of operation and maintenance expenses of the Turnpike (including the "good repair" covenant and the bond debt service coverage requirements).

Tolls are collected at three (3) Mainline Barrier Toll Plazas and at the US 19 Interchange Plaza. Data regarding transactions and revenue are included in the West Virginia Turnpike 2018 Revenue Bond Study Report for the Authority by CDM Smith (2018 Revenue Bond Study).

Turnpike operations are funded entirely by Turnpike toll revenues. Toll revenues must pay for operating and routine maintenance expenses, debt service, renewal and replacement requirements and deferred maintenance and capital needs.

Since 2009, the WV Turnpike has performed the following major projects:

- 9 Major paving projects consisting of 6-8-inch asphalt overlays.
- 3 Bridge Deck Replacements by Accelerated Bridge Construction method with 2 more scheduled in September 2018.
- 9 Major culvert repair contracts consisting of pipe and drainage structure repairs.
- 3 Maintenance/Service Building facility reconstruction projects.

2.2 TURNPIKE SYSTEM CONDITION REPORTS INCLUDING REQUIRED MAINTENANCE AND REPAIR NEEDS

As part of the West Virginia Parkways Authority's overall financial planning, HNTB has reviewed the estimated total project costs for current and proposed West Virginia Turnpike projects, and has prepared estimates of Operating Expenses and Renewal and Replacement account requirements for the next 10 years. Specifically, HNTB has evaluated costs and other aspects of the following:

- Physical Condition of the Turnpike
- Operating Expenses (Table No. 1)
- Renewal and Replacement Needs (Table No. 2)
- 2019-2028 Capital Needs (Table No. 3)

The following sections report on the current physical condition of the Turnpike and descriptions and estimated costs of the backlog of essential deferred maintenance and capital needs.

General Physical Condition

Applying Federal Highway Agency (FHWA) developed standards of comparison, 80% of Turnpike roadways are in good to very good condition while only 20% are currently rated in fair to poor condition.

Specific descriptions and characterizations of roadway and related area conditions and maintenance problems are set out below.

Pavement and Shoulders

The Turnpike is currently nearing completion of a 10-year program of paving projects that has raised the good to very good condition from 45% to 80%.

HNTB has been carefully inspecting and preparing accurate reports on the condition of the West Virginia Turnpike for over 50 years. Yearly inspections of bridges, pavements, culverts, signs, lighting, pavement markings and other structures along or under the Turnpike are performed. The Annual Report, prepared by HNTB, contains information on the conditions of the various assets of the Turnpike and contains HNTB's funding recommendation for Renewal and Replacement Requirements for the next fiscal year.

HNTB is also required by the Turnpike bond indenture covenants to inspect and certify that the Turnpike is being operated and maintained in a sound and economical manner consistent with sound management practices and principles, and is being kept in good repair, working order and condition. In this report, these covenants collectively are sometimes referred to as "good repair" covenants. HNTB also prepares the yearly report which details the necessary repairs needed to maintain the Turnpike.

The Turnpike mainline roadways were originally constructed in the early 1950s of Portland Cement Concrete (PCC), and substantially redone in the 1970s and 1980s when the Turnpike was upgraded to interstate standards. Currently 80% of the pavements are rated to be in good to very good condition.

The 10-year program recommended in this report will address future paving needs. Those paving needs consist of rehabilitation of the pavements and overlays to preserve existing asphalt pavements.

This proposed 10-year program will address the need to rehabilitate pavements and develop a preservation plan to preserve all the asphalt pavements. At the end of this 10 years program, all Turnpike pavements will remain in very good or good condition.

Bridges

There are 116 bridges located on the Turnpike (106 painted steel bridges and 10 concrete bridges) and they remain in relatively good condition for their age; however, they require continual sweeping of deicing salts and abrasives from the decks, washing down steelwork exposed to deicing salts, sealing deck cracks, repairing defects and damages and repainting of structures at scheduled intervals. Since the upgrade of the Turnpike to interstate standards, all of the 106 painted steel bridges including the two major bridges over the Bluestone River and the two major bridges crossing the Kanawha River near Charleston have required repainting.

All the bridges have transverse cracks that allow de-icing salt solutions onto the steelwork causing corrosion, which, in turn, causes the concrete deck to chip along the edges of the beams. Delaminated areas and spalls are forming on the bottoms of those bridge decks where the bottom layer of deck reinforcing steel was not epoxy coated. (Delaminated areas and spalls essentially are holes in the bottom of the bridge decks.) The 10-year program calls for the replacement of 42 bridge decks. Many of these decks are 30 years old at this time.

The Federal Highway Administration (FHWA) mandates that these bridges be inspected every two (2) years. Approximately one half of the bridges are scheduled for inspection each year. In-Depth Bridge Inspections are required every six (6) years with Periodic Bridge Inspections at two-year intervals between. Underwater Bridge Inspections are required every five (5) years.

In addition to the bridge inspection reports, "Structure Inventory and Appraisal" forms (SIA Forms) are required by FHWA. These SIA Forms are ten (10) page reports that provide a variety of information in coded form that is required by the FHWA.

In accordance with an FHWA mandate, all of the West Virginia Turnpike bridges have been rated to determine maximum safe loads for the bridges. With regard to bridges, the Authority has analyzed overweight vehicles that may use the Turnpike's bridges to ensure no damage results from the overweight vehicles. All bridges have been inventoried and rated, and are being inspected, in accordance with FHWA Standards. Additional inspections were made on the Bluestone River Northbound and Southbound Bridges in accordance with state and federal instructions following the Minnesota Bridge collapse in 2007.

Bridge Approaches

Bridge approaches located on embankments settle relative to the bridge decks which are supported by substructure units firmly founded on bedrock or supported by piling driven to bedrock. Settled bridge approaches cause vehicles to bounce and cause the bridges to vibrate excessively. Periodic mill and overlay of the approaches is required.

Embankments and Cuts

Authority personnel continually remove slide debris and maintain roadway ditches, benches and backslopes.

Drainage Facilities

Culverts are subject to corrosion due to acid water runoff. There also are broken or collapsed pipes, rusted and leaking pipe inverts, and erosion at the outlet ends of pipes. Ditches require continued maintenance and clean-out. Approximately 40% of roadway pipes will need to be replaced or rehabilitated within the next 30 years.

Guardrail and Fencing

A recent 3-year program replaced older guardrail sections that have been deteriorated with rusted beams and posts. Guardrail needs will be reduced to yearly replacement on repair of damaged guardrail.

Toll Collection and Recording System

The Authority operates four toll plazas, which includes both maned and E-ZPass lanes. The WVPA's administration headquarters continues to self-operate E-ZPass customer service and violation enforcement activities.

A failure of the toll collection system would present serious and major operational and financial issues for the Authority. Therefore, upgrades of this system are essential and will provide reliable and cost-effective toll collections.

The proposed upgrades will replace aging systems that will be reaching the limits of its projected useful life. The upgrades will address issues of reliability, spare parts, video enforcement, cameras, computer enhancements, enhanced toll collection systems, expand the capabilities of the service system, storage and distribution of transponders, management and processing toll accounts, and maintenance of back-office system for computer data and hardware.

The upgrades will reduce financial risks, demonstrate the required performance accuracy, provide state of the art services to customers and position the Authority for long term operation of the toll collection system.

Other Miscellaneous Operations and Maintenance Required

In addition to the detailed areas of maintenance, repairs and operations required to be performed by the Authority as outlined above, the Authority is responsible for State police protection on the Turnpike and for two Public Service Commission (PSC) Commercial Motor Vehicle Officers and Vehicles assigned to the Turnpike and for routine maintenance, repairs, replacements, reconstruction and renovation of the facilities referenced below. These also must be paid for from Turnpike toll revenue. Such other miscellaneous maintenance and repairs include the following:

1. Signing, lighting, delineation and pavement marking;

2. Rest areas, travel plazas and tourist information and welcome centers;

3. Toll plazas and toll equipment;

4. Maintenance areas and related equipment;

5. Communication systems;

6. Administrative headquarters; and

7. Various vehicles, equipment and heavy equipment used in the operation and maintenance of the turnpike roadway.

2.3 OPERATING EXPENSES

Operating Expenses include all of the Authority's expenses in operating, maintaining and servicing the Turnpike system and otherwise carrying out and administering its related programs. Operating expenses include, for example, salaries, supplies, utilities, ordinary maintenance and repairs, insurance premiums, legal, accounting, management, traffic engineers and consulting engineers. Operating expenses do not include costs determined by the Consulting Engineers to be Renewal and Replacement requirements (see Section 2.4). Operating expenses also do not include depreciation or other non-cash accounting accruals or capital needs including major pavement rehabilitation and preservation as described further below.

The Authority has been proactive in implementing cost-saving measures. These cost-saving measures have included utilizing modern technology, utilizing the purchasing power created through statewide procurement contracts obtained and provided by the State of West Virginia's Purchasing Division, and implementing organizational efficiencies over the past 20 years. The implementation of these and other cost-cutting measures has limited the growth rate of operating expenses over the past 20 years.

A number of assumptions were used to project the Operating Expenses for the next 10 years:

1. Direct Salaries with projected growth of 2.0%.
2. Benefits with projected growth of 2.0%
3. All other operating Accounts with projected growth of 2.0%.
4. Non-departmental costs with projected growth of 2.0%.

Based upon all these factors, as well as specific knowledge of the operation of the Turnpike, projections for Operating Expenses for the fiscal years 2019 through 2028 are as follows:

Table No. 1

Year	Estimated Operating Expenses (In thousands)
2019	$43,093
2020	43,955
2021	44,834
2022	45,731
2023	46,645
2024	47,578
2025	48,530
2026	49,500
2027	50,490
2028	51,500

2.4 RENEWAL AND REPLACEMENT

Under the Indenture, annual Renewal and Replacement requirements must be determined and certified by the Consulting Engineers. Under the Indenture, Renewal and Replacement requirements exclude annual Operating Expenses and include those expenditures required in that year for keeping the Turnpike open to public travel and use.

Accordingly, Renewal and Replacement requirements constitute the most essential capital outlays for a given fiscal year. Renewal and Replacement requirements do not include longer-term capital needs of the Turnpike (that is, those capital needs which are not necessary to keep the Turnpike open for public travel and use in the fiscal year in question but which must be addressed in a reasonable time frame in subsequent fiscal years in order to meet the Authority's Indenture covenant to operate, keep and maintain the Turnpike in "good repair, working order and condition" and in a "sound and economical manner" consistent with "sound management practices and principles.") This "good repair" covenant is a separate requirement of the Indenture. These capital expenditures are shown in Table 3 below.

Based on the proposed 10-year program, our recommendations for Renewal and Replacement requirements for the fiscal years 2019 through 2028 are:

Table No. 2

Year of Expenditure	Estimated Renewal & Replacement Expenditure (In thousands)
2019	$17,200
2020	18,050
2021	18,340
2022	18,240
2023	18,390
2024	18,810
2025	18,820
2026	18,492
2027	19,380
2028	20,970

2.5 FUNDING NECESSARY TO MEET CAPITAL NEEDS

The Authority, in our professional judgment, needs to fund capital needs over a 10-year period as shown on Table No. 3 below.

Table No. 3

Year of Expenditure	Capital Expenditure
2019	$54,000
2020	53,000
2021	33,400
2022	38,300
2023	41,900
2024	49,700
2025	42,600
2026	46,800
2027	42,300
2028	37,300

3.0 CONCLUSION

IN THE PROFESSIONAL ENGINEERING OPINION OF HNTB, FUNDING THE OPERATING COSTS, RENEWAL AND REPLACEMENT COSTS AND CAPITAL NEEDS IDENTIFIED ABOVE OVER 10 YEARS IS WHAT IS NECESSARY TO MEET THE TURNPIKE INDENTURE'S "GOOD REPAIR" REQUIREMENT IN THE FUTURE.

4.0 ADDITIONAL IMPORTANT INFORMATION

The estimates for Capital Needs, Operating Expenses, and the Renewal and Replacement requirements contained herein have been evaluated in this analysis.

Estimates of probable costs and expenditures for the Capital Needs Program, Operating and Maintenance Expenses, and Renewal and Replacement requirements in future years are based upon such data as are available and on current construction and living cost trends. These estimates are intended to show a reasonable expense trend over a period of years, rather than exact expenses for any particular year. There could, of course, be years when these expenses could be higher or lower than indicated, depending upon economic conditions and other management and local factors that might affect costs and procedures at that time.

Neither the Authority nor HNTB has control over the cost of labor, materials or construction bidding methods. Accordingly, the Engineer cannot and does not warrant that costs will not vary from the Engineer's estimates of probable cost.

* * *

It has been a pleasure to serve as General Engineering Consultants from the conception of the West Virginia Turnpike through the retirement of the original Turnpike bonds and beyond. During our 67-year tenure, we have enjoyed an excellent relationship with the past Commission, the current Authority and the staff of the Turnpike. Each of these parties, in the respective areas of responsibility, has contributed materially to protect the bondholder's interests and to provide an excellent transportation facility for the State of West Virginia. We look forward to the continuation of this relationship.

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APPENDIX F

FORM OF CONTINUING DISCLOSURE AGREEMENT

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DISCLOSURE DISSEMINATION AGENT AGREEMENT

This Disclosure Dissemination Agent Agreement (the "Disclosure Agreement"), dated August 14, 2018, is executed and delivered by the West Virginia Parkways Authority (the "Issuer") and Digital Assurance Certification, L.L.C., as exclusive Disclosure Dissemination Agent (the "Disclosure Dissemination Agent" or "DAC") for the benefit of the Holders (hereinafter defined) of the Bonds (hereinafter defined) and in order to assist the Issuer in processing certain continuing disclosure with respect to the Bonds in accordance with Rule 15c2-12 of the United States Securities and Exchange Commission under the Securities Exchange Act of 1934, as the same may be amended from time to time (the "Rule").

The services provided under this Disclosure Agreement solely relate to the execution of instructions received from the Issuer through use of the DAC system and do not constitute "advice" within the meaning of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Act"). DAC will not provide any advice or recommendation to the Issuer or anyone on the Issuer's behalf regarding the "issuance of municipal securities" or any "municipal financial product" as defined in the Act and nothing in this Disclosure Agreement shall be interpreted to the contrary. DAC is not a "Municipal Advisor" as such term is defined in Section 15B of the Securities Exchange Act of 1934, as amended, and related rules.

SECTION 1. Definitions. Capitalized terms not otherwise defined in this Disclosure Agreement shall have the meaning assigned in the Rule or, to the extent not in conflict with the Rule, in the Official Statement (hereinafter defined). The capitalized terms shall have the following meanings:

"Annual Filing Date" means the date, set in Sections 2(a) (December 31 of each year) and 2(f), by which the Annual Report is to be filed with the MSRB.

"Annual Financial Information" means annual financial information as such term is used in paragraph (b)(5)(i) of the Rule and specified in Section 3(a) of this Disclosure Agreement.

"Annual Report" means an Annual Report containing Annual Financial Information described in and consistent with Section 3 of this Disclosure Agreement.

"Audited Financial Statements" means the annual financial statements of the Issuer for the prior fiscal year, certified by an independent auditor as prepared in accordance with generally accepted accounting principles or otherwise, as such term is used in paragraph (b)(5)(i)(B) of the Rule and specified in Section 3(b) of this Disclosure Agreement.

"Bonds" means the Issuer's Senior Lien Toll Revenue Bonds, Series 2018, as listed on the attached Exhibit A, with the 9-digit CUSIP numbers relating thereto.

"Certification" means a written certification of compliance signed by the Disclosure Representative stating that the Annual Report, Audited Financial Statements, Notice Event notice, Failure to File Event notice, Voluntary Event Disclosure or Voluntary Financial Disclosure delivered to the Disclosure Dissemination Agent is the respective Annual Report, Audited Financial Statements, Notice Event notice, Failure to File Event notice, Voluntary Event Disclosure or Voluntary Financial Disclosure required to be submitted to the MSRB under this Disclosure Agreement. A Certification shall accompany each such document submitted to the Disclosure Dissemination Agent by the Issuer and include the full name of the Bonds and the 9-digit CUSIP numbers for all Bonds to which the document applies.

"Disclosure Dissemination Agent" means Digital Assurance Certification, L.L.C, acting in its capacity as Disclosure Dissemination Agent hereunder, or any successor Disclosure Dissemination Agent designated in writing by the Issuer pursuant to Section 9 hereof.

"Disclosure Representative" means Parrish French, the Director of Finance for the Issuer, or his designee, or his successor, or such other person as the Issuer shall designate in writing to the Disclosure Dissemination Agent from time to time as the person responsible for providing Information to the Disclosure Dissemination Agent.

"Failure to File Event" means the Issuer's failure to file an Annual Report on or before the Annual Filing Date.

"Force Majeure Event" means: (i) acts of God, war, or terrorist action; (ii) failure or shut-down of the Electronic Municipal Market Access system maintained by the MSRB; or (iii) to the extent beyond the Disclosure Dissemination Agent's reasonable control, interruptions in telecommunications or utilities services, failure, malfunction or error of any telecommunications, computer or other electrical, mechanical or technological application, service or system, computer virus, interruptions in Internet service or telephone service (including due to a virus, electrical delivery problem or similar occurrence) that affect Internet users generally, or in the local area in which the Disclosure Dissemination Agent or the MSRB is located, or acts of any government, regulatory or any other competent authority the effect of which is to prohibit the Disclosure Dissemination Agent from performance of its obligations under this Disclosure Agreement.

"Holder" means any person (a) having the power, directly or indirectly, to vote or consent with respect to, or to dispose of ownership of, any Bonds (including persons holding Bonds through nominees, depositories or other intermediaries) or (b) treated as the owner of any Bonds for federal income tax purposes.

"Information" means, collectively, the Annual Reports, the Audited Financial Statements, the Notice Event notices, the Failure to File Event notices, the Voluntary Event Disclosures and the Voluntary Financial Disclosures.

"MSRB" means the Municipal Securities Rulemaking Board, or any successor thereto, established pursuant to Section 15B(b)(1) of the Securities Exchange Act of 1934.

"Notice Event" means any of the events enumerated in paragraph (b)(5)(i)(C) of the Rule and listed in Section 4(a) of this Disclosure Agreement.

"Obligated Person" means the Issuer.

"Official Statement" means that Official Statement prepared by the Issuer in connection with the Bonds, as listed on Appendix A.

"Voluntary Event Disclosure" means information of the category specified in any of subsections (e)(vi)(1) through (e)(vi)(11) of Section 2 of this Disclosure Agreement that is accompanied by a Certification of the Disclosure Representative containing the information prescribed by Section 7(a) of this Disclosure Agreement.

"Voluntary Financial Disclosure" means information of the category specified in any of subsections (e)(vii)(1) through (e)(vii)(9) of Section 2 of this Disclosure Agreement that is accompanied by a Certification of the Disclosure Representative containing the information prescribed by Section 7(b) of this Disclosure Agreement.

SECTION 2. Provision of Annual Reports.

(a) The Issuer shall provide, annually, an electronic copy of the Annual Report and Certification to the Disclosure Dissemination Agent not later than the Annual Filing Date. Promptly upon receipt of an electronic copy of the Annual Report and the Certification, the Disclosure Dissemination Agent shall provide an Annual Report to the MSRB not later than December 31 of the calendar year following the end of each fiscal year of the Issuer, commencing with the fiscal year ended June 30, 2018 (which is due December 31, 2018). Such date and each anniversary thereof is the Annual Filing Date. The Annual Report may be submitted as a single document or as separate documents comprising a package, and may cross-reference other information as provided in Section 3 of this Disclosure Agreement.

(b) If on the fifteenth (15th) day prior to the Annual Filing Date, the Disclosure Dissemination Agent has not received a copy of the Annual Report and Certification, the Disclosure Dissemination Agent shall contact the Disclosure Representative by telephone and in writing (which may be by e-mail) to remind the Issuer of its undertaking to provide the Annual Report pursuant to Section 2(a). Upon such reminder, the Disclosure Representative shall either (i) provide the Disclosure Dissemination Agent with an electronic copy of the Annual Report and the Certification no later than two (2) business days prior to the Annual Filing Date, or (ii) instruct the Disclosure Dissemination Agent in writing that the Issuer will not be able to file the Annual Report within the time required under this Disclosure Agreement, state the date by which the Annual Report for such year will be provided and instruct the Disclosure Dissemination Agent to immediately send a Failure to File Event notice to the MSRB in substantially the form attached as Exhibit B, accompanied by a cover sheet completed by the Disclosure Dissemination Agent in the form set forth in Exhibit C-1.

(c) If the Disclosure Dissemination Agent has not received an Annual Report and Certification by 10:00 a.m. Eastern time on the Annual Filing Date (or, if such Annual Filing Date falls on a Saturday, Sunday or holiday, then the first business day thereafter) for the Annual Report, a Failure to File Event shall have occurred and the Issuer irrevocably directs the Disclosure Dissemination Agent to immediately send a Failure to File Event notice to the MSRB in substantially the form attached as Exhibit B without reference to the anticipated filing date for the Annual Report, which may be accompanied by a cover sheet completed by the Disclosure Dissemination Agent in the form set forth in Exhibit C-1.

(d) If Audited Financial Statements of the Issuer are prepared but not available prior to the Annual Filing Date, the Issuer shall, when the Audited Financial Statements are available, provide at such time an electronic copy to the Disclosure Dissemination Agent, accompanied by a Certification for filing with the MSRB.

(e) The Disclosure Dissemination Agent shall:

(i) verify the filing specifications of the MSRB each year prior to the Annual Filing Date;

(ii) upon receipt, promptly file each Annual Report received under Sections 2(a) and 2(b) with the MSRB;

(iii) upon receipt, promptly file each Audited Financial Statement received under Section 2(d) hereof with the MSRB;

(iv) upon receipt, promptly file the text of each Notice Event received under Sections 4(a) and 4(b)(ii) with the MSRB, identifying the Notice Event as instructed by the Issuer pursuant to Section 4(a) or 4(b)(ii) hereof (being any of the categories set forth below) when filing pursuant to Section 4(c) of this Disclosure Agreement:

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 of determinations with respect to tax status of the security, or other events affecting the tax status of the security;

7. "Modifications to rights of securities holders, if material;"

8. "Bond calls, if material;"

9. "Defeasances;"

10. "Release, substitution, or sale of property securing repayment of the securities, if material;"

11. "Rating changes;"

12. "Tender offers;"

13. “Bankruptcy, insolvency, receivership or similar event of the obligated person;”

14. “Consummation of a merger, consolidation or acquisition involving the Authority, or the sale of all or substantially all of the assets of the County, 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 term, if material; and

15. “Appointment of a successor or additional trustee or the change of name of a trustee, if material.”

(v) upon receipt (or irrevocable direction pursuant to Section 2(c) of this Disclosure Agreement, as applicable), promptly file a completed copy of Exhibit B to this Disclosure Agreement with the MSRB, identifying the filing as “Failure to Provide Annual Report as Required” when filing pursuant to Section 2(b)(ii) or Section 2(c) of this Disclosure Agreement;

(vi) upon receipt, promptly file the text of each Voluntary Event Disclosure received under Section 7(a) with the MSRB, identifying the Voluntary Event Disclosure as instructed by the Issuer pursuant to Section 7(a) (being any of the categories set forth below) when filing pursuant to Section 7(a) of this Disclosure Agreement:

1. “amendment to continuing disclosure undertaking;”

2. “change in obligated person;”

3. “notice to investors pursuant to bond documents;”

4. “certain communications from the Internal Revenue Service,” other than those communications included in the Rule;

5. “secondary market purchases;”

6. “bid for auction rate or other securities;”

7. “capital or other financing plan;”

8. “litigation/enforcement action;”

9. “change of tender agent, remarketing agent, or other on-going party;”

10. “derivative or other similar transaction;” and

11. “other event-based disclosures;”

(vii) upon receipt, promptly file the text of each Voluntary Financial Disclosure received under Section 7(b) with the MSRB, identifying the Voluntary Financial Disclosure as instructed by the Issuer pursuant to Section 7(b) (being any of the categories set forth below) when filing pursuant to Section 7(b) of this Disclosure Agreement:

1. "quarterly/monthly financial information;"

2. "change in fiscal year/timing of annual disclosure;"

3. "change in accounting standard;"

4. "interim/additional financial information/operating data;"

5. "budget;"

6. "investment/debt/financial policy;"

7. "information provided to rating agency, credit/liquidity provider or other third party;"

8. "consultant reports;" and

9. "other financial/operating data."

(viii) provide the Issuer evidence of the filings of each of the above when made, which shall be by means of the DAC system, for so long as DAC is the Disclosure Dissemination Agent under this Disclosure Agreement.

(f) The Issuer may adjust the Annual Filing Date upon change of its fiscal year by providing written notice of such change and the new Annual Filing Date to the Disclosure Dissemination Agent and the MSRB, provided that the period between the existing Annual Filing Date and new Annual Filing Date shall not exceed one year.

(g) Anything in this Disclosure Agreement to the contrary notwithstanding, any Information received by the Disclosure Dissemination Agent before 10:00 a.m. Eastern time on any business day that it is required to file with the MSRB pursuant to the terms of this Disclosure Agreement and that is accompanied by a Certification and all other information required by the terms of this Disclosure Agreement will be filed by the Disclosure Dissemination Agent with the MSRB no later than 11:59 p.m. Eastern time on the same business day; provided, however, the Disclosure Dissemination Agent shall have no liability for any delay in filing with the MSRB if such delay is caused by a Force Majeure Event provided that the Disclosure Dissemination Agent uses reasonable efforts to make any such filing as soon as possible.

SECTION 3. Content of Annual Reports.

(a) Each Annual Report shall contain Annual Financial Information with respect to the Issuer, including the information of the type provided in the Official Statement as follows: The tables titled "Transactions," "Revenues," and "Historical Revenue, Expenditures and Debt Service Coverage" under the caption "SUMMARY OF HISTORICAL OPERATIONS."

(b) Audited Financial Statements as described in the Official Statement will be included in the Annual Report. If audited financial statements are not available, then unaudited financial statements, prepared in accordance with generally acceptable accounting principles as described in the Official Statement will be included in the Annual Report. In such event, Audited Financial Statements (if any) will be provided pursuant to Section 2(d).

Any or all of the items listed above may be included by specific reference from other documents, including official statements of debt issues with respect to which the Issuer is an "obligated person" (as defined by the Rule), which have been previously filed with the Securities and Exchange Commission or available on the MSRB Internet Website. If the document incorporated by reference is a final official statement, it must be available from the MSRB. The Issuer will clearly identify each such document so incorporated by reference.

If the Annual Financial Information contains modified operating data or financial information different from the Annual Financial Information agreed to in the continuing disclosure undertaking related to the Bonds, the Issuer is required to explain, in narrative form, the reasons for the modification and the impact of the change in the type of operating data or financial information being provided.

SECTION 4. Reporting of Notice Events.

(a) The occurrence of any of the following events with respect to the Bonds constitutes a Notice Event:

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 rights of Bond holders, if material;

8. Bond calls, if material, and tender offers;

9. Defeasances;

10. Release, substitution, or sale of property securing repayment of the Bonds, if material;

11. Rating changes;

12. Bankruptcy, insolvency, receivership or similar event of the Obligated Person;

    Note to subsection (a)(12) of this Section 4: For the purposes of the event described in subsection (a)(12) of this Section 4, the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for an Obligated Person in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the Obligated Person, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the Obligated Person.

13. The consummation of a merger, consolidation, or acquisition involving an Obligated Person or the sale of all or substantially all of the assets of the Obligated Person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material; and

14. Appointment of a successor or additional trustee or the change of name of a trustee, if material.

The Issuer shall, in a timely manner not later than nine (9) business days after its occurrence, notify the Disclosure Dissemination Agent in writing of the occurrence of a Notice Event. Such notice shall instruct the Disclosure Dissemination Agent to report the occurrence pursuant to subsection (c) and shall be accompanied by a Certification. Such notice or Certification shall identify the Notice Event that has occurred (which shall be any of the categories set forth in Section 2(e)(iv) of this Disclosure Agreement), include the text of the disclosure that the Issuer desires to make, contain the written authorization of the Issuer for the Disclosure Dissemination Agent to disseminate such information, and identify the date the Issuer desires for the Disclosure Dissemination Agent to disseminate the information (provided that such date is not later than the tenth (10^{th}) business day after the occurrence of the Notice Event).

(b) The Disclosure Dissemination Agent is under no obligation to notify the Issuer or the Disclosure Representative of an event that may constitute a Notice Event. In the event the Disclosure Dissemination Agent so notifies the Disclosure Representative, the Disclosure Representative will within two (2) business days of receipt of such notice (but in any event not later than the tenth (10^{th}) business day after the occurrence of the Notice Event, if the Issuer determines that a Notice Event has occurred), instruct the Disclosure Dissemination Agent that either (i) a Notice Event has not occurred and no filing is to be made or (ii) a Notice Event has occurred and the Disclosure Dissemination Agent is to report the occurrence pursuant to subsection (c) of this Section 4, together with a Certification. Such Certification shall identify the Notice Event that has occurred (which shall be any of the categories set forth in Section 2(e)(iv) of this Disclosure Agreement), include the text of the disclosure that the Issuer desires to make, contain the written authorization of the Issuer for the Disclosure Dissemination Agent to disseminate such information, and identify the date the Issuer desires for the Disclosure Dissemination Agent to disseminate the information (provided that such date is not later than the tenth (10^{th}) business day after the occurrence of the Notice Event).

(c) If the Disclosure Dissemination Agent has been instructed by the Issuer as prescribed in subsection (a) or (b)(ii) of this Section 4 to report the occurrence of a Notice Event, the Disclosure Dissemination Agent shall promptly file a notice of such occurrence with MSRB in accordance with Section 2 (e)(iv) hereof. This notice may be filed with a cover sheet completed by the Disclosure Dissemination Agent in the form set forth in Exhibit C-1.

SECTION 5. CUSIP Numbers. The Issuer will provide the Dissemination Agent with the CUSIP numbers for (i) new bonds at such time as they are issued or become subject to the Rule and (ii) any Bonds to which new CUSIP numbers are assigned in substitution for the CUSIP numbers previously assigned to such Bonds.

SECTION 6. Additional Disclosure Obligations. The Issuer acknowledges and understands that other state and federal laws, including but not limited to the Securities Act of 1933 and Rule 10b-5 promulgated under the Securities Exchange Act of 1934, may apply to the Issuer, and that the duties and responsibilities of the Disclosure Dissemination Agent under this Disclosure Agreement do not extend to providing legal advice regarding such laws. The Issuer acknowledges and understands that the duties of the Disclosure Dissemination Agent relate exclusively to execution of the mechanical tasks of disseminating information as described in this Disclosure Agreement.

SECTION 7. Voluntary Filing.

(a) The Issuer may instruct the Disclosure Dissemination Agent to file a Voluntary Event Disclosure with the MSRB from time to time pursuant to a Certification of the Disclosure Representative. Such Certification shall identify the Voluntary Event Disclosure (which shall be any of the categories set forth in Section 2(e)(vi) of this Disclosure Agreement), include the text of the disclosure that the Issuer desires to make, contain the written authorization of the Issuer for the Disclosure Dissemination Agent to disseminate such information, and identify the date the Issuer desires for the Disclosure Dissemination Agent to disseminate the information. If the Disclosure Dissemination Agent has been instructed by the Issuer as prescribed in this Section 7(a) to file a Voluntary Event Disclosure, the Disclosure Dissemination Agent shall promptly file such Voluntary Event Disclosure with the MSRB in accordance with Section 2(e)(vi) hereof. This notice may be filed with a cover sheet completed by the Disclosure Dissemination Agent in the form set forth in Exhibit C-2.

(b) The Issuer may instruct the Disclosure Dissemination Agent to file a Voluntary Financial Disclosure with the MSRB from time to time pursuant to a Certification of the Disclosure Representative. Such Certification shall identify the Voluntary Financial Disclosure (which shall be any of the categories set forth in Section 2(e)(vii) of this Disclosure Agreement), include the text of the disclosure that the Issuer desires to make, contain the written authorization of the Issuer for the Disclosure Dissemination Agent to disseminate such information, and identify the date the Issuer desires for the Disclosure Dissemination Agent to disseminate the information. If the Disclosure Dissemination Agent has been instructed by the Issuer as prescribed in this Section 7(b) hereof to file a Voluntary Financial Disclosure, the Disclosure Dissemination Agent shall promptly file such Voluntary Financial Disclosure with the MSRB in accordance with Section 2(e)(vii) hereof. This notice may be filed with a cover sheet completed by the Disclosure Dissemination Agent in the form set forth in Exhibit C-3.

(c) The parties hereto acknowledge that the Issuer is not obligated pursuant to the terms of this Disclosure Agreement to file any Voluntary Event Disclosure pursuant to Section 7(a) hereof or any Voluntary Financial Disclosure pursuant to Section 7(b) hereof.

(d) Nothing in this Disclosure Agreement shall be deemed to prevent the Issuer from disseminating any other information through the Disclosure Dissemination Agent using the means of dissemination set forth in this Disclosure Agreement or including any other information in any Annual Report, Audited Financial Statements, Notice Event notice, Failure to File Event notice, Voluntary Event Disclosure or Voluntary Financial Disclosure, in addition to that required by this Disclosure Agreement. If the Issuer chooses to include any information in any Annual Report, Audited Financial Statements, Notice Event notice, Failure to File Event notice, Voluntary Event Disclosure or Voluntary Financial Disclosure in addition to that which is specifically required by this Disclosure Agreement, the Issuer shall have no obligation under this Disclosure Agreement to update such information or include it in any future Annual Report, Audited Financial Statements, Notice Event notice, Failure to File Event notice, Voluntary Event Disclosure or Voluntary Financial Disclosure.

SECTION 8. Termination of Reporting Obligation. The obligations of the Issuer and the Disclosure Dissemination Agent under this Disclosure Agreement shall terminate with respect to the Bonds upon the legal defeasance, prior redemption or payment in full of all of the Bonds, when the Issuer is no longer an Obligated Person with respect to the Bonds, or upon delivery by the Disclosure Representative to the Disclosure Dissemination Agent of an opinion of counsel expert in federal securities laws to the effect that continuing disclosure is no longer required.

SECTION 9. Disclosure Dissemination Agent. The Issuer has appointed Digital Assurance Certification, L.L.C. as exclusive Disclosure Dissemination Agent under this Disclosure Agreement. The Issuer may, upon thirty (30) days prior written notice to the Disclosure Dissemination Agent, replace or appoint a successor Disclosure Dissemination Agent. Upon termination of DAC's services as Disclosure Dissemination Agent, whether by notice of the Issuer or DAC, the Issuer agrees to appoint a successor Disclosure Dissemination Agent or, alternately, agrees to assume all responsibilities of Disclosure Dissemination Agent under this Disclosure Agreement for the benefit of the Holders of the Bonds. Notwithstanding any replacement or appointment of a successor, the Issuer shall remain liable to the Disclosure Dissemination Agent until payment in full for any and all sums owed and payable to the

Disclosure Dissemination Agent. The Disclosure Dissemination Agent may resign at any time by providing thirty (30) days' prior written notice to the Issuer.

SECTION 10. Remedies in Event of Default. In the event of a failure of the Issuer or the Disclosure Dissemination Agent to comply with any provision of this Disclosure Agreement, the Holders' rights to enforce the provisions of this Agreement shall be limited solely to a right, by action in mandamus or for specific performance, to compel performance of the parties' obligations under this Disclosure Agreement. Any failure by a party to perform in accordance with this Disclosure Agreement shall not constitute a default on the Bonds or an Event of Default under the Indenture, or under any other document relating to the Bonds, and all rights and remedies shall be limited to those expressly stated herein.

SECTION 11. Duties, Immunities and Liabilities of Disclosure Dissemination Agent.

(a) The Disclosure Dissemination Agent shall have only such duties as are specifically set forth in this Disclosure Agreement. The Disclosure Dissemination Agent's obligation to deliver the information at the times and with the contents described herein shall be limited to the extent the Issuer has provided such information to the Disclosure Dissemination Agent as required by this Disclosure Agreement. The Disclosure Dissemination Agent shall have no duty with respect to the content of any disclosures or notice made pursuant to the terms hereof. The Disclosure Dissemination Agent shall have no duty or obligation to review or verify any Information or any other information, disclosures or notices provided to it by the Issuer and shall not be deemed to be acting in any fiduciary capacity for the Issuer, the Holders of the Bonds or any other party. The Disclosure Dissemination Agent shall have no responsibility for the Issuer's failure to report to the Disclosure Dissemination Agent a Notice Event or a duty to determine the materiality thereof. The Disclosure Dissemination Agent shall have no duty to determine, or liability for failing to determine, whether the Issuer has complied with this Disclosure Agreement. The Disclosure Dissemination Agent may conclusively rely upon Certifications of the Issuer at all times.

The obligations of the Issuer under this Section 11 shall survive resignation or removal of the Disclosure Dissemination Agent and defeasance, redemption or payment of the Bonds.

(b) The Disclosure Dissemination Agent may, from time to time, consult with legal counsel (either in-house or external) of its own choosing in the event of any disagreement or controversy, or question or doubt as to the construction of any of the provisions hereof or its respective duties hereunder, and shall not incur any liability and shall be fully protected in acting in good faith upon the advice of such legal counsel. The reasonable fees and expenses of such counsel shall be payable by the Issuer.

(c) All documents, reports, notices, statements, information and other materials provided to the MSRB under this Agreement shall be provided in an electronic format and accompanied by identifying information as prescribed by the MSRB.

SECTION 12. Amendment; Waiver. Notwithstanding any other provision of this Disclosure Agreement, the Issuer and the Disclosure Dissemination Agent 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 with expertise in federal securities laws acceptable to both the Issuer and the Disclosure Dissemination Agent to the effect that such amendment or waiver does not materially impair the interests of Holders of the Bonds and would not, in and of itself, cause the undertakings herein to violate the Rule if such amendment or waiver had been effective on the date hereof but taking into account any subsequent change in or official interpretation of the Rule; provided neither the Issuer or the Disclosure Dissemination Agent shall be obligated to agree to any amendment modifying their respective duties or obligations without their consent thereto.

Notwithstanding the preceding paragraph, the Disclosure Dissemination Agent shall have the right to adopt amendments to this Disclosure Agreement necessary to comply with modifications to and interpretations of the provisions of the Rule as announced by the Securities and Exchange Commission from time to time by giving not less than twenty (20) days' prior written notice of the intent to do so together with a copy of the proposed amendment to the Issuer. No such amendment shall become effective if the Issuer shall, within ten (10) days following the giving of such notice, send a notice to the Disclosure Dissemination Agent in writing that it objects to such amendment.

SECTION 13. Beneficiaries. This Disclosure Agreement shall inure solely to the benefit of the Issuer, the Disclosure Dissemination Agent, the Underwriters, and the Holders from time to time of the Bonds, and shall create no rights in any other person or entity.

SECTION 14. Governing Law. This Disclosure Agreement shall be governed by the laws of the State of West Virginia (other than with respect to conflicts of laws).

SECTION 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.

[Remainder of Page Intentionally Left Blank]

The Disclosure Dissemination Agent and the Issuer have caused this Disclosure Agreement to be executed, on the date first written above, by their respective officers duly authorized.

DIGITAL ASSURANCE CERTIFICATION, L.L.C.,
as Disclosure Dissemination Agent

By:____
Name: Jenny Emami
Title: Assistant CSM Director

WEST VIRGINIA PARKWAYS AUTHORITY

By: ______________________________________
Name: Ann V. Urling
Title: Chairman Designee

EXHIBIT A

NAME AND CUSIP NUMBERS OF BONDS

Name of Issuer	West Virginia Parkways Authority
Obligated Person(s)	West Virginia Parkways Authority
Name of Bond Issue:	Senior Lien Toll Revenue Bonds, Series 2018
Date of Issuance:	August 14, 2018
Date of Official Statement:	July 31, 2018

Maturity Year (June 1)	CUSIP
2019	956510AA9
2020	956510AB7
2021	956510AC5
2022	956510AD3
2023	956510AE1
2024	956510AF8
2025	956510AG6
2026	956510AH4
2027	956510AJ0
2028	956510AK7
2029	956510AL5
2030	956510AM3
2031	956510AN1
2032	956510AP6
2033	956510AQ4
2034	956510AR2
2035	956510AS0
2036	956510AT8
2037	956510AU5
2038	956510AV3
2039	956510AW1
2043	956510AX9
2047	956510AY7
2048	956510AZ4

EXHIBIT B

NOTICE TO MSRB OF FAILURE TO FILE ANNUAL REPORT AS REQUIRED

Issuer:	West Virginia Parkways Authority
Obligated Person:	West Virginia Parkways Authority
Name(s) of Bond Issue(s):	Senior Lien Toll Revenue Bonds, Series 2018
Date(s) of Issuance:	August 14, 2018
Date(s) of Disclosure Agreement:	August 14, 2018
CUSIP Numbers:	

NOTICE IS HEREBY GIVEN that the West Virginia Parkways Authority (the "Issuer") has not provided an Annual Report with respect to the above-named Bonds as required by the Disclosure Agreement between the Issuer and Digital Assurance Certification, L.L.C., as Disclosure Dissemination Agent. [The Issuer has notified the Disclosure Dissemination Agent that it anticipates that the Annual Report will be filed by ______________].

Dated: ______________________________

Digital Assurance Certification, L.L.C., as
Disclosure Dissemination Agent, on behalf of the
West Virginia Parkways Authority

____

cc:

EXHIBIT C-1
EVENT NOTICE COVER SHEET

This cover sheet and accompanying "event notice" will be sent to the MSRB, pursuant to Securities and Exchange Commission Rule 15c2-12(b)(5)(i)(C) and (D).

Issuer's and/or Other Obligated Person's Name:

West Virginia Parkways Authority

Issuer's Six-Digit CUSIP Number: 956510

or Nine-Digit CUSIP Number(s) of the bonds to which this event notice relates:

956510___

Number of pages attached: _____

____ Description of Notice Events (Check One):

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, IRS notices or events affecting the tax status of the security;"
7.______"Modifications to rights of securities holders, if material;"
8.______"Bond calls, if material;"
9.______"Defeasances;"
10._____"Release, substitution, or sale of property securing repayment of the securities, if material;"
11._____"Rating changes;"
12._____"Tender offers;"
13._____"Bankruptcy, insolvency, receivership or similar event of the obligated person;"
14._____"Merger, consolidation, or acquisition of the obligated person, if material;" and
15._____"Appointment of a successor or additional trustee, or the change of name of a trustee, if material."

____ Failure to provide annual financial information as required.

I hereby represent that I am authorized by the issuer or its agent to distribute this information publicly:

Signature:

____

Name: ____________________________________ Title: ______________________________________

Digital Assurance Certification, L.L.C.
315 E. Robinson Street
Suite 300
Orlando, FL 32801
407-515-1100

Date: ________________________

EXHIBIT C-2
VOLUNTARY EVENT DISCLOSURE COVER SHEET

This cover sheet and accompanying "voluntary event disclosure" will be sent to the MSRB, pursuant to the Disclosure Dissemination Agent Agreement dated August 14, 2018, between the West Virginia Parkways Authority and DAC.

Issuer's and/or Other Obligated Person's Name:

West Virginia Parkways Authority

Issuer's Six-Digit CUSIP Number: 956510

or Nine-Digit CUSIP Number(s) of the bonds to which this event notice relates:

956510___

Number of pages attached: _____

____ Description of Voluntary Event Disclosure (Check One):

1.______"amendment to continuing disclosure undertaking;"
2.______"change in obligated person;"
3.______"notice to investors pursuant to bond documents;"
4.______"certain communications from the Internal Revenue Service;"
5.______"secondary market purchases;"
6.______"bid for auction rate or other securities;"
7.______"capital or other financing plan;"
8.______"litigation/enforcement action;"
9.______"change of tender agent, remarketing agent, or other on-going party;"
10._____"derivative or other similar transaction;" and
11._____"other event-based disclosures."

I hereby represent that I am authorized by the issuer or its agent to distribute this information publicly:

Signature:

____

Name: ___________________________________Title: ____

Digital Assurance Certification, L.L.C.
315 E. Robinson Street
Suite 300
Orlando, FL 32801
407-515-1100

Date: _________________

EXHIBIT C-3
VOLUNTARY FINANCIAL DISCLOSURE COVER SHEET

This cover sheet and accompanying "voluntary financial disclosure" will be sent to the MSRB, pursuant to the Disclosure Dissemination Agent Agreement dated August 14, 2018, between the West Virginia Parkways Authority and DAC.

Issuer's and/or Other Obligated Person's Name:

West Virginia Parkways Authority

Issuer's Six-Digit CUSIP Number: 956510

or Nine-Digit CUSIP Number(s) of the bonds to which this event notice relates:

956510___

Number of pages attached: _____

____ Description of Voluntary Financial Disclosure (Check One):

1.______"quarterly/monthly financial information;"
2.______"change in fiscal year/timing of annual disclosure;"
3.______"change in accounting standard;"
4.______"interim/additional financial information/operating data;"
5.______"budget;"
6.______"investment/debt/financial policy;"
7.______"information provided to rating agency, credit/liquidity provider or other third party;"
8.______"consultant reports;" and
9.______"other financial/operating data."

I hereby represent that I am authorized by the issuer or its agent to distribute this information publicly:

Signature:

____

Name: ____________________________________ Title: ____

Digital Assurance Certification, L.L.C.
315 E. Robinson Street
Suite 300
Orlando, FL 32801
407-515-1100

Date: _________________

APPENDIX G

BOOK-ENTRY ONLY SYSTEM

The Depository Trust Company ("DTC"), New York, New York, will act as securities depository for the Series 2018 Senior Lien Bonds. The Series 2018 Senior Lien 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 Series 2018 Senior Lien Bond certificate will be issued for each maturity of the Series 2018 Senior Lien Bonds and in the aggregate principal amount of such maturity, and will be deposited with DTC.

DTC 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, as amended. 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 bond certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation, and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC System is also available to others such as both U.S. and non-U.S. securities, brokers and dealers, banks, trust companies and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has a AA+ rating from S&P. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of Series 2018 Senior Lien Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2018 Senior Lien Bonds on DTC's records. The ownership interest of each actual purchaser of each Series 2018 Senior Lien Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2018 Senior Lien Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Series 2018 Senior Lien Bonds, except in the event that use of the book-entry system for the Series 2018 Senior Lien Bonds is discontinued.

To facilitate subsequent transfers, all Series 2018 Senior Lien 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 2018 Senior Lien 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 2018 Senior Lien Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2018 Senior Lien Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Redemption and other notices shall be sent to DTC. If less than all Series 2018 Senior Lien Bonds of a maturity and series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such Series 2018 Senior Lien Bonds to be redeemed.

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.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to Series 2018 Senior Lien 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 2018 Senior Lien Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Payments of principal of and interest on the Series 2018 Senior Lien 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 principal and interest on the Series 2018 Senior Lien Bonds 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.

THE AUTHORITY AND THE TRUSTEE WILL HAVE NO RESPONSIBILITY OR OBLIGATION TO THE DIRECT PARTICIPANTS, INDIRECT PARTICIPANTS OR THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE PAYMENTS TO OR THE PROVIDING OF NOTICE FOR SUCH DIRECT PARTICIPANTS, INDIRECT PARTICIPANTS, OR BENEFICIAL OWNERS. PAYMENTS MADE TO DTC OR ITS NOMINEE SHALL SATISFY THE AUTHORITY'S OBLIGATION UNDER THE INDENTURE TO THE EXTENT OF SUCH PAYMENTS.

SO LONG AS CEDE & CO., AS NOMINEE OF DTC, IS THE REGISTERED OWNER OF THE SERIES 2018 SENIOR LIEN BONDS, REFERENCES TO THE HOLDERS OF THE SERIES 2018 SENIOR LIEN BONDS OR OWNERS OF THE SERIES 2018 SENIOR LIEN BONDS, SHALL MEAN CEDE & CO., AND SHALL NOT MEAN THE BENEFICIAL OWNERS.

In the event that either (a) the Authority receives notice from DTC to the effect that DTC is unable or unwilling to discharge its responsibilities as a clearing agency for the Series 2018 Senior Lien Bonds or (b) the Authority elects to discontinue its use of DTC as a clearing agency for the Series 2018 Senior Lien Bonds, then the Authority will do or perform or cause to be done or performed all acts or things, not adverse to the rights of the holders of the Series 2018 Senior Lien Bonds, as are necessary or appropriate to discontinue use of DTC as a clearing agency for the Series 2018 Senior Lien Bonds and to transfer the ownership of each of the Series 2018 Senior Lien Bonds to such person or persons, including any clearing agency, as provided in the Indenture. Any expenses of such a discontinuation and transfer, including any expenses of printing new certificates to evidence the Series 2018 Senior Lien Bonds, will be paid by the Authority.

According to DTC, the foregoing information with respect to DTC has been provided to the industry for informational purposes only and is not intended to serve as a representation, warranty or contract modification of any kind.

The information in this section concerning DTC and DTC's book-entry only system has been obtained from DTC. The Authority, the State and the Underwriter take no responsibility for the accuracy thereof.

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APPENDIX H

MEMORANDUM OF UNDERSTANDING

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MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING (this "MOU") effective as of August 1, 2018, is made by and among the STATE OF WEST VIRGINIA, DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, acting by and through its Secretary of Transportation (the "Division"), the WEST VIRGINIA STATE TREASURER (the "Treasurer"), the WEST VIRGINIA PARKWAYS AUTHORITY (the "Parkways Authority"), and United bank, a Virginia banking corporation, as Trustee (the "Trustee") under that certain Master Trust Indenture dated as of August 1, 2018 (the "Master Trust Indenture"), by and between the Authority and the Trustee, and that certain First Supplemental Trust Indenture dated as of August 1, 2018 by and between the Authority and Trustee (the "First Supplemental Indenture", and together with the Master Trust Indenture, the "Indenture").

WITNESSETH THAT:

WHEREAS, Article 16A, Chapter 17 of the Code of West Virginia, 1931, as amended (the "Act"), empowers the Authority to construct, reconstruct, improve, maintain, repair, and operate parkway projects within the State and empowers the Authority to issue bonds to provide for the costs of paying all or any part of any one or more such projects;

WHEREAS, under Section 5 of the Act, "parkway projects" include (a) projects to be constructed, reconstructed, improved, maintained, repaired, and operated by the Authority on the West Virginia Turnpike ("On-Turnpike Authority Projects"), as well as (b) certain projects to be constructed, reconstructed, improved, maintained, repaired, and operated by the Division that are located off the West Virginia Turnpike (the "Turnpike") in ten specific counties identified in the Act, namely, Raleigh County, Fayette County, Wyoming County, Mercer County, Kanawha County, Greenbrier County, Monroe County, Summers County, McDowell County, and Nicholas County (collectively, the "Project Counties"), and further are included in the projects that were referenced in the Division of Highways' Statewide Transportation Improvement Plan as it existed on June 1, 2017, or in the West Virginia Division of Highways SOS Transportation Investment Program Candidate Project List dated May 3, 2017, to the extent allowed under the Act and applicable federal laws (collectively, "Off-Turnpike WVDOH Projects", and together with On-Turnpike Authority Projects, "Parkway Projects");

WHEREAS, on June 7, 2018, the Authority, pursuant to the Act, adopted a Resolution (the "Resolution") that, among other things, authorized the issuance of Senior Lien Turnpike Toll Revenue Bonds, Series 2018, in an amount not to exceed $200,000,000.00 (the "Series 2018 Bonds");

WHEREAS, as authorized by the Act and the Resolution, a portion of the proceeds of such Series 2018 Bonds will be deposited in the State Treasury within the State Road Fund, as hereinafter further provided, to pay all or a portion of the costs of certain Off-Turnpike WVDOH Projects which, pursuant to the Act, were projects that were referenced in the Division of Highways' Statewide Transportation Improvement Plan as it existed on June 1, 2017, or in the West Virginia Division of Highways SOS Transportation Investment Program Candidate Project List dated May 3, 2017 (collectively, the "Potential Off-Turnpike WVDOH Projects"), and in the Project Counties;

WHEREAS, Section 11 of the Act requires a special account to be established for such proceeds, within the State Road Fund, which special account is to be designated as the "State Road Construction Account" (the "State Road Construction Account") and held in the State Treasury, to be expended by the Division on Off-Turnpike WVDOH Projects;

WHEREAS, the State Road Construction Account is to include all amounts allocated and disbursed to the Division by, or at the direction of, the Authority for Off-Turnpike WVDOH Projects, including a portion of the proceeds of Series 2018 Bonds issued as provided in the Act;

WHEREAS, Section 103 and Sections 141 to 150 of the Internal Revenue Code of 1986, as amended (the "Federal Tax Requirements"), impose certain requirements on the expenditure and investment of proceeds of tax-exempt municipal securities and require compliance with those requirements in order for interest on an issue of tax-exempt securities to continue to remain so excludable, and such requirements relate to the character of the facilities to be financed with the proceeds of such issue, the expenditure of funds with respect to the projects to be financed with such proceeds, and the rebate to the Federal Government of certain investment earnings with respect to such proceeds;

WHEREAS, the Authority, as successor to the West Virginia Turnpike Commission, the Division and Federal Highway Administration of the United States Division of Transportation ("FHWA") are parties to that certain Memorandum of Supplemental Agreement, dated December 13, 1988 (the "1988 Tri-Partite Agreement"), as amended and restated by that certain Amended and Restated Agreement dated as of June 1, 2018 (the "2018 Tri-Partite Agreement", and together with the 1988 Tri-Partite Agreement, the "Tri-Partite Agreement"), that allows for such use of Turnpike toll revenues;

WHEREAS, the Resolution also authorized and approved the execution of the Master Trust Indenture, the First Supplemental Indenture and other documents relating to the Series 2018 Bonds, including this MOU;

WHEREAS, the parties hereto wish to enter into this MOU for the purposes, and upon the terms and conditions, set forth herein.

NOW THEREFORE, in consideration of the foregoing and other mutual benefits among them, the parties hereto do hereby covenant and agree as follows:

1. The Division shall create or cause to be created in the State Road Fund (a) the State Road Construction Account as contemplated by the Act and (b) a sub-account within such State Road Construction Account for certain proceeds of the Series 2018 Bonds, which sub-account shall be designated as the "Series 2018 Sub-Account" as contemplated by the Indenture. The Authority and the Treasurer shall assist, and cooperate with, the Division in the creation and establishment of the State Road Construction Account and the Series 2018 Sub-Account, respectively.

2. Upon receipt of the proceeds of the Series 2018 Bonds that have been designated by the Authority to finance the Off-Turnpike WVDOH Projects identified in Exhibit A hereto (together with substituted and additional projects as permitted by the provisions of

Section 3 of this MOU, below, the "Series 2018 Off-Turnpike WVDOH Projects"), which proceeds are estimated to be in the amount of $172,150,000 and shall initially be deposited along with other net proceeds of the Series 2018 Bonds with the Trustee, as provided in the First Supplemental Indenture, and the Trustee, in accordance with the terms of the Indenture, shall immediately transfer $172,150,000 of such proceeds to the State Treasurer for deposit into said State Road Construction Account in the Series 2018 Sub-Account.

3. The Division agrees to undertake the Series 2018 Off-Turnpike WVDOH Projects and to pay the costs thereof from the amounts available therefor in the Series 2018 Sub-Account (including investment earnings, if any) within the State Road Construction Account; provided, however, that if such amounts are not sufficient to complete such projects, then the Division agrees to provide such additional funding as shall be necessary to complete such projects and further agrees and acknowledges that the Authority shall have no liability or responsibility for providing any additional funding for such projects beyond the initial deposit into the Series 2018 Sub-Account required under Section 2 of this MOU; provided, further, that, if necessary to spend the amounts available to fund the Series 2018 Off-Turnpike WVDOH Projects (for example, without limitation, in the event that, after such projects are bid out, the actual cost thereof turns out to be lower than the Division's original engineer's estimates), or for other documented good cause, the Division shall substitute and/or identify and designate additional Off-Turnpike WVDOH Projects from Potential Off-Turnpike WVDOH Projects approved in the Resolution if such substitute and/or additional projects are first approved by Bond Counsel rendering approving opinions with respect to the Series 2018 Bonds as Off-Turnpike WVDOH Projects eligible to be financed in accordance with the Act, the Tri-Partite Agreement and the Federal Tax Requirements; and provided, further, that the Division shall not use any amounts in the Series 2018 Sub-Account (including without limitation the initial deposit of proceeds of the Series 2018 Bond and any investment earnings) for any other purpose or any other projects. For the avoidance of doubt, the Division is responsible to provide any additional funding necessary to complete the Series 2018 Off-Turnpike WVDOH Projects over and above the certain proceeds of the Series 2018 Bonds, described in Section 2 above, designated to be immediately transferred by the Trustee to the State Treasurer for deposit into the State Road Construction Account, and, for the avoidance of doubt, the Authority shall not be responsible to find or provide such additional funds to the Division as may be necessary to complete the Series 2018 Off-Turnpike WVDOH Projects.

4. The Division expects to enter into, within one year of the date hereof, binding commitments for each of the Parkways Projects which will be financed with amounts of Bond proceeds in the Series 2018 Sub-Account within the State Road Construction Account, and the Division further expects that work on the projects will commence and proceed with due diligence to completion. It is reasonably expected by the Division that at least 85% of the proceeds in the Series 2018 Sub-Account within the State Road Construction Account will be disbursed by the Division within five years of the date hereof to pay the costs of governmentally owned projects that are not to be used in private trades or businesses and that do not represent loans to nongovernmental persons. The Division shall deliver to the Authority an executed engineering certificate, in form and substance satisfactory to Bond Counsel (as defined in the Indenture), certifying that that at least five years is necessary to complete construction of the applicable Series 2018 Off-Road WVDOH Projects, in connection with the issuance and sale of

the Series 2018 Bonds and, if so requested by Bond Counsel, in connection with any substitution or addition of Series 2018 Off-Turnpike WVDOH Projects.

5. Pending disbursement for the purposes of Paragraphs 3 and 4 above, proceeds of the Series 2018 Bonds shall be invested in such manner as shall not result in a violation of the Federal Tax Requirements and will only be invested in Permitted Investments, as defined by the Master Trust Indenture. The Division will cause the State Treasurer to segregate such investments (and any other or substitute investments as herein permitted) from all other investments of the Division and the State and will preserve and protect such investments (or other or substitute investments) from any and all claims. Such investments will not be sold, assigned or otherwise disposed of except as herein provided.

6. The Division and/or Treasurer will keep, or cause to be kept, detailed records documenting (a) all Receipts into the Series 2018 Sub-Account, (b) all investments of funds in said Sub-Account and any investment earnings, (c) all disbursements and uses of such Receipts and earnings from investments, and (d) that all proceeds deposited into said State Road Construction Account in the Series 2018 Sub-Account were dispersed only for permissible and eligible costs and expenses related to Series 2018 Off-Turnpike WVDOH Projects; and the Division and/or Treasurer shall provide or make available the same such upon request to the Authority and Bond Counsel (and to the Authority's auditors and its arbitrage rebate consultant) to allow compliance by the Authority (and the Division, as applicable) with the Federal Tax Requirements, the Act, or the terms and conditions of the Indenture and this MOU.

7. The Authority will prepare and file with the Internal Revenue Service such reports as are necessary to comply with the Federal Tax Requirements and shall make Rebate Payments as required by Section 148 of the Federal Tax Requirements from amounts available therefor and permitted pursuant to the Tri-Partite Agreement. In the event such amounts are not available for such purpose, the Division, to the extent that amounts derived from the proceeds of the Series 2018 Bonds continue to be held in the Series 2018 Sub-Account of the State Road Construction Account, will direct the application of such amounts, and investment earnings, if any, and shall make available other amounts, to advance funds to the Authority in order to allow the Authority to make such Rebate Payments on a timely basis, and the Treasurer shall make such transfers to the Authority for such purpose.

8. The Division shall take all necessary steps to avoid delay in the expenditure of the proceeds of the Series 2018 Bonds deposited in the State Road Construction Account as provided in Section 2 hereof. Subject to the foregoing, the Division agrees to liquidate investments in the State Road Construction Account to the extent necessary in order to permit the Authority to comply with the Federal Tax Requirements.

9. The parties hereto acknowledge that this MOU is entered into in part to induce the purchase of the Series 2018 Bonds by investors and agree to the enforcement of the provisions hereof by or on behalf of the owners of the Series 2018 Bonds.

10. This MOU may be amended, modified, restated or supplemented by the parties from time to time, including for the purpose of complying with Section 11 of the Act as to proceeds of any Additional Bonds under the Indenture that may be issued to fund, in whole or

in part, future Off-Turnpike WVDOH Projects; provided, however, that this MOU may be amended, modified or supplemented only by an agreement in writing signed by each party hereto.

[*Signature page follows this page.*]

IN WITNESS WHEREOF, the parties hereto have caused this Memorandum of Understanding to be executed by their duly authorized officers as of the date above first written.

STATE OF WEST VIRGINIA, DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, acting by and through its Secretary of Transportation

By: ______________________________

Name: ______________________________

Title: ______________________________

WEST VIRGINIA STATE TREASURER

By: ______________________________

Name: ______________________________

Title: ______________________________

WEST VIRGINIA PARKWAYS AUTHORITY

By: ______________________________

Name: ______________________________

Title: ______________________________

UNITED BANK

By: ______________________________

Name: ______________________________

Title: ______________________________

Exhibit A

Eligible Parkways Projects

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APPENDIX I

AMENDED AND RESTATED TRIPARTITE AGREEMENT

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AMENDED AND RESTATED AGREEMENT

BETWEEN

THE WEST VIRGINIA DIVISION OF HIGHWAYS,

THE WEST VIRGINIA PARKWAYS AUTHORITY

AND

THE FEDERAL HIGHWAY ADMINISTRATION,

DEPARTMENT OF TRANSPORTATION

THIS AGREEMENT, entered into this 1st day of ~~May~~ June, 2018, by and between the West Virginia Division of Highways, a Corporation, and successor to the West Virginia Department of Highways, under the jurisdiction of the West Virginia Department of Transportation, hereinafter referred to as the "DEPARTMENT," the West Virginia Parkways Authority (successor in interest by statute to the West Virginia Turnpike Commission and the West Virginia Parkways Economic Development and Tourism Authority), hereinafter referred to as the "PARKWAYS AUTHORITY," and the Federal Highway Administration, hereinafter referred to as "FHWA."

WHEREAS, a portion of Interstate 77 extending from its interchange with U.S. 460 at Princeton to Charleston in the State of West Virginia (the "West Virginia Turnpike") was a two-lane toll road as of June 30, 1968; and

WHEREAS, financing of said toll road and facilities was accomplished through issuance of revenue bonds; and

WHEREAS, the FHWA had determined that it was in the public interest and in furtherance of the national transportation goals and objectives to bring the PARKWAYS AUTHORITY'S two-lane toll road up to the geometric and construction standards for the National System of Interstate and Defense Highways in order to provide for the safe use of such highway as part of the Interstate System; and

WHEREAS, the DEPARTMENT has requested participation in the reconstruction and improvement of said toll road pursuant to Title 23, United States Code, Subsection 129(e), as enacted in Section 133 of the Federal-Aid Highway Act of 1970, 84 Stat. 1732-33; and

WHEREAS, Public Law 100-17, Section 120(c) authorized the Secretary of Transportation upon the request of the appropriate state highway department of the West Virginia Turnpike to void preexisting Section 129(e) agreements; and

WHEREAS, Section 129 of Division L, Title I of Public Law 115-141, the Consolidated Appropriations Act, 2018, amended Section 1012(e) of Public Law 102-240 by adding subsection (2); and

WHEREAS, Section 1012(e)(2), as amended, authorizes the Secretary of Transportation and, via delegation under 49 CFR1.85(c)(19) and 1.85(c)(22), the Administrator of FHWA to modify the Original Agreement (as defined below) entered into under Section 120(c) of Public Law 100-17 upon the request of the DEPARTMENT; and

WHEREAS, the DEPARTMENT has requested, pursuant to Section 1012(e)(2) of Public Law 102-240, that the Section 129(e) agreement between the DEPARTMENT, PARKWAYS AUTHORITY, and FHWA dated December 13, 1988 (the "Original Agreement"), be modified by the Secretary or her duly authorized representative.

NOW THEREFORE, the parties hereto agree as follows:

1. As requested by the DEPARTMENT, pursuant to Section 1012(e)(2) of Public Law 102-240, the Original Agreement is modified and restated, and upon the execution of this agreement by all three parties hereto, this agreement shall be the document under which the parties' rights, duties, and responsibilities will be governed after its execution.

2. The said toll road on Interstate 77, extending from Princeton to Charleston in the State of West Virginia, (again, the "West Virginia Turnpike") was reconstructed and improved on the same basis and in the same manner as in the construction and maintenance of free Interstate System highways under Chapter I of Title 23 of the United States Code.

3. The DEPARTMENT and PARKWAYS AUTHORITY entered into an agreement for the construction and improvement of said toll road in 1971 in order to enable the DEPARTMENT and PARKWAYS AUTHORITY to comply with the

requirements of this agreement and in accordance with Chapter 17, Article 16A, Section 5, Subsections (12) and (13), of the Official Code of West Virginia, 1931, as it then existed in 1971, to provide for the safe use of the toll road as part of the Interstate System.

4. The PARKWAYS AUTHORITY and the DEPARTMENT agree that the toll revenues from the operation of the West Virginia Turnpike will be used on the West Virginia Turnpike for amounts necessary for operation and maintenance; debt service; reasonable return on investment of any private person or entity that may be authorized by the State to operate and maintain the facility; and any cost necessary for improvement, including reconstruction, resurfacing, restoration, and rehabilitation.

5. The parties agree that the use of excess toll revenues (i.e., the toll revenues in excess of the herein stated costs in item number 4, above) are authorized to be used for any other purpose for which Federal funds may be obligated under Title 23 of the United States Code, provided that the PARKWAYS AUTHORITY and the DEPARTMENT certify annually that the West Virginia Turnpike is being adequately maintained and is in compliance with the audit requirements in section 129(a)(3)(B) of Title 23 of the United States Code.

6. The PARKWAYS AUTHORITY and the DEPARTMENT agree to comply with the annual audit requirements in section 129(a)(3)(B) of Title 23 of the United States Code, which require the PARKWAYS AUTHORITY to conduct or have an independent auditor conduct an annual audit of the West Virginia Turnpike records to verify adequate maintenance and compliance with section 129 (a)(1)(3)(A) of Title 23 of the United States Code. Additionally, the PARKWAYS AUTHORITY and the DEPARTMENT agree, upon reasonable notice, to make all records pertaining to the West Virginia Turnpike available for audit by the Secretary of Transportation or an authorized representative of the FHWA.

7. The PARKWAYS AUTHORITY agrees that any bonds issued or any cost incurred under this agreement will not cause tolls to be increased to an unreasonable amount.

IN WITNESS WHEREOF, the West Virginia Division of Highways has caused its corporate name to be signed hereto by Thomas J. Smith, P.E., Secretary of the West Virginia Department of Transportation and West Virginia Commissioner of Highways, and the West Virginia Parkways Authority has caused this agreement to be signed by The Honorable James C. Justice II, Governor of the State of West Virginia and Chairman of the West Virginia Parkways Authority, and its official seal affixed hereto by its Secretary, both thereunto duly authorized; and Federal Highway Administration, U.S. Department of Transportation, has caused this agreement to be executed by Brandye L. Hendrickson, its Acting Administrator as of the day and year first written above.

ATTEST:

Carla P. Rotsch

Title – Business Manager

WEST VIRGINIA DIVISION OF HIGHWAYS, A CORPORATION

Thomas J. Smith

Thomas J. Smith, P.E.
Commissioner of Highways

ATTEST:

Title – Secretary

WEST VIRGINIA PARKWAYS AUTHORITY

James C. Justice II
Chairman

FEDERAL HIGHWAY ADMINISTRATION

Brandye L. Hendrickson

Brandye L. Hendrickson
Acting Administrator

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WEST VIRGINIA PARKWAYS AUTHORITY • Senior Lien Turnpike Toll Revenue Bonds, Series 2018

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