

DISCLAIMER FOR VOLUNTARY DISCLOSURE REGARDING LOAN

On August 4, 2016, the Pennsylvania Turnpike Commission (the "**Issuer**") entered into a Loan Agreement with DVRC Pennsylvania Turnpike II Limited Partnership (the "**Loan Agreement**") pursuant to which the Issuer anticipates incurring up to \$800 million of debt in several tranches over several years (collectively, the "**Transaction**"). A copy of the Loan Agreement is attached hereto.

The Issuer is filing this information as a voluntary filing on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access ("**EMMA**") system. The Issuer is not required pursuant to any continuing disclosure undertaking to file this information and makes no commitment to update this information.

This information is only accurate as of its date. The Issuer makes no commitment to provide any notice (advance or otherwise) of any amendment, modification, redemption, cancellation, or other event or circumstance with respect to the Transaction.

The provision of this information to EMMA is not intended as an offer to sell any security and the Issuer does not intend that the Transaction involve the offering to the public of any security of the Issuer. No representation is made as to whether this information is material or important with respect to any particular outstanding debt issue of the Issuer or whether other events have occurred with respect to the Issuer or its outstanding debt that might be material or important to owners of the Issuer's outstanding debt.

Forward-looking statements, if any, included in the Transaction documents, including, but not limited to, the Loan Agreement, are inherently subject to a variety of risks and uncertainties that could cause actual results to differ materially from those that have been projected. Such risks and uncertainties which could affect forward-looking statements include, among others, changes in economic conditions and various other events, conditions and circumstances, many of which are beyond the control of the Issuer. Any forward-looking statements contained in a Transaction document speak only as of the date of such document. The Issuer disclaims any obligation or undertaking to release publicly any updates or revision to any forward-looking statement to reflect any changes in the Issuer's expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

Date: September 16, 2016

LOAN AGREEMENT

dated as of August 4, 2016 between

PENNSYLVANIA TURNPIKE COMMISSION,

as Borrower

and

DVRC PENNSYLVANIA TURNPIKE II LIMITED PARTNERSHIP

as Lender

\$800,000,000 LOAN FACILITY

TABLE OF CONTENTS

	Page
SECTION 1. DEFINITIONS.....	2
1.1 Defined Terms	2
1.2 Terms Generally.....	9
1.3 Agreement Effectiveness	10
SECTION 2. LOAN AND TERMS OF PAYMENT	10
2.1 Commitment; Loan	10
2.2 Period Conditions.....	12
2.3 Interest.....	13
2.4 Payments	13
2.5 Default Interest.....	14
2.6 Statement of Obligations.....	14
2.7 Repayment for Failed Visa Applications.....	14
2.8 Term of Agreement.....	15
SECTION 3. COMMISSION’S REPRESENTATIONS AND WARRANTIES	15
3.1 Place of Business	15
3.2 Organization; Powers.....	15
3.3 Authorization; Enforceability	15
3.4 Governmental Approvals; No Conflicts	16
3.5 Taxes	16
3.6 Litigation.....	16
3.7 Financial Condition; No Material Adverse Change.....	16
3.8 Compliance with Laws and Agreements	16
3.9 Investment Company	16
3.10 Plans; Construction of the Project.....	17
3.11 Permits and Approvals.....	17
3.12 Disclosure	17
3.13 Project Completion Schedule.....	17
3.14 No Acceleration of Indebtedness	17
3.15 Security	17
3.16 Valid Lien; Indenture a Contract	17
SECTION 4. COMMISSION’S AFFIRMATIVE COVENANTS	18
4.1 Existence; Conduct of Business.....	18
4.2 Inspection Rights	18
4.3 Financial Statements and Other Information	18
4.4 Lender Costs	18
4.5 Compliance with Laws	18
4.6 Notices of Material Events.....	19

4.7	Taxes	19
4.8	Insurance	19
4.9	Job Creation Requirements; Shortfall Qualifying Amount	19
4.10	Project Completion	20
4.11	Permits and Approvals.....	20
SECTION 5. EVENTS OF DEFAULT		20
5.1	Events of Default	20
SECTION 6. LENDER’S RIGHTS AND REMEDIES		20
6.1	Termination; Enforcement.....	20
6.2	Cumulative Rights and Remedies; Lender Waivers	20
SECTION 7. CONDITIONS		21
7.1	Conditions to Obligations of Lender.....	21
7.2	Each Advance	22
SECTION 8. GENERAL PROVISIONS		22
8.1	Future Advances	22
8.2	Notices	22
8.3	Waivers; Amendments.....	23
8.4	Survival	24
8.5	Limit on Interest.....	24
8.6	Records	24
8.7	Headings	24
8.8	Lender Representations.....	24
8.9	Successors and Assigns.....	24
8.10	Interpretation.....	25
8.11	Governing Law	25
8.12	Dispute Resolution.....	25
8.13	Severability; Integration.....	25
8.14	Counterparts.....	25
8.15	Relationship	25

Exhibit A – Form of Promissory Note

Exhibit A-1 – Indenture

Exhibit B – Form of Borrowing Request

Exhibit C – Economic Impact Study

Exhibit D – Form of General Certificate

Exhibit D-1 – Form of General Certificate

Exhibit E – Form of Officer’s Certificate

Exhibit F – Project Completion Schedule

Exhibit G – Project Schedule

LOAN AGREEMENT

THIS LOAN AGREEMENT is entered into on August 4, 2016, by and between **DVRC PENNSYLVANIA TURNPIKE II LIMITED PARTNERSHIP**, a Pennsylvania limited partnership (hereinafter called "Lender"), with a business office at 1845 Walnut Street, Suite 2500, Philadelphia, Pennsylvania 19103, and **PENNSYLVANIA TURNPIKE COMMISSION**, an instrumentality of the Commonwealth of Pennsylvania (hereinafter called "Commission"), with its principal executive office located at 700 South Eisenhower Boulevard, Middletown, Pennsylvania 17057.

WHEREAS:

A. In 1990, the United States Congress enacted legislation to create an Immigrant Investor Program (the "Program") which is currently administered by the U.S. Citizenship and Immigration Services ("USCIS").

B. The Program permits foreign citizens to receive permanent United States residency in exchange for making a minimum investment of Five Hundred Thousand Dollars (\$500,000.00) in a new commercial enterprise that will create at least ten (10) direct and/or indirect full-time jobs per minimum investment unit in an area designated by the USCIS as a "regional center."

C. Commission is an instrumentality of the Commonwealth of Pennsylvania created by the Enabling Acts (as defined herein) with the power to construct, operate and maintain the System (as defined herein).

D. Commission conducts certain of its operations within the geographic area of the counties listed in Schedule I attached hereto ("Eligible Counties"), which it is anticipated will be designated part of the "The Delaware Valley Regional Center" by the USCIS.

E. Lender has been created to permit foreign investors (the "Investors") to invest in, among other things, a transportation project in the Eligible Counties and obtain lawful U.S. residence under the Program.

F. Lender wishes to make a loan to Commission in tranches in an aggregate amount not to exceed Eight Hundred Million Dollars (\$800,000,000.00).

G. Commission shall use the proceeds of the loan to facilitate, fund and/or reimburse for amounts spent in connection with the Project (as defined below).

WITNESSETH:

In consideration of the mutual covenants contained herein and intending to be legally bound hereby, the parties hereto agree as follows:

SECTION 1. DEFINITIONS

1.1 Defined Terms. As used in this Agreement, the following terms have the meanings specified below:

“Additional Bonds” shall have the meaning set forth in the Indenture.

“Affiliate” shall mean, with respect to a specified Person, another Person that directly, or indirectly through one or more intermediaries, Controls or is Controlled by or is under common Control with the Person specified; provided, that two or more Persons shall not be deemed Affiliates because an individual is a director and/or officer of each such Person.

“Aggregate Commitment Amount” shall mean the Tranche 1 Commitment Amount, the Tranche 2 Commitment Amount, the Tranche 3 Commitment Amount, the Tranche 4 Commitment Amount, the Tranche 5 Commitment Amount, the Tranche 6 Commitment Amount, the Tranche 7 Commitment Amount, the Tranche 8 Commitment Amount, the Tranche 9 Commitment Amount, the Tranche 10 Commitment Amount, the Tranche 11 Commitment Amount, the Tranche 12 Commitment Amount, the Tranche 13 Commitment Amount, the Tranche 14 Commitment Amount, the Tranche 15 Commitment Amount and the Tranche 16 Commitment Amount.

“Agreement” shall mean this Loan Agreement, and any riders, extensions, supplements, amendments or modifications to this Loan Agreement.

“Borrowing Request” shall have the meaning set forth in Section 2.1.

“Business Day” shall mean any day that is not a Saturday, Sunday or other day on which commercial banks in Philadelphia, Pennsylvania are authorized or required by law to remain closed.

“Close-Out Date” shall mean, with respect to any Tranche, the first date that all or any portion of such Tranche requested by Commission hereunder is advanced from Lender to Commission.

“Code” shall have the meaning set forth in the Indenture.

“Commission” shall have the meaning set forth in the Preamble.

“Commission’s Books” shall mean and include Commission’s and its applicable Affiliates’ books and records solely as related to this Agreement, the Loans, the Obligations, Qualifying Expenditures and New Jobs.

“Commitment” shall mean the Tranche 1 Commitment, the Tranche 2 Commitment, the Tranche 3 Commitment, the Tranche 4 Commitment, the Tranche 5 Commitment, the Tranche 6 Commitment, the Tranche 7 Commitment, the Tranche 8 Commitment, the Tranche 9 Commitment, the Tranche 10 Commitment, the Tranche 11 Commitment, the Tranche 12 Commitment, the Tranche 13 Commitment, the Tranche 14 Commitment, the Tranche 15 Commitment or the Tranche 16 Commitment.

“Commitment Amount” shall mean the Tranche 1 Commitment Amount, the Tranche 2 Commitment Amount, the Tranche 3 Commitment Amount, the Tranche 4 Commitment Amount, the Tranche 5 Commitment Amount, the Tranche 6 Commitment Amount, the Tranche 7 Commitment Amount, the Tranche 8 Commitment Amount, the Tranche 9 Commitment Amount, the Tranche 10 Commitment Amount, the Tranche 11 Commitment Amount, the Tranche 12 Commitment Amount, the Tranche 13 Commitment Amount, the Tranche 14 Commitment Amount, the Tranche 15 Commitment Amount or the Tranche 16 Commitment Amount.

“Commonwealth” shall mean the Commonwealth of Pennsylvania.

“Control” means the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of a Person, whether through the ability to exercise voting power, by contract or otherwise. “Controlling” and “Controlled” have meanings correlative thereto.

“DVRC” shall mean Delaware Valley Regional Center, LLC, a Delaware limited liability company.

“Economic Impact Study” shall have the meaning set forth in Section 4.9(a).

“Effective Date” shall mean the date on which all the conditions specified in Section 7.1(a) are satisfied or waived.

“Eligible Counties” shall have the meaning set forth in Paragraph D of the Recitals.

“Enabling Acts” shall have the meaning set forth in the Indenture.

“Environmental Law” shall mean all applicable and binding laws, rules, regulations, codes, ordinances, orders, decrees, judgments, injunctions, or agreements issued, promulgated or entered into by any Governmental Authority, relating in any way to the environment, preservation or reclamation of natural resources, the management, release or threatened release of any Hazardous Material or to health and safety matters.

“Event of Default” shall have the meaning set forth in Section 5.

“Fitch” shall mean Fitch Ratings and its successors and assigns

“Governmental Authority” shall mean the government of the United States, any other nation or any political subdivision thereof, whether state or local, and any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative powers or functions of or pertaining to government.

“Hazardous Materials” shall mean all explosive or radioactive substances or wastes and all hazardous or toxic substances, wastes or other pollutants, including petroleum or petroleum distillates, asbestos or asbestos containing materials, polychlorinated biphenyls, radon

gas, infectious or medical wastes and all other substances or wastes of any nature regulated pursuant to any Environmental Law.

“Indenture” shall mean the Amended and Restated Trust Indenture dated as of March 1, 2001, between Commission and Trustee, attached hereto as Exhibit A-1, as amended and supplemented to date by any amendment and supplement, including any Supplemental Indentures, and as may be further amended or supplemented.

“Interest Rate” shall mean [REDACTED] per annum.

“Investors” shall have the meaning set forth in Paragraph E of the Recitals.

“Job Creation Requirement” shall have the meaning set forth in Section 4.9(a).

“Lender” shall have the meaning set forth in the Preamble.

“Lender Costs” shall mean all reasonable out-of-pocket expenses incurred by Lender in connection with (a) the preparation, execution and delivery of this Agreement and the other Loan Documents up to a maximum of \$50,000, (b) any subsequent amendments, modifications or waivers of the provisions of this Agreement and the other Loan Documents requested by Commission, (c) after the occurrence of an Event of Default, any investigations or inspections pursuant to Section 4.2(b) hereof and (d) after the occurrence of an Event of Default, enforcing or defending its rights under or in connection with this Agreement and the other Loan Documents.

“Lien” shall mean, with respect to any asset, (a) any mortgage, deed of trust, lien (other than mechanics’ liens), pledge, hypothecation, encumbrance, charge or security interest in (including sales of accounts), on or of such asset, (b) the interest of a vendor or a lessor under any conditional sale agreement, capital lease or title retention agreement (or any financing lease having substantially the same economic effect as any of the foregoing, but excluding any operating leases) relating to such asset and (c) in the case of securities, any purchase option, call or similar right of a third party with respect to such securities.

“Loans” shall mean collectively, the aggregate outstanding principal amount of the Tranche 1 Loan, the Tranche 2 Loan, the Tranche 3 Loan, the Tranche 4 Loan, the Tranche 5 Loan, the Tranche 6 Loan, the Tranche 7 Loan, the Tranche 8 Loan, the Tranche 9 Loan, the Tranche 10 Loan, the Tranche 11 Loan, the Tranche 12 Loan, the Tranche 13 Loan, the Tranche 14 Loan, the Tranche 15 Loan and the Tranche 16 Loan and “Loan” shall mean the outstanding principal amount of each Tranche.

“Loan Documents” shall mean this Agreement, the Supplemental Indentures, the Notes and all other agreements, documents or instruments now or hereafter executed and delivered under this Agreement, the Supplemental Indentures, the Notes or in connection with the Loan, including, without limitation, the Notes, and all amendments, modifications, extensions and restatements of such agreements, documents or instruments.

“Material Adverse Effect” shall mean a material adverse effect on (a) the operations, assets or financial condition of Commission, (b) the validity or enforceability against

Commission of any Loan Document, (c) the ability of Commission to perform its obligations under any Loan Document or (d) the ability of Commission to complete the Project in all material respects in accordance with the Project Completion Schedule.

“Maturity Date” shall mean with respect to each Tranche, the date occurring five (5) years after the Close-Out Date for such Tranche.

“Moody’s” shall mean Moody’s Investors Service, Inc.

“New Jobs” shall have the meaning set forth in Section 4.9(a).

“Notes” shall mean collectively, the Promissory Notes dated each Close-Out Date with respect to each Tranche, made by Commission in favor of Lender in substantially the form attached hereto as Exhibit A, and “Note” shall mean each of such Promissory Notes.

“Obligations” shall mean and include all loans, advances, debts, liabilities, obligations (including interest accruing during the pendency of any bankruptcy, insolvency, receivership or other similar proceeding, regardless of whether allowed or allowable in such proceeding), guaranties, covenants and duties owing by Commission to Lender which arise under, out of, or in connection with, this Agreement or any other Loan Document.

“Origination Fee” means (i) [REDACTED] in the case of the Tranche 1 Loan, (ii) [REDACTED] in the case of the Tranche 2 Loan, (iii) [REDACTED] in the case of the Tranche 3 Loan, (iv) [REDACTED] in the case of the Tranche 4 Loan, (v) [REDACTED] in the case of the Tranche 5 Loan, (vi) [REDACTED] in the case of the Tranche 6 Loan, (vii) [REDACTED] in the case of the Tranche 7 Loan, (viii) [REDACTED] in the case of the Tranche 8 Loan, (ix) [REDACTED] in the case of the Tranche 9 Loan, (x) [REDACTED] in the case of the Tranche 10 Loan, (xi) [REDACTED] in the case of the Tranche 11 Loan, (xii) [REDACTED] in the case of the Tranche 12 Loan, (xiii) [REDACTED] in the case of the Tranche 13 Loan, (xiv) [REDACTED] in the case of the Tranche 14 Loan, (xv) [REDACTED] in the case of the Tranche 15 Loan and (xvi) [REDACTED] in the case of the Tranche 16 Loan.

“Parity Obligations” shall have the meaning set forth in the Indenture.

“Payment Date” shall have the meaning set forth in Section 2.3.

“Period Conditions” shall mean the conditions set forth in Section 2.2(a) and 2.2(b).

“Person” shall mean any natural person, corporation, limited liability company, trust, joint venture, association, company, partnership, Governmental Authority or other entity.

“Potential Event of Default” shall mean any condition or event which, with notice, lapse of time or both, would, unless cured or waived, become an Event of Default.

“Program” shall have the meaning set forth in the Paragraph A of the Recitals.

“Project” shall mean collectively, the projects identified in Commission’s 2017-26 ten year capital program, as set forth on Exhibit G attached hereto.

“Project Completion Schedule” shall have the meaning set forth in Section 4.10.

“Qualifying Expenditures” shall mean any expenditures for the Project from and after the Close-Out Date for each Tranche until the date that is two (2) years after the applicable Close-Out Date.

“Repayment Amount” shall have the meaning set forth in Section 2.7.

“Repayment Period” shall have the meaning set forth in Section 2.7.

“Resolution” shall mean the Resolution of Commission dated May 17, 2016, which authorized, among other things, the issuance of the Loans, the Notes and Commission entering into this Agreement and the other Loan Documents.

“Responsible Officer” shall mean any of the Chairman, Chief Executive Officer and Chief Financial Officer (or any equivalent of the foregoing officers) of Commission.

“Revenues” shall have the meaning set forth in the Indenture.

“S&P” shall mean Standard & Poor’s Ratings Services, a Standard & Poor’s Financial Services LLC business.

“Shortfall Qualifying Amount” shall have the meaning set forth in Section 4.9(b).

“Supplemental Indentures” shall mean collectively, the Supplemental Trust Indentures dated on or prior to each Close-Out Date hereunder, between Commission and the Trustee, as amended, restated, supplemented or otherwise modified from time to time.

“System” shall have the meaning set forth in the Indenture.

“Tranche” shall mean the Tranche 1 Loan, the Tranche 2 Loan, the Tranche 3 Loan, the Tranche 4 Loan, the Tranche 5 Loan, the Tranche 6 Loan, the Tranche 7 Loan, the Tranche 8 Loan, the Tranche 9 Loan, the Tranche 10 Loan, the Tranche 11 Loan, the Tranche 12 Loan, the Tranche 13 Loan, the Tranche 14 Loan, the Tranche 15 Loan or the Tranche 16 Loan.

“Tranche 1 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(a).

“Tranche 1 Commitment Amount” shall mean ([REDACTED]).

“Tranche 1 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(a).

“Tranche 2 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(b).

“Tranche 2 Commitment Amount” shall mean ([REDACTED]).

“Tranche 2 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(b).

“Tranche 3 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(c).

“Tranche 3 Commitment Amount” shall mean [REDACTED]

“Tranche 3 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(c).

“Tranche 4 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(d).

“Tranche 4 Commitment Amount” shall mean [REDACTED]

“Tranche 4 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(d).

“Tranche 5 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(e).

“Tranche 5 Commitment Amount” shall mean [REDACTED]

“Tranche 5 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(e).

“Tranche 6 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(f).

“Tranche 6 Commitment Amount” shall mean [REDACTED]

“Tranche 6 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(f).

“Tranche 7 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(g).

“Tranche 7 Commitment Amount” shall mean [REDACTED]

“Tranche 7 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(g).

“Tranche 8 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(h).

“Tranche 8 Commitment Amount” shall mean [REDACTED].

“Tranche 8 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(h).

“Tranche 9 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(i).

“Tranche 9 Commitment Amount” shall mean [REDACTED].

“Tranche 9 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(i).

“Tranche 10 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(j).

“Tranche 10 Commitment Amount” shall mean [REDACTED].

“Tranche 10 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(j).

“Tranche 11 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(k).

“Tranche 11 Commitment Amount” shall mean [REDACTED].

“Tranche 11 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(k).

“Tranche 12 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(l).

“Tranche 12 Commitment Amount” shall mean [REDACTED].

“Tranche 12 Loan” shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(l).

“Tranche 13 Commitment” shall mean the commitment of Lender to make advances to Commission under Section 2.1(m).

"Tranche 13 Commitment Amount" shall mean [REDACTED].

"Tranche 13 Loan" shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(m).

"Tranche 14 Commitment" shall mean the commitment of Lender to make advances to Commission under Section 2.1(n).

"Tranche 14 Commitment Amount" shall mean [REDACTED].

"Tranche 14 Loan" shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(n).

"Tranche 15 Commitment" shall mean the commitment of Lender to make advances to Commission under Section 2.1(o).

"Tranche 15 Commitment Amount" shall mean [REDACTED].

"Tranche 15 Loan" shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(o).

"Tranche 16 Commitment" shall mean the commitment of Lender to make advances to Commission under Section 2.1(p).

"Tranche 16 Commitment Amount" shall mean [REDACTED].

"Tranche 16 Loan" shall mean the aggregate outstanding principal amount of the advances made to Commission pursuant to Section 2.1(p).

"Trust Estate" shall have the meaning set forth in the Indenture.

"Trustee" shall mean U.S. Bank National Association or successor.

"United States" or "U.S." shall mean the United States of America.

"USCIS" shall have the meaning set forth in Paragraph A of the Recitals.

"Visa" shall have the meaning set forth in Section 2.7.

1.2 Terms Generally. The definitions of terms herein shall apply equally to the singular and plural forms of the terms defined. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms. The words, "include," "includes" and "including" shall be deemed to be followed by the phrase "without limitation." The word "will" shall be construed to have the same meaning and effect as the word "shall." Unless the context requires otherwise (a) any definition of or reference to any

agreement, instrument or other document herein shall be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein), (b) any reference herein to any Person shall be construed to include such Person's successors and assigns, (c) the words "herein," "hereof" and "hereunder," and words of similar import, shall be construed to refer to this Agreement in its entirety and not to any particular provision hereof, (d) all references herein to Sections shall be construed to refer to Sections of this Agreement and (e) the words "asset" and "property" shall, except where the context dictates otherwise, be construed to have the same meaning and effect and to refer to any and all tangible and intangible assets and properties, including cash, securities, accounts and contract rights.

1.3 Agreement Effectiveness. This Agreement shall only be effective on the Effective Date and neither party shall have any obligations hereunder prior to the Effective Date.

SECTION 2. LOAN AND TERMS OF PAYMENT

2.1 Commitment; Loan. In accordance with the terms of this Section 2 and subject to the conditions set forth in Section 7, Lender hereby agrees as follows:

(a) Tranche 1 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 1 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(b) Tranche 2 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 2 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(c) Tranche 3 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 3 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(d) Tranche 4 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 4 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(e) Tranche 5 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 5 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(f) Tranche 6 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 6 Commitment

Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(g) Tranche 7 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 7 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(h) Tranche 8 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 8 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(i) Tranche 9 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 9 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(j) Tranche 10 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 10 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(k) Tranche 11 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 11 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(l) Tranche 12 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 12 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(m) Tranche 13 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 13 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(n) Tranche 14 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 14 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(o) Tranche 15 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 15 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(p) Tranche 16 Commitment. Lender hereby agrees to make one or more advances to Commission in an aggregate amount not to exceed the Tranche 16 Commitment Amount for use in the Project (including to reimburse Commission for Qualifying Expenditures previously spent).

(q) Borrowing Requests. Each Tranche shall be made to Commission in one or more advances promptly upon request by Commission (but no more frequently than monthly), and in any event within five (5) Business Days after receipt by Lender of a borrowing request substantially in the form attached hereto as Exhibit B ("Borrowing Request") together with reasonable evidence of Qualifying Expenditures made, or a plan for Qualifying Expenditures to be made or reimbursed with the proceeds of such Tranche, in an amount sufficient to support each such advance. Commission shall use commercially reasonable efforts to fully request hereunder all available advances in an aggregate amount equal to such Commitment Amount for such Tranche by the date which is 120 days from the applicable Close-Out Date for such Tranche.

(r) Evidence of Debt. Commission shall execute and deliver to Lender for each Tranche a Note to evidence Commission's obligation to repay Lender for such Tranche, with interest as set forth herein. The Notes evidencing repayment of the Loans are incorporated herein by reference and made part hereof.

2.2 Period Conditions.

(a) Initial Funding Period Conditions. Lender represents and warrants that within twenty-four (24) months from the Effective Date (the "Initial Funding Period"), (1) DVRC shall have received designation as a Regional Center (the "Designation Condition"), and (2) shall have available in escrow funds to fully fund the Tranche 1 Loan (the "Tranche Condition") (both conditions (1) and (2) collectively referred to as "Initial Funding Period Conditions"). Once Lender has available in escrow the funds to fully fund the Tranche 1 Loan, and provided the Initial Funding Period has not terminated, Lender shall notify Commission in writing and Commission will comply with Section 7.1(b). If Lender does not meet both of the Initial Funding Period Conditions by the expiration of the Initial Funding Period, then Commission will not be obligated to accept the Tranche 1 Loan or reimburse Lender for any fees and this Agreement shall be deemed cancelled and of no further effect. Upon receipt by Lender of designation as a Regional Center, Lender shall provide a copy thereof to Commission.

(b) Extended Funding Period Conditions. Commission agrees that if the Initial Funding Period Conditions have been met, the Initial Funding Period will be extended by an additional eighteen months (18) months ("First Extended Funding Period") for Lender to have available in escrow or fully fund the Tranche 2 Loan. Commission agrees that if Lender has available in escrow or fully funds the Tranche 2 Loan by the First Extended Funding Period, the First Extended Funding Period will be extended by an additional eighteen months (18) from the date of the First Extended Funding Period (the "Second Extended Funding Period") for Lender to have available in escrow or fully fund the Tranche 3 Loan. Commission agrees that if Lender has available in escrow or fully funds the Tranche 3 Loan by the Second Extended Funding Period, the Second Extended Funding Period will be extended by an additional eighteen months (18) from the date of the Second Extended Funding Period (the "Third Extended Funding

Period”) for Lender to have available in escrow or fully fund the Tranche 4 Loan. Commission agrees that if Lender has available in escrow or fully funds the Tranche 4 Loan by the Third Extended Funding Period, the Third Extended Funding Period will be extended by an additional eighteen months (18) from the date of the Third Extended Funding Period (the “Fourth Extended Funding Period”) for Lender to have available in escrow or fully fund the aggregate of the Tranche 5 Loan through the Tranche 16 Loan. Lender and Commission agree that each Tranche beginning with Tranche 1 shall be fully funded before the next succeeding Tranche.

Once Lender has available in escrow the funds to fully fund the Tranche 2 Loan, the Tranche 3 Loan, the Tranche 4 Loan and the aggregate Tranche 5 Loan through Tranche 16 Loan, and provided the Extended Funding Period has not terminated, Lender shall notify Commission in writing and Commission will comply with Section 7.1(b) within one hundred eighty (180) days from the date of such notice. If Lender does not have available in escrow funds to fully fund or have fully funded Tranche 2 by the First Extended Funding Period, Tranche 3 by the Second Extended Funding Period, Tranche 4 by the Third Extended Funding Period or Tranche 5 through Tranche 16 by the Fourth Extended Funding Period, then Commission will not be obligated to accept any such Tranche, or reimburse Lender for any fees related to any such Tranche, and this Agreement shall be deemed cancelled and of no further effect with respect to any such Tranche.

2.3 Interest. Except as set forth in Section 2.5, the principal balance of each Tranche shall bear interest at the Interest Rate. With respect to each Tranche, interest is due and payable semi-annually in arrears to Lender on the first day of June and December of every year (each a “Payment Date”) until such Tranche Loan has been paid in full; provided, that if such day is not a Business Day, the Payment Date shall be the following Business Day. Interest shall be determined based on amounts advanced and outstanding from time to time during the previous semi-annual period. All interest hereunder shall be calculated on the basis of a 360-day year of twelve 30-day months.

2.4 Payments.

(a) Generally. Unless sooner prepaid following the occurrence and continuation of an Event of Default, Commission shall pay to Lender amounts due and owing in respect of each Tranche as follows on the following regularly scheduled payment dates: (i) on the Maturity Date of such Tranche, the principal balance of such Tranche and all interest and other amounts then outstanding with respect to such Tranche, (ii) on the date any Repayment Amount is due pursuant to Section 2.7 or Section 4.9, an amount equal to such Repayment Amount, (iii) on the date any Excess Amount is due pursuant to Section 2.7, an amount equal to such Excess Amount and (iv) on the date any Shortfall Qualifying Amount is due pursuant to Section 4.9, an amount equal to such Shortfall Qualifying Amount plus any accrued and unpaid interest on the Shortfall Qualifying Amount then outstanding, and payment of Lender Costs, if any, all as set forth in Section 4.9. Except as set forth in Section 2.7 and 4.9, prepayment of the principal amount of the Loans shall not be permitted.

(b) Commission’s Optional Payment. Commission, at its sole option, may, upon written notice to Lender at any point up to six (6) calendar months prior to the Maturity Date for a Tranche, repay the entire outstanding principal amount of such Tranche on

the applicable Maturity Date for such Tranche (each, a “Bond Issue Date”) by delivering Additional Bonds in authorized denominations of \$5,000 and integral multiples thereof to Lender with a coupon of [REDACTED] per annum, a maturity at least [REDACTED] years and no greater than [REDACTED] years from the Bond Issue Date and a no-call period of at least [REDACTED] years and no greater than [REDACTED] years from the Bond Issue Date. In order for Commission to select such option, on each Bond Issue Date, (i) Commission’s long term credit rating shall be at least investment grade by at least two of Moody’s, S&P and Fitch, (ii) Commission must meet all conditions under the Indenture for the issuance of Additional Bonds and such Additional Bonds shall constitute Parity Obligations under the Indenture, (iii) the interest on such Additional Bonds shall not be includable in gross income for purposes of federal and state income taxation, (iv) the Additional Bonds must have a CUSIP and be tradable and clearable through all domestic exchanges and clearing agencies as is customary for Commission’s tax-exempt bond issuances, (v) Commission shall issue an official statement for the Additional Bonds and such other documents required under securities laws as is customary for Commission’s tax-exempt bond issuances, and (vi) Commission shall deliver all certifications and opinions as is customary for Commission’s tax-exempt bond issuances. All costs of issuance in connection with the deliverance of Additional Bonds to Lender pursuant to this Section 2.4(b) shall be borne by Commission. The amount of the Additional Bonds to be issued for repayment of each Tranche shall, at the option of the Commission, be determined on the applicable Close-Out Date by either using a bond yield equal to [REDACTED] year yield, as provided by Thomson Reuters from the prior thirty (30) calendar days to and including the applicable Close-Out Date plus [REDACTED] (the “[REDACTED] Year Bond Spread”), or a bond yield equal to any single MMD AAA GO 30 year yield, as provided by Thomson Reuters from the prior thirty (30) calendar days to and including the applicable Close-Out Date plus [REDACTED] basis points ([REDACTED] (the “[REDACTED] Year Bond Spread”, together with the [REDACTED] Year Bond Spread, the “Bond Spread”) as such further calculation is further set forth on Schedule 2.4 attached hereto.

2.5 Default Interest. Without duplication, after the occurrence of an Event of Default, and so long as such Event of Default is continuing, upon notice given to Commission by Lender, the rate of interest applicable to the outstanding principal of the Loans hereunder shall be [REDACTED] per annum plus the rate otherwise applicable to the Loans as provided in Section 2.3.

2.6 Statement of Obligations. Lender may from time to time deliver to Commission a statement of the Obligations of Commission to Lender, including principal of each Tranche, interest and Lender Costs owing, and such statement shall be conclusively presumed to be correct and accurate and constitute an account stated between Commission and Lender, absent manifest error, unless, within sixty (60) days after receipt thereof by Commission, Commission shall deliver to Lender written objection thereto specifying the error or errors, if any, contained in such statement.

2.7 Repayment for Failed Visa Applications. Notwithstanding anything to the contrary contained herein, Commission acknowledges that Lender has advised it that it is issuing limited partnership units to Investors pursuant to the Program and that the proceeds from the subscriptions for such units are being utilized by Lender to make the Loans. If all or any portion of the Loans is advanced to Commission and one or more Investors whose subscription funded such advances are not issued a conditional permanent residence U.S. Visa (“Visa”) pursuant to

the Program ("Failed Visa"), Lender shall provide written notice and certification thereof to Commission and (i) if the entire Aggregate Commitment Amount available to be drawn by Commission at such time has been advanced hereunder, Commission shall, within six (6) months of Commission's receipt of such notice and certification (the "Repayment Period"), repay to Lender an amount equal to the product of Five Hundred Thousand Dollars (\$500,000.00) multiplied by the number of Investors indicated in the foregoing notice and certification which were not issued Visas (the "Repayment Amount") and (ii) if less than the entire Aggregate Commitment Amount available to be drawn by Commission at such time has been advanced to Commission, such available Aggregate Commitment Amount shall be permanently reduced by the Repayment Amount; provided that, the Repayment Amount shall be applied to reduce each Tranche Commitment Amount in inverse order beginning with Tranche 16 Commitment Amount;; provided further that, to the extent the Repayment Amount exceeds the Aggregate Commitment Amount drawn by Commission at such time, Commission shall, upon the expiration of the applicable Repayment Period, repay to Lender such excess amount (an "Excess Amount"). Lender agrees to use its best efforts to replace all Failed Visa Investors with replacement Investors who meet all conditions of the Program within the Repayment Period.

2.8 Term of Agreement. This Agreement shall remain in effect until all of the Obligations of Commission hereunder have been paid in full.

SECTION 3. COMMISSION'S REPRESENTATIONS AND WARRANTIES

In order to induce Lender to enter into this Agreement and to make the Loans to Commission as herein provided, Commission hereby makes the following representations and warranties contained in Section 3.1 through 3.14 as of the Effective Date, which representations and warranties, for the avoidance of doubt, (a) exclude any representations and warranties with respect to the Program, and (b) shall survive the execution and delivery of this Agreement and the occurrence of the Effective Date:

3.1 Place of Business. Commission's principal executive office is located at the address indicated in the Preamble.

3.2 Organization; Powers. Commission is an instrumentality of, and is duly established and existing under, the laws of the Commonwealth, with all requisite power and authority to deliver this Agreement and the other Loan Documents, to adopt the Resolution and to execute and deliver this Agreement and the other Loan Documents and to perform its obligations hereunder. Commission has all requisite power and authority to carry on its business as now conducted and, except where the failure to do so, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect. Commission has no Affiliates.

3.3 Authorization; Enforceability. The transactions contemplated by this Agreement are within Commission's powers and have been duly authorized by all necessary action of Commission. Each Loan Document has been duly executed and delivered by Commission. Each Loan Document constitutes a legal, valid and binding obligation of Commission, enforceable in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium or other laws affecting creditors' rights generally and

subject to general principles of equity, regardless of whether considered in a proceeding in equity or at law.

3.4 Governmental Approvals; No Conflicts. The transactions by Commission contemplated by this Agreement (a) do not with respect to Commission require any consent or approval of, registration or filing with, or any other action by, any Governmental Authority, except such as have been obtained or made and are in full force and effect, (b) do not violate (i) any applicable law or regulation applicable to Commission or (ii) the Enabling Acts or the Resolution or any organizational documents of Commission or any order of any Governmental Authority applicable to Commission, (c) do not violate or result in a default under any indenture, agreement or other instrument binding upon Commission or its assets. The property of Commission is not subject to any Lien, other than those permitted under the terms of the Indenture.

3.5 Taxes. To the extent required by applicable law, Commission has timely filed or caused to be filed all tax returns, filings and reports required to have been filed with the applicable Governmental Authorities, if any.

3.6 Litigation. There are no actions, suits, investigations or proceedings by or before any arbitrator or Governmental Authority pending against or, to the knowledge of Commission, threatened against or affecting, Commission (i) which could reasonably be expected to be adversely determined and that, if adversely determined, could reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect or (ii) that involve this Agreement or the borrowing transactions by Commission contemplated hereby.

3.7 Financial Condition; No Material Adverse Change. The audited balance sheet and statements of operations and cash flows (including the notes thereto) of Commission (i) as of and for the fiscal year ended May 31, 2015, reported on by Zelenkofske Axelrod, independent public accountants, and (ii) as of and for the fiscal quarter and the portion of the fiscal year ended February 28, 2016, certified by its chief financial officer, in each case copies of which have heretofore been furnished to Lender, present fairly, in all material respects, the financial position and results of operations and cash flows of Commission, as of such dates and for such periods, in accordance with generally accepted accounting principles. Since February 28, 2016, there has been no material adverse change in the operations, assets or financial condition of Commission.

3.8 Compliance with Laws and Agreements. Commission is in compliance with all laws, regulations and orders of each Governmental Authority applicable to it or its property (including any Environmental Law and, to the extent required by law, the Employee Retirement Income Security Act of 1974) and all indentures, agreements and other instruments binding upon it or its property, except where the failure to be so, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect.

3.9 Investment Company. Commission is not an “investment company” as defined in, or subject to regulation under, the Investment Company Act of 1940.

3.10 Plans; Construction of the Project. The plans for the Project have been approved, to the extent required by applicable laws or regulations or any restrictive covenant affecting title to the Project, by any Governmental Authority claiming jurisdiction under applicable laws or regulations or any restrictive covenant affecting title to the Project. Commission is not aware of any material violation of any law or regulation of any Governmental Authority with respect thereto.

3.11 Permits and Approvals. All planning and other approvals, authorizations and/or permits currently required under any Governmental Authority for any phase of the Project presently occurring have been obtained, are in full force and effect and Commission has not received any written notice of revocation, termination or default thereof. With respect to any permits not presently obtained and which are not required for a current phase of the Project, Commission has no reason to believe that it will not be able to obtain such permits in the ordinary course of business so as not to delay the progress of the Project.

3.12 Disclosure. There is no fact of which Commission is aware which has not been disclosed to Lender in writing pursuant to the terms of this Agreement prior to the Effective Date and which, singly or in the aggregate with all such other facts of which Commission is aware, could reasonably be expected to result in a Material Adverse Effect.

3.13 Project Completion Schedule. The Project Completion Schedule has been prepared in good faith using reasonable assumptions and Commission is not aware of any reason the Project would not be completed in all material respects in accordance with the Project Completion Schedule.

3.14 No Acceleration of Indebtedness. No agreement, instrument or other document governing or evidencing obligations of Commission evidenced by bonds, debentures, notes or loans permits by its terms the holders of such obligations to require the payment thereof prior to the stated maturity date therefor for any reason, including, without limitation, the occurrence of a default with respect to such obligations.

In addition to the above representations and warranties, on each Close-Out Date, Commission shall make the following additional representations and warranties:

3.15 Security. The Notes, when authenticated by the Trustee pursuant to Section 7.2(b) of this Agreement and the Indenture, shall constitute Additional Bonds and Parity Obligations under the Indenture.

3.16 Valid Lien; Indenture a Contract. Commission's irrevocable pledge of the Revenues to and for the payment of the Notes owed to Lender (i) is valid and binding as of the Close-Out Date and all Revenues and any other property that comprises the Trust Estate now or hereafter received by Commission are immediately subject to the lien thereof, (ii) creates a pledge of, lien on and security interest therein as provided in the Indenture, (iii) requires no further acts, instruments, approvals, filings, registration, recording or publication of the Indenture or notice to any Person, except as required by law, to validly establish the pledge provided for under the Indenture or to protect or maintain the lien created thereby on the Revenues to secure

the Notes owed the Lender and (iv) does not require any act of appropriation for the application thereof to the purposes for which pledged.

SECTION 4. COMMISSION'S AFFIRMATIVE COVENANTS

At all times any Loan is outstanding and until the Obligations are paid in full, Commission shall comply with the following, unless Lender shall otherwise consent in writing:

4.1 Existence; Conduct of Business. Commission, to the fullest extent allowable under applicable law, will do or cause to be done all things necessary to preserve, renew and keep in full force and effect its legal existence and the rights, licenses, permits, privileges and franchises material to the conduct of its business, except where the failure to do so, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect.

4.2 Inspection Rights.

(a) Commission shall permit Lender or its representatives, during Commission's usual business hours and upon ten (10) Business Days' prior notice, to have access to and examine and make copies of Commission's Books.

(b) At any time that Lender requests, Commission will permit, upon ten (10) Business Days' prior notice, Lender and its officers, agents and employees, or a third party on behalf of Lender, to conduct investigations or inspections to verify (i) that there is no Material Adverse Effect, (ii) that no Event of Default or Potential Event of Default has occurred and is continuing and (iii) the accuracy of any reports delivered hereunder. After the occurrence of an Event of Default, all such investigations and inspections shall be at the sole expense of Commission.

4.3 Financial Statements and Other Information. Commission shall provide to Lender (a) quarterly unaudited statements in connection with the operations of Commission no later than sixty (60) days after the end of each quarter; (b) audited financial statements within one hundred eighty (180) days after Commission's fiscal year-end; (c) such other material reports, schedules, invoices, permits, approvals, consents and authorizations relating to the Project as Lender may reasonably request from time to time; and (d) such other information concerning its business, property and financial affairs as Lender may reasonably request from time to time.

4.4 Lender Costs. Commission shall promptly after receipt of a reasonably detailed invoice therefor, reimburse Lender for reasonable sums expended by Lender for Lender Costs.

4.5 Compliance with Laws. Commission will comply with all laws, rules, regulations and orders of any Governmental Authority applicable to it or its property, except where the failure to do so, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect.

4.6 Notices of Material Events. Upon any such event becoming known to a Responsible Officer of Commission, Commission shall promptly notify Lender of (a) any event having a Material Adverse Effect, (b) the occurrence of any Event of Default or Potential Event of Default under this Agreement, (c) the institution of any litigation, governmental investigation or administrative proceedings against or affecting the Project and (d) the institution of any litigation, governmental investigation or administrative proceedings against or affecting the Commission, which has had or is reasonably likely to have a Material Adverse Effect.

4.7 Taxes. To the extent required by applicable law, Commission shall timely file or cause to be filed all tax returns, filings and reports required to be filed with any applicable Governmental Authority, if any.

4.8 Insurance. Commission, at its sole expense, shall maintain a program of insurance and/or self-insurance with respect to the property and equipment comprising the Project, in amounts and against such risks as are customarily insured against by Commission for similar property or equipment owned, leased or operated by Commission.

4.9 Job Creation Requirements; Shortfall Qualifying Amount.

(a) Commission shall create a minimum of ten (10) new full-time direct and/or indirect jobs in the Eligible Counties for each Five Hundred Thousand Dollars (\$500,000.00) advanced under each Tranche during the period commencing on the Close-Out Date for such Tranche and ending on the date that is one hundred eighty (180) days after two (2) years after such Close-Out Date (the “Job Creation Requirement”); it being understood and agreed by Lender and Commission that Loans of \$800,000,000 would require the creation of sixteen thousand (16,000) full-time direct and/or indirect permanent jobs. The total number of direct and/or indirect jobs (“New Jobs”) required to satisfy the Job Creation Requirement will be created or deemed created by completion and operation of the Project substantially as described in the economic impact study commissioned by DVRC with the approval of Commission from Impact DataSource, dated September 4, 2015 (together with any subsequent modifications, the “Economic Impact Study”), attached hereto as Exhibit C. Commission shall use the proceeds of the Loans only with respect to amounts incurred by the Project. Until such time as Commission has satisfied the Job Creation Requirement, at six (6) month intervals (and as otherwise reasonably required by the USCIS), Commission will provide Lender with reports describing, among other things, the use of proceeds of the Loans, progress of the Project, costs incurred to date and percentage of work completed.

(b) To evidence the completion and operation of the Project substantially as described in the Economic Impact Study, Commission shall, for each Tranche and by the date that is no later than one hundred eighty (180) days after the end of each two (2) year period referenced in Section 4.9(a) in respect of such Tranche, provide to Lender and DVRC or cause to be provided to Lender and DVRC the following: (i) where appropriate and customary, copies of contractors’ certificates certifying completion of the Project, reports of project status, costs incurred to date and percentage of work completed with respect to the Project and (ii) such additional information with respect to the Project as may be reasonably required by USCIS, in each case, as reasonably acceptable to Lender. If Commission has not met the Job Creation Requirement in respect of advances under any Tranche by the end of the

applicable two (2) year period, Commission, within thirty (30) days following notice from Lender of the failure to meet the Job Creation Requirement, shall repay to Lender the portion of the principal amount that was attributable to the amount of Qualifying Expenditures that Commission failed to incur ("Shortfall Qualifying Amount") plus any accrued and unpaid interest on the Shortfall Qualifying Amount then outstanding, and payment of Lender Costs, if any, incurred by Lender in enforcing its rights under the Loan Documents with respect thereto.

(c) Commission agrees that it shall not enter into any EB-5 financing for the Project with any other lender.

4.10 Project Completion. The Project shall be (a) undertaken in all material respects in accordance with the Economic Impact Study, (as amended from time to time with the prior written consent (such consent not to be unreasonably withheld or delayed) of the Lender, the "Project Completion Schedule"), attached hereto as Exhibit F and (b) completed no later than the date occurring six (6) years after the Close-Out Date for the Tranche 1 Loan.

4.11 Permits and Approvals. During the course of the Project, Commission shall cause all planning and other approvals, authorizations and/or permits required under any Governmental Authority for any phase of the Project to be obtained and remain in full force and effect; provided that Commission shall promptly notify Lender in writing of (i) any written notice of revocation, termination or default with respect to any of the foregoing and (ii) any reason Commission may have to believe that it will not be able to obtain such permits in the ordinary course of business so as not to delay completion of the Project in accordance with the Project Completion Schedule.

SECTION 5. EVENTS OF DEFAULT

5.1 Events of Default. An Event of Default under the Indenture shall constitute an Event of Default under this Agreement.

SECTION 6. LENDER'S RIGHTS AND REMEDIES

6.1 Termination; Enforcement. If an Event of Default shall occur and shall not have been remedied, then and in every such case, (i) Lender may terminate the Commitments (provided that, in the case of an Event of Default described in Section 801(e) of the Indenture, the Commitments shall automatically terminate) and (ii) Lender, by its agents and attorneys, may proceed to protect and enforce its rights under this Agreement forthwith by a suit or suits in equity or at law, whether for the specific performance of any covenant herein contained, or in aid of the execution of any power herein granted or in the enforcement of any other legal or equitable right as Lender, being advised by counsel, shall deem most effectual to enforce any of its rights or to perform any of its duties under this Agreement; provided, however, that there shall be no right to accelerate the time for payment of the Loans.

6.2 Cumulative Rights and Remedies; Lender Waivers. Subject to Section 6.1 above, Lender's rights and remedies under this Agreement and all other agreements shall be cumulative; Lender shall have all other rights and remedies not inconsistent herewith as provided by law or in equity; no exercise by Lender of one right or remedy shall be deemed an election, and no waiver by Lender of any Event of Default or breach of this Agreement on Commission's

part shall be deemed a waiver of similar subsequent Events of Default; no delay by Lender shall constitute a waiver, election or acquiescence by it.

SECTION 7. CONDITIONS

7.1 Conditions to Obligations of Lender.

(a) Effective Date Conditions. The obligation of Lender to perform any of its obligations hereunder is subject to delivery to Lender, in form and substance reasonably satisfactory to Lender prior to or concurrently with the Effective Date, of the following:

- (i) this Agreement duly executed by Commission;
- (ii) opinion of counsel to Commission;
- (iii) a general certificate of the Commission in substantially the form attached hereto as Exhibit D;
- (iv) a certificate of a Responsible Officer of Commission in substantially the form attached hereto as Exhibit E; and
- (v) the approval letter of the Attorney General of the Commonwealth as to the form and legality of this Agreement.

(b) Conditions for each Tranche. Upon Lender having provided written notice to Commission that it has received sufficient funds from Investors such that the Commitment Amount for a Tranche is available to advance to Commission and provided Lender is in compliance with the Period Conditions contained in Section 2.2 of this Agreement, then Commission shall within one hundred eighty (180) days of receiving written notice from Lender:

- (i) Deliver a fully executed Note in the Commitment Amount for such Tranche to Lender;
- (ii) Direct the Trustee to authenticate the Note for such Tranche as Additional Bonds under the Indenture upon the Trustee's receipt of all of the documents, certificates and opinions required by Section 210 of the Indenture for the issuance of Additional Bonds;
- (iii) If so requested by Lender, cooperate with Lender to provide the due diligence customarily required to deliver an opinion, at Lender's expense, of nationally recognized bond counsel (which may be counsel to Commission), to the effect that interest on the Notes issued as Additional Bonds under the Indenture is not included in gross income for federal income tax purposes under the Code;

- (iv) Deliver to Lender an opinion of counsel to Commission, satisfactory to Lender;
- (v) Execute a general certificate with respect to the Note and the Supplemental Indenture in substantially the form attached hereto as Exhibit D-1;
- (vi) Execute a certificate of a Responsible Officer of Commission in substantially the form attached hereto as Exhibit E; and
- (vii) Pay the Origination Fee for such Tranche to Lender.

Notwithstanding the foregoing, no Tranche shall be made available to Commission if Commission is not in compliance with the representations and warranties contained in Sections 3.2, 3.3, 3.4, 3.8, 3.14, 3.15 and 3.16 of this Agreement and, if a Tranche has been funded under this Agreement, no Potential Event of Default or Event of Default shall have occurred under this Agreement.

7.2 Each Advance. Notwithstanding anything herein to the contrary, Lender shall have no obligation to make any advance on any Tranche hereunder unless (a) Lender and the Investors for such advance have received all necessary approvals under the Program (as reasonably determined by Lender), provided such necessary approvals shall have been received by the Initial Funding Period for Tranche 1 and the applicable Extended Funding Period set forth in Section 2.2(b) for subsequent Tranches 2-8, (b) Lender is reasonably satisfied that there has at the time of any such advance been no Material Adverse Effect and that no Event of Default or Potential Event of Default has then occurred and is continuing, (c) Lender has received a certificate (in form and substance reasonably satisfactory to Lender) of Commission certifying that at the time of such advance Commission has sufficient funds to complete the Project at such time as contemplated by Section 4.11, (d) Lender has received a construction manager's certificate (in form and substance reasonably satisfactory to Lender) certifying that at the time of such advance the Project has been to date completed in all material respects in accordance with the Project Completion Schedule, and (e) Commission's senior long term credit rating on its senior Turnpike Revenue Bonds is at least investment grade by at least two of Fitch, Moody's and S&P.

SECTION 8. GENERAL PROVISIONS

8.1 Future Advances. All advances of the Loans heretofore, now or at any time or times hereafter made pursuant to Sections 2.1(a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o) and (p) by Lender to Commission shall, with respect to the Loans, constitute one loan from Lender.

8.2 Notices. Unless otherwise provided in this Agreement, all notices and other communications relating to this Agreement shall be in writing and shall be delivered by hand or overnight courier service, mailed by certified or registered mail or sent by facsimile, as follows:

If to Lender:

DVRC PENNSYLVANIA TURNPIKE II LIMITED
PARTNERSHIP

c/o Delaware Valley Regional Center, LLC
1845 Walnut Street, Suite 2500
Philadelphia, Pennsylvania 19103
Attention: Young Min Ban
Telecopy: [REDACTED]

With a copy to Lender's Counsel at:

Raffaele & Puppio, LLP
19 West Third Street
Media, Pennsylvania 19603
Attention: Mike Puppio
Telecopy: [REDACTED]

If to Commission:

Pennsylvania Turnpike Commission
P.O. Box 67676
Harrisburg, Pennsylvania 17106-7676
Attention: Chief Financial Officer
Telecopy: [REDACTED]

With a copy to Commission's Counsel at:

Duane Morris LLP
30 South 17th Street
Philadelphia, Pennsylvania 19103
Attention: Thomas J. Ellis
Telecopy: [REDACTED]

Any party hereto may change its address or facsimile number for notices and other communications hereunder by notice to the other parties hereto. All notices and other communications given to any party hereto in accordance with the provisions of this Agreement shall be deemed to have been given when delivered in person or by courier service, upon receipt of a telecopy, or electronic mail, or five (5) days after deposit in the United States mail (certified with postage prepaid and properly addressed).

8.3 Waivers; Amendments. Neither this Agreement nor any provision hereof may be waived, amended or modified except pursuant to an agreement or agreements in writing entered into by Commission and Lender. Lender acknowledges that Commission may enter into amendments and supplements to the Indenture.

8.4 Survival. All representations and warranties made by Commission and Lender herein shall survive the execution and delivery of this Agreement and the occurrence of the Effective Date.

8.5 Limit on Interest. Notwithstanding any provision contained in this Agreement or in the Notes, the total liability of Commission for payment of interest on the Loans shall not exceed the maximum amount of such interest permitted by law to be charged, collected, or received from Commission, and if any payments by Commission include interest in excess of such a maximum amount, Lender shall apply such excess to reduction of the unpaid principal balance of the Loans.

8.6 Records. Unless otherwise provided herein, any documents, schedules, invoices or other papers delivered to Lender by or on behalf of Commission may be destroyed or otherwise disposed of by Lender one year after they are delivered to or received by Lender, unless Commission does request, in writing, the return of such documents, schedules, invoices or other papers and does make arrangements, at Commission's expense, for their return.

8.7 Headings. Section headings and the Table of Contents used herein are for convenience of reference only, are not part of this Agreement and shall not affect the construction of, or be taken into consideration in interpreting, this Agreement.

8.8 Lender Representations. Lender represents that at the time of funding Tranche 1 and at all times thereafter during the term of this Agreement, Lender shall be an "accredited investor" as that term is defined in Rule 501 promulgated under the Securities Act of 1933, as amended (the "Securities Act"). Lender further represents and warrants that it is purchasing the Notes solely for investment purposes, for its own account and not with a view to distribution, and that Lender will not sell, transfer, pledge, hypothecate or in any manner alienate the Notes without the prior express written consent of Commission, which Commission may give or withhold in its sole discretion. Lender acknowledges that the Notes will not be registered under the Securities Act. Lender further acknowledges that the Notes when issued by Commission to Lender will bear a legend that the Notes have not been registered under the Securities Act and setting forth the restrictions on transferability and sale of the Notes. Lender acknowledges that it has received copies of the Indenture, as well as all other information and documentation concerning the Notes and Commission as has been requested by it and otherwise deemed by it to be relevant to its decision to enter into this Agreement. Lender understands that the Notes are not general obligations of Commission, but rather special and limited obligations of Commission, payable and secured solely as provided in the Indenture. Lender acknowledges that it has made its own independent investigation and evaluation of the financial position and business condition of Commission.

8.9 Successors and Assigns. This Agreement shall be binding and deemed effective as set forth in Section 1.3 and following execution by Commission and Lender. This Agreement shall bind and inure to the benefit of the respective successors and assigns of each of the parties; provided however, that (a) Commission may not assign this Agreement or any rights hereunder without Lender's prior written consent and (b) Lender may not assign its rights and obligations under this Agreement to any Person without Commission's prior written consent.

Any prohibited assignment shall be absolutely void. No consent to an assignment by Lender shall release Commission of its Obligations to Lender.

8.10 Interpretation. Neither this Agreement nor any uncertainty or ambiguity herein shall be construed or resolved against Lender or Commission, whether under any rule of construction or otherwise; on the contrary, this Agreement has been reviewed by all parties and shall be construed and interpreted according to the ordinary meaning of the words used so as to fairly accomplish the purposes and intentions of all parties hereto.

8.11 Governing Law. This Agreement shall be construed in accordance with and governed by the laws of the Commonwealth of Pennsylvania.

8.12 Dispute Resolution. All questions or disputes regarding any matter involving this Agreement or its breach shall be referred to the Board of Claims of the Commonwealth of Pennsylvania pursuant to 62 Pa.C.S.A. § 1701 et seq. If the Board of Claims either refuses or lacks jurisdiction, these questions or disputes shall proceed as provided in 42 Pa.C.S.A. § 7301 et seq. (Statutory Arbitration). The panel of arbitrators will consist of a representative of each of the parties and a third party chosen by the representatives, or if the representatives are unable to choose, by the American Arbitration Association.

8.13 Severability; Integration. Each provision of this Agreement shall be severable from every other provision of this Agreement for the purpose of determining the legal enforceability of any specific provision. This Agreement cannot be changed or terminated orally. All prior agreements, understandings, representations, warranties, and negotiations, between Lender and Commission, if any, are merged into this Agreement. The parties intend and agree that their respective rights, duties, powers, limitations, obligations and discretions shall be performed, carried out, discharged and exercised reasonably and in good faith.

8.14 Counterparts. This Agreement may be executed in any number of counterparts and by different parties in separate counterparts, each of which when so executed and delivered shall be deemed to be an original and all of such counterparts taken together shall constitute but one and the same instrument.

8.15 Relationship. Commission is only a borrower under this Agreement, and nothing contained in this Agreement, the Notes, the Indenture (including any amendments or supplements thereto), or any other documents, and no action taken by Lender or Commission shall be deemed to constitute Lender, Commission or any of the parties to any of the above documents as a partnership, an association, a joint venture or other entity, with the only relationship between the parties being that of borrower and lender.

[signature page follows]

IN WITNESS WHEREOF, the parties hereto have caused this Loan Agreement to be executed as of the date first hereinabove written.

LENDER:

DVRC PENNSYLVANIA TURNPIKE II
LIMITED PARTNERSHIP, a Pennsylvania
limited partnership

By: Delaware Valley Regional Center, LLC

By: 

Name: Joseph Manheim

Title: President and Managing Director

COMMISSION:

PENNSYLVANIA TURNPIKE
COMMISSION, an instrumentality of the
Commonwealth of Pennsylvania

ATTEST:

Ann Louise Edmunds
Assistant Secretary-Treasurer

By: _____
Name: Sean Logan
Title: Chairman

APPROVED AS TO FORM AND LEGALITY:

Albert C. Peters II
General Litigation & Contracts Counsel

8/4/2016
Date

See Approval Memo dated July 25, 2016
David E. Stover
Senior Deputy Attorney General

Signature Page to Loan Agreement

IN WITNESS WHEREOF, the parties hereto have caused this Loan Agreement to be executed as of the date first hereinabove written.

LENDER:

DVRC PENNSYLVANIA TURNPIKE II
LIMITED PARTNERSHIP, a Pennsylvania
limited partnership

By: Delaware Valley Regional Center, LLC
its general partner

By: _____

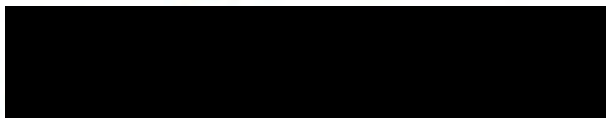
Name: Joseph Manheim

Title: President and Managing Director

COMMISSION:

PENNSYLVANIA TURNPIKE
COMMISSION, an instrumentality of the
Commonwealth of Pennsylvania

ATTEST:



Ann Louise Edmunds
Assistant Secretary-Treasurer

By: _____

Name: Sean Logan

Title: Chairman

APPROVED AS TO FORM AND LEGALITY:

Albert C. Peters II

General Litigation & Contracts Counsel

8/4/2016

Date

See Approval Memo dated July 25, 2016

David E. Stover

Senior Deputy Attorney General

IN WITNESS WHEREOF, the parties hereto have caused this Loan Agreement to be executed as of the date first hereinabove written.

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DVRC PENNSYLVANIA TURNPIKE II
LIMITED PARTNERSHIP, a Pennsylvania
limited partnership

By: Delaware Valley Regional Center, LLC
its general partner

By: _____
Name: Joseph Manheim
Title: President and Managing Director

COMMISSION:


PENNSYLVANIA TURNPIKE
COMMISSION, an instrumentality of the
Commonwealth of Pennsylvania

ATTEST:

Ann Louise Edmunds
Assistant Secretary-Treasurer

By: _____
Name: Sean Logan
Title: Chairman

APPROVED AS TO FORM AND LEGALITY:



Albert C. Peters II *7/29/16*
General Litigation & Contracts Counsel

See Approval Memo dated July 25, 2016
David E. Stover
Senior Deputy Attorney General

Commonwealth of Pennsylvania
Office of Attorney General
July 25, 2016

Subject: Contract PTC-2016-45

To: Pennsylvania Turnpike Commission
Doreen McCall
Chief Counsel

From: David E. Stover 
Senior Deputy Attorney General
Legal Review Section

Pennsylvania Turnpike Commission

JUL 25 2016

Legal Department

The following proposed document(s) for the above-referenced contract are approved for form and legality pursuant to the Commonwealth Attorneys Act, 71 P.S. Section 732.101 et seq.

No approval or opinion is offered as to the manner of execution if the document was submitted in proposed form. No approval or opinion is offered concerning any document referenced but not submitted or any events or other occurrences giving rise to the contract's creation or submission. Our review and approval is based upon the law of the Commonwealth of Pennsylvania. This review does not extend to compliance with the laws of other jurisdictions. To the extent, if any, that such other laws may be applicable to the making or performance of the contract in any respect, the agency may want to consult with counsel in that jurisdiction.

To the extent applicable to the referenced contract, no approval or opinion is offered as to the fiscal authority of the agency to commit funds not yet appropriated. The Office of the Budget is responsible for the fiscal review of the contracts pursuant to the Commonwealth Procurement Code, 62 Pa. C.S. Section 327.

1. Loan Agreement

DES/jn
CC:

Contract: PTC-2016-45

Vendor: DVRC PENNSYLVANIA TURNPIKE LP

Schedule I

Eligible Counties

Allegheny County

Beaver County

Bedford County

Berks County

Bucks County

Butler County

Carbon County

Chester County

Dauphin County

Montgomery County

Somerset County

Westmoreland County

York County

Schedule 2.4

**Borrowers Optional Payment Calculation Methodology for Additional Bonds
(Representative Example)**

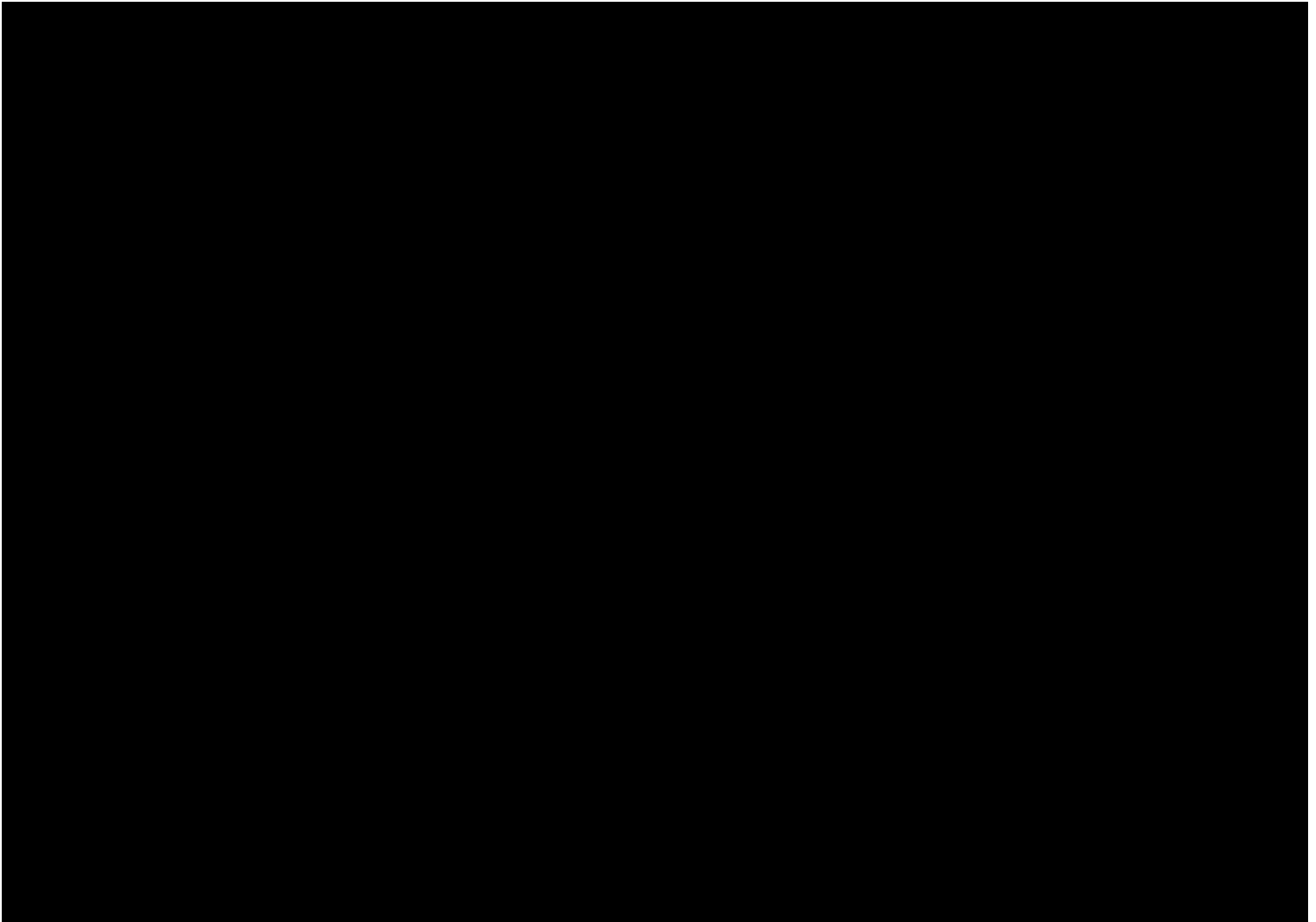


Exhibit A

FORM OF PENNSYLVANIA TURNPIKE COMMISSION
TURNPIKE PROMISSORY NOTE (20XX EB-5)

THE SECURITIES REPRESENTED BY THIS NOTE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE SOLD, TRANSFERRED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN ANY MANNER.

Dated Date:

Tranche No. ____

Maturity Date:

Registered Owner:

Principal Amount:

Pennsylvania Turnpike Commission ("Commission"), an instrumentality of the Commonwealth of Pennsylvania (the "Commonwealth"), for value received, hereby promises to pay to DVRC Pennsylvania Turnpike II Limited Partnership, as Lender, or its registered assigns ("Lender"), on the Maturity Date stated above, the Principal Amount stated above (or, if applicable, such lesser amount as shall have been actually advanced by Lender to Commission and be outstanding from time to time under the Loan Agreement, as defined below), and to pay interest on such Principal Amount at the intervals and at the rate of interest specified below, all as hereinafter provided. This Note is issuable as a fully registered Note and shall be registered on the register maintained by the Trustee for that purpose.

This Note evidences and secures Commission's obligations under the Loan Agreement dated as of August 4, 2016 (as amended, restated, amended and restated, extended, supplemented or otherwise modified from time to time, the "Loan Agreement") between Commission and Lender and is issued pursuant to, and constitutes "Additional Bonds" as defined in, the Amended and Restated Trust Indenture, dated as of March 1, 2001 (the "Restated Indenture"), between Commission and U.S. Bank National Association, Philadelphia, Pennsylvania, as Trustee (the "Trustee"), and as further supplemented by a Supplemental Trust Indenture No. ____, dated as of _____, between Commission and the Trustee (the "Supplemental Indenture," and together with the Restated Indenture and all amendments and supplements thereto, the "Indenture"). Capitalized terms used herein which are not defined shall have the meanings set forth in the Loan Agreement, the Indenture or the Supplemental Indenture, as applicable.

The Note is issued under and pursuant to an Act of the General Assembly of the Commonwealth of Pennsylvania approved May 21, 1937, P.L. 774, No 211, as amended and supplemented, inter alia, by an Act of the General Assembly of the Commonwealth approved July 18, 2007, P.L. 169, No. 44, under and pursuant to resolutions of Commission and under and pursuant to the Indenture, for the purpose of financing the Project.

Commission promises to pay interest on the principal amount of this Note at the rate of [REDACTED] per annum, computed on the basis of a 360-day year consisting of twelve 30-day months (the "Interest Rate"). Interest shall be due and payable semi-annually in arrears to Lender on the first day of June and December of every year (each a "Payment Date") until the Principal Amount has been paid in full; provided, that if such day is not a Business Day, the Payment Date shall be the following Business Day. Interest on this Note shall be determined based on the amounts advanced and outstanding from time to time during the previous semi-annual period. All payments of principal and interest shall be made to Lender in lawful money of the United States of America by wire transfer of immediately available funds to such bank in the continental United States as Lender shall request in writing to the Trustee.

After the occurrence of an Event of Default, and so long as such Event of Default is continuing, upon notice given to Commission by Lender, the rate of interest applicable to the outstanding principal amount hereunder shall be [REDACTED] per annum plus the Interest Rate.

This Note is the Tranche No. ____ Note referred to in the Loan Agreement, is entitled to the benefits thereof, is subject to mandatory redemption in accordance with Section 2.7 and 4.9 of the Loan Agreement, and may not be prepaid in whole or in part. Reference is hereby made to the Loan Agreement for a statement of all of the terms and conditions under which the Principal Amount and all advances in respect thereof evidenced hereby are to be made and to be repaid.

THIS NOTE IS A LIMITED OBLIGATION OF THE COMMISSION AND SHALL NOT BE DEEMED TO BE DEBT OF THE COMMONWEALTH OR ANY SUBDIVISION THEREOF. THIS NOTE SHALL BE PAYABLE SOLELY FROM THE REVENUES (AS DEFINED IN THE INDENTURE) OF COMMISSION PLEDGED FOR THAT PURPOSE. THE FAITH AND CREDIT OF THE COMMONWEALTH ARE NOT PLEDGED TO THE PAYMENT OF THE PRINCIPAL OR REDEMPTION PRICE HEREOF OR THE INTEREST HEREON, AND THE COMMONWEALTH IS NOT DIRECTLY OR INDIRECTLY OR CONTINGENTLY OBLIGATED TO LEVY OR TO PLEDGE ANY FORM OF TAXATION WHATEVER THEREFOR, OR TO MAKE ANY APPROPRIATION FOR PAYMENT OF THIS NOTE.

The Indenture provides for the issuance, under the conditions, limitations and restrictions therein set forth, of Additional Bonds and subordinate indebtedness (each as described in the Indenture) for the purposes set forth therein.

Except as otherwise provided in the Indenture, this Note is equally ratably secured, together with all other bonds issued or to be issued in the future pursuant to the Indenture (collectively, the "Bonds") by a pledge by Commission of the Trust Estate (as defined in the Indenture), including the Revenues (as defined in the Indenture).. Any Additional Bonds issued under the Indenture will be equally and ratably secured under the Indenture with this Note and all other Bonds issued and outstanding under the Indenture. The Indenture provides the conditions, limitations and restrictions under which Additional Bonds become equally and ratably secured under the Indenture with this Note and the Bonds.

The Commission is required to fix and change tolls for the use of the Pennsylvania Turnpike System and to adjust such tolls from time to time as may be necessary in order that such tolls and other Revenues will be sufficient to pay the cost of maintaining, repairing, and operating the same, to pay the principal of and interest on this Note and all other Bonds, and to create reserves for such purposes, all in the manner provided in the Indenture.

An executed counterpart of the Indenture is on file at the office of the Commission and at the designated corporate trust offices of the Trustee. Reference is hereby made to the Indenture for the provisions, among others, with respect to collection and disposition of Revenues, the funds charged with and pledged to the payment of the interest on, the principal of and the premium, if any, on the Note, the nature and extent of the security, the terms and conditions on which this Note is issued, the rights, duties and obligations of Commission and the Trustee and the rights of the owners of this Note. By the acceptance of this Note, the registered owner hereof assents to all of the provisions of the Indenture.

The owner of this Note by the acceptance hereof specifically agrees that the Trustee shall be under no obligation to take any action with respect to any Event of Default occurring under the terms of this Note or the Indenture, other than to give notice of certain defaults as provided in the Indenture, unless requested so to do in writing by the owners of not less than a majority in principal amount of the Bonds then Outstanding under the Indenture upon receipt of satisfactory indemnity as provided in the Indenture.

The owner of this Note shall have no right to enforce the provisions of the Indenture or to institute 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 proceeding with respect thereto, except as provided in the Indenture.

Upon the occurrence of an event of default, and on the conditions, in the manner and with the effect, set forth in the Indenture, the principal of all Bonds then outstanding under the Indenture may become or may be declared due and payable before the stated maturities thereof, together with the interest accrued thereon.

Modifications or alterations of the Indenture or of any indenture supplemental thereto may be made by Commission and the Trustee only to the extent and in the circumstances permitted by the Indenture.

All acts conditions and things required by the constitution and statues of the Commonwealth and the rules and regulations of Commission to happen, exist and be performed precedent to and in the issuance of this Note and the execution of the Indenture, and the Supplemental Indenture have happened, exist and have been performed as so required.

No recourse shall be had for the payment of the principal or redemption price of, or interest on, this Note, or for any claim based hereon or on the Indenture, against any member, director, officer or employee, past, present or future, of Commission or of any successor body, as such either directly or through Commission or any such successor body, under any constitution provision, statute or rule of law, or by the enforcement of any assessment or by any legal or equitable proceeding or otherwise.

This Note shall be governed by and construed under the laws of the Commonwealth of Pennsylvania, all rights and remedies being governed by such laws.

This Note 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 hereon shall have been signed by the Trustee. This Note is one of a duly authorized issue of \$800,000,000, maximum aggregate principal amount, Turnpike Promissory Notes, issued pursuant to, under authority of and in full compliance with the Constitution and laws of the Commonwealth of Pennsylvania, the Resolution of the Commission, and the Indenture and Supplemental Indenture.

[SIGNATURE PAGE AND CERTIFICATE OF AUTHENTICATION FOLLOW]

IN WITNESS WHEREOF, Commission has caused this Note to be executed in its name by the _____ of Commission and the official seal of Commission to be affixed, imprinted, lithographed or reproduced hereon and attested by the manual or facsimile signature of its Secretary/Treasurer, or Assistant Secretary/Assistant Treasurer, and this Note to be delivered this ____ day of _____, 2016.

Attest:

PENNSYLVANIA TURNPIKE
COMMISSION

By: _____
Name: _____
Title: _____

CERTIFICATE OF AUTHENTICATION

This Note is the Note described in the within-mentioned Indenture.

U.S. BANK NATIONAL ASSOCIATION,
Trustee

Authentication Date:

By: _____
Authorized Officer

Exhibit A-1
INDENTURE

Execution Copy

PENNSYLVANIA TURNPIKE COMMISSION
to
FIRST UNION NATIONAL BANK,
(formerly Fidelity Bank, National Association),
as Trustee

AMENDED AND RESTATED
TRUST INDENTURE

Originally dated as of July 1, 1986;
Amended and Restated as of March 1, 2001

TABLE OF CONTENTS

	<u>Page</u>
Parties	1
Recitals	1
Enabling Acts	3
Agreement of Parties	3
 ARTICLE I	 5
DEFINITIONS	5
SECTION 101. <i>Definitions of Words and Terms</i>	5
SECTION 102. <i>Rules of Interpretation</i>	21
 ARTICLE II	 23
AUTHORIZATION, EXECUTION, AUTHENTICATION, REGISTRATION AND DELIVERY OF BONDS	23
SECTION 201. <i>Issuance of Bonds; Form and Terms Thereof</i>	23
SECTION 202. <i>Limited Obligations</i>	23
SECTION 203. <i>Execution of Bonds; Payment</i>	23
SECTION 204. <i>Authentication of Bonds</i>	24
SECTION 205. <i>Registration of Transfer and Exchange of Bonds;</i> <i>Persons Treated as Bondholders</i>	24
SECTION 206. <i>Temporary Bonds</i>	25
SECTION 207. <i>Mutilated, Lost or Destroyed Bonds</i>	25
SECTION 208. <i>Cancellation and Disposition of Bonds</i>	25
SECTION 209. <i>Securities Depository Provisions</i>	25
SECTION 210. <i>Additional Bonds</i>	27
SECTION 211. <i>Certain Contracts and Swaps</i>	28
SECTION 212. <i>Conversions of Variable Rate Indebtedness to Fixed</i> <i>Rate Indebtedness</i>	30
 ARTICLE III	 31
REDEMPTION OF BONDS	31
SECTION 301. <i>Redemption of Bonds</i>	31
SECTION 302. <i>Notice of Redemption</i>	31
SECTION 303. <i>Purchase at Any Time</i>	33
SECTION 304. <i>Costs of Redemptions</i>	33

ARTICLE IV	34
CONSTRUCTION FUND.....	34
SECTION 401. <i>Construction Fund</i>	34
SECTION 402. <i>Payments From Construction Fund</i>	34
SECTION 403. <i>Trustee to Retain Requisitions</i>	34
SECTION 404. <i>Transfer of Excess Moneys in Construction Fund</i>	35
ARTICLE V	36
TOLLS, REVENUES AND FUNDS	36
SECTION 501. <i>Covenants as to Tolls</i>	36
SECTION 502. <i>Uniformity of Tolls</i>	37
SECTION 503. <i>Creation of Funds</i>	39
SECTION 504. <i>Revenue Fund; Agreements With Other Turnpikes</i>	39
SECTION 505. <i>Operating Account</i>	40
SECTION 506. <i>Debt Service Fund</i>	41
SECTION 507. <i>Reserve Maintenance Fund</i>	42
SECTION 508. <i>Debt Service Reserve Fund</i>	42
SECTION 509. <i>General Reserve Fund</i>	44
SECTION 510. <i>Rebate Fund</i>	45
SECTION 511. <i>Moneys Set Aside for Principal and Interest Held in</i> <i>Trust</i>	45
SECTION 512. <i>Additional Security</i>	45
ARTICLE VI	47
DEPOSITARIES AND INVESTMENTS OF MONEYS.....	47
SECTION 601. <i>Depository</i>	47
SECTION 602. <i>Investment of Moneys</i>	47
ARTICLE VII.....	49
PARTICULAR COVENANTS.....	49
SECTION 701. <i>Payment of Principal, Interest and Premium</i>	49
SECTION 706. <i>Annual Operating Budget; Capital Budget</i>	49
SECTION 703. <i>Limitations on Issuance of Additional Bonds and</i> <i>Execution of Approved Swaps</i>	50
SECTION 703. <i>Use and Operation of System</i>	52
SECTION 705. <i>Inspection of the System</i>	52
SECTION 706. <i>Construction of Projects</i>	52
SECTION 707. <i>Employment of Consulting Engineers</i>	53
SECTION 708. <i>Insurance</i>	53
SECTION 709. <i>Damage or Destruction</i>	54

SECTION 710. <i>Annual Audit</i>	54
SECTION 711. <i>Encumbrance of Revenues; Sale, Lease or Other Disposition of Property</i>	54
SECTION 712. <i>Tax Covenants</i>	55
SECTION 713. <i>Security Agreement; Financing Statements</i>	56
SECTION 714. <i>Further Instruments and Action</i>	56
ARTICLE VIII	57
EVENTS OF DEFAULT AND REMEDIES	57
SECTION 801. <i>Events of Default</i>	57
SECTION 802. <i>Remedies Upon Default</i>	57
SECTION 803. <i>Additional Remedies</i>	58
SECTION 804. <i>Marshaling of Assets</i>	59
SECTION 805. <i>Trustee May File Proofs of Claim</i>	59
SECTION 806. <i>Possession of Bonds Not Required</i>	60
SECTION 807. <i>Notice and Opportunity to Cure Certain Defaults</i>	60
SECTION 808. <i>Priority of Payment Following Event of Default</i>	60
SECTION 809. <i>Bondholders May Direct Proceedings</i>	62
SECTION 810. <i>Limitations on Rights of Bondholders</i>	62
SECTION 811. <i>Unconditional Right of Bondholder to Receive Payment</i>	63
SECTION 812. <i>Restoration of Rights and Remedies</i>	63
SECTION 813. <i>Rights and Remedies Cumulative</i>	63
SECTION 814. <i>Delay or Omission Not Waiver</i>	63
SECTION 815. <i>Waiver of Defaults</i>	64
SECTION 816. <i>Notice of Events of Default</i>	64
ARTICLE IX	65
THE TRUSTEE	65
SECTION 901. <i>Duties and Responsibilities of the Trustee</i>	65
SECTION 902. <i>Certain Rights of the Trustee</i>	66
SECTION 903. <i>Trustee Not Responsible for Recitals</i>	68
SECTION 904. <i>Trustee May Own Bonds</i>	68
SECTION 905. <i>Compensation and Expenses of the Trustee</i>	68
SECTION 906. <i>Qualifications of Trustee</i>	69
SECTION 907. <i>Resignation or Removal of Trustee; Appointment of Successor Trustee</i>	70
SECTION 908. <i>Acceptance of Appointment by Successor Trustee</i>	71
SECTION 909. <i>Merger, Succession or Consolidation of Trustee</i>	71
SECTION 910. <i>Notices to Bondholders; Waiver</i>	71
SECTION 911. <i>Paying Agents and Authenticating Agents</i>	73
ARTICLE X	74

SUPPLEMENTAL INDENTURES.....	74
SECTION 1001. <i>Supplemental Indentures Without Bondholders'</i> <i>Consent</i>	74
SECTION 1002. <i>Supplemental Indentures Requiring Bondholders'</i> <i>Consent</i>	75
SECTION 1003. <i>Consents of Bondholders and Opinions</i>	76
SECTION 1004. <i>Exclusion of Certain Bonds for the Purpose of</i> <i>Consent, etc.</i>	76
SECTION 1005. <i>Notation on Bonds</i>	76
SECTION 1006. <i>Delivery of Counsel's Opinion with Respect to</i> <i>Supplemental Indentures</i>	77
SECTION 1007. <i>Effect of Supplemental Indentures</i>	77
ARTICLE XI.....	78
DISCHARGE AND DEFEASANCE	78
SECTION 1101. <i>Discharge</i>	78
SECTION 1102. <i>Defeasance; Deposit of Funds for Payment of Bonds</i>	78
SECTION 1103. <i>Notice of Defeasance</i>	79
ARTICLE XII	80
MISCELLANEOUS PROVISIONS.....	80
SECTION 1201. <i>Successorship of Commission</i>	80
SECTION 1202. <i>Successorship of Paying Agents</i>	80
SECTION 1203. <i>Notices</i>	80
SECTION 1204. <i>Holidays</i>	81
SECTION 1205. <i>Counterparts</i>	81
SECTION 1206. <i>Applicable Law</i>	81
SECTION 1207. <i>Limitation of Liability of Officials of the Commission</i>	81
SECTION 1208. <i>Successors and Assigns</i>	82
SECTION 1209. <i>Form of Documents Delivered to Trustee</i>	82
SECTION 1210. <i>Consent of Holders</i>	82

THIS Amended and Restated Indenture (the "Indenture"), dated as of March 1, 2001, is made by and between the PENNSYLVANIA TURNPIKE COMMISSION, an instrumentality of the Commonwealth of Pennsylvania (hereinafter sometimes called the "Commission"), and FIRST UNION NATIONAL BANK (formerly Fidelity Bank, National Association), a national banking association duly organized and validly existing under and by virtue of the laws of the United States of America and having a corporate trust office in the City of Philadelphia, Pennsylvania (said banking association and any bank or trust company appointed as successor trustee under this Indenture being hereinafter sometimes called the "Trustee").

WITNESSETH:

WHEREAS, by an Act of the General Assembly of Pennsylvania approved May 21, 1937, P.L. 774, Act 211, the Commission was created and constituted an instrumentality of the Commonwealth, and by virtue of said Act the Commission was authorized and empowered to construct, operate and maintain a turnpike from a point at or near Middlesex in Cumberland County, Pennsylvania to a point at or near Irwin in Westmoreland County, Pennsylvania (such turnpike, including all connecting roads, tunnels and bridges and all property, rights, easements and franchises relating thereto, being hereinafter sometimes collectively called the "Original Turnpike"), and to issue turnpike revenue bonds, payable solely from revenues, to pay the cost of such construction; and

WHEREAS, by virtue of an Act of the General Assembly of Pennsylvania approved May 16, 1940, P.L. 949, the Commission was authorized and empowered to construct, operate and maintain a turnpike from a point at or near Middlesex in Cumberland County, Pennsylvania (the eastern terminus of the Original Turnpike) to a point at the City of Philadelphia (such turnpike, including all connecting roads, tunnels and bridges and all property, rights, easements and franchises relating thereto, being hereinafter sometimes collectively called the "Eastern Extension"), and to issue turnpike revenue bonds, payable solely from revenues, to pay the cost of such construction; and

WHEREAS, by virtue of several Acts of the General Assembly of Pennsylvania, the Commission was authorized and empowered (1) to construct, operate and maintain turnpike extensions and turnpike improvements at various locations, (2) to provide for the issuance at one time or from time to time, of revenue bonds for the purpose of paying the cost of such extensions and improvements to the turnpike system and refunding turnpike revenue bonds then outstanding, and (3) to fix and revise, from time to time, tolls for the use of said projects; and

WHEREAS, by virtue of an Act of the General Assembly of Pennsylvania approved September 30, 1985, P.L. 240, Act 61, the Commission was authorized and empowered (1) to construct, operate and maintain turnpike extensions and turnpike

improvements at such specific locations and according to such schedule as shall be deemed feasible and approved by the Commission, all as identified in such Act, (2) to provide, by resolution, at one time or from time to time, for the issuance of turnpike revenue bonds, notes or other obligations of the Commission for the purpose of paying the cost of such extensions and improvements, (3) to provide, by resolution for the issuance of turnpike revenue refunding bonds for the purpose of refunding turnpike revenue bonds, notes or other obligations issued and then outstanding, and (4) to fix and to revise, from time to time, tolls to pay the cost of constructing, maintaining, repairing and operating the turnpike system and to pay any bonds, notes or other obligations and the interest thereon of the Commission, and all sinking fund requirements of the Commission, and other requirements provided for by any resolution authorizing the issuance of bonds, notes or other obligations by the Commission, or by any trust indenture to which the Commission is a party; and

WHEREAS, the Commission has previously issued various series of its Pennsylvania Turnpike Revenue Bonds pursuant to an Indenture of Trust dated as of July 1, 1986 between the Commission and the Trustee (the "Original Indenture"), as supplemented and amended by a First Supplemental Trust Indenture dated as of August 1, 1986, a Second Supplemental Trust Indenture dated as of November 15, 1988, a Third Supplemental Trust Indenture dated as of May 15, 1989, a Fourth Supplemental Trust Indenture dated as of November 15, 1989, a Fifth Supplemental Trust Indenture dated as of May 15, 1990, a Sixth Supplemental Trust Indenture dated as of November 15, 1990, a Seventh Supplemental Trust Indenture dated as of June 1, 1991, an Eighth Supplemental Trust Indenture dated as of July 1, 1991, a Ninth Supplemental Trust Indenture dated as of November 15, 1991, a Tenth Supplemental Trust Indenture dated as of August 1, 1992, an Eleventh Supplemental Trust Indenture dated as of June 1, 1998 and a Twelfth Supplemental Trust Indenture dated as of March 1, 2001 (the Original Indenture, as so supplemented and amended and as hereinafter supplemented and amended until such time as this Indenture becomes effective (as more fully described in the following paragraph), is referred to hereinafter as the "Prior Indenture"); and

WHEREAS, the Commission has determined that substantial changes are needed in the Prior Indenture to provide the Commission, among other things, greater flexibility in conducting its operations and in financing its capital needs; as a result, the Commission is amending and restating the provisions of the Prior Indenture by entering into this Indenture, which Indenture will become effective upon the Trustee's receipt of the necessary percentage of bondholders' consents, as more fully set forth in the Twelfth Supplemental Trust Indenture; and

WHEREAS, by virtue of said Act approved May 21, 1937, P.L. 774, as amended by Acts approved on various dates, including May 24, 1945 P.L. 972, and February 26, 1947, P.L. 17, and said Acts approved May 23, 1951, P.L. 335, August 14, 1951, P.L. 1232 and September 30, 1985, P.L. 240 (said Acts, as

amended, and any successor acts, as amended, being hereinafter sometimes collectively called the "Enabling Acts"), the Commission is authorized to issue turnpike revenue bonds as hereinafter provided, to enter into this Indenture and to do or cause to be done all the acts and things herein provided or required to be done as hereinafter covenanted; and

WHEREAS, the execution and delivery of this Indenture have been duly authorized by resolutions of the Commission; and

WHEREAS, all acts, conditions and things required by the Constitution and laws of the Commonwealth and by the rules and regulations of the Commission to happen, exist and be performed precedent to and in the execution and delivery of this Indenture have happened, exist and have been performed as so required, in order to make this Indenture a valid and binding trust indenture for the security of the Bonds in accordance with its terms; and

WHEREAS, the Trustee has accepted the trusts created by this Indenture and in evidence thereof has joined in the execution hereof;

NOW, THEREFORE, THIS INDENTURE WITNESSETH, that in consideration of the premises, of the acceptance by the Trustee of the trusts hereby created, and to secure the payment of the Bonds, and the performance and observance by the Commission of all the covenants, agreements and conditions expressed or implied herein and contained in the Bonds, the Commission pledges and assigns to the Trustee and grants to the Trustee, a security interest in all right, title and interest of the Commission in and to (i) all Revenues as defined in this Indenture, (ii) all monies deposited into accounts or funds created by this Indenture and held by or on behalf of the Trustee (other than the Rebate Fund), (iii) any insurance proceeds and other moneys required to be deposited herein, (iv) all payments received by the Commission pursuant to Parity Swap Agreements, and (v) all investment earnings on all moneys held in accounts and funds established by this Indenture, other than the Rebate Fund (collectively, the "Trust Estate") for the equal and proportionate benefit and security of all Bonds, all of which, regardless of the time or times of their delivery or maturity, shall be of equal rank without preference priority or distinction as to lien or otherwise of any Bond over any other Bond, except as otherwise permitted by or provided for in this Indenture, and except that any funds held by the Trustee for the payment of specific Bonds which are deemed to have been paid and any funds deposited with the Trustee hereunder specifically to be held in escrow or otherwise to provide additional security or an additional source of payment for specified Bonds shall be held and used only to pay or provide security for the Bonds for which such deposit was made and shall not be held as security on a parity for all Bonds.

Although the Trustee is a fiduciary solely of the Owners of the Bonds, the Trustee is not a fiduciary of the other Secured Owners. Upon compliance with the

provisions of this Indenture, the Parity Obligations of such other Secured Owners shall be secured by the same collateral, namely the Trust Estate, on a parity (on an equal and ratable basis) with the Bonds, except as provided herein (including as provided in Section 512).

ARTICLE I

DEFINITIONS

SECTION 101. *Definitions of Words and Terms.* In addition to words and terms elsewhere defined in this Indenture, the following words and terms as used in this Indenture shall have the following meanings unless the context clearly indicates otherwise:

"Additional Bonds" -- Bonds of any Series authorized to be issued under this Indenture.

"Annual Capital Budget" -- the budget adopted by the Commission pursuant to Section 702(b).

"Annual Operating Budget" -- the budget adopted by the Commission pursuant to Section 702(a).

"Annual Debt Service" -- (a) the amount of principal and interest paid or payable with respect to Bonds in a Fiscal Year plus (b) Reimbursement Obligations paid or payable by the Commission in such Fiscal Year (but only to the extent they are not duplicative of such principal and interest), plus (c) the amounts, if any, paid or payable by the Commission in such Fiscal Year with respect to Approved Swap Agreements, minus (d) the amounts, if any, paid or payable to the Commission in such Fiscal Year with respect to Approved Swap Agreements, provided that the difference between the amounts described in clauses (c) and (d) shall be included only to the extent that such difference would not be recognized as a result of the application of the assumptions set forth below. The following assumptions shall be used to determine the Annual Debt Service becoming due in any Fiscal Year:

(1) in determining the principal amount paid or payable with respect to Bonds or Reimbursement Obligations in each Fiscal Year, payment shall be assumed to be made in accordance with any amortization schedule established for such Indebtedness, including amounts paid or payable pursuant to any mandatory redemption schedule for such Indebtedness;

(2) if any of the Indebtedness or proposed Indebtedness constitutes Balloon Indebtedness, then such amounts thereof as constitute Balloon Indebtedness shall be treated as if such Indebtedness is to be amortized in substantially equal annual installments of principal and interest over a term of 25 years from the date of issuance of such Indebtedness. Anything to the contrary herein notwithstanding, during the year preceding the final maturity date of such Indebtedness, all of the principal thereof shall be

considered to be due on such maturity date unless the Commission provides to the Trustee a certificate of a Financial Consultant certifying that, in its judgement, the Commission will be able to refinance such Balloon Indebtedness, in which event the Balloon Indebtedness shall be amortized over the term of the Indebtedness expected to refinance such Balloon Indebtedness and shall bear the interest rate specified in the certificate of the Financial Consultant;

(3) if any of the Indebtedness or proposed Indebtedness constitutes Variable Rate Indebtedness, then interest in future periods shall be based on the Assumed Variable Rate.

(4) Termination or similar payments under an Approved Swap Agreement shall not be taken into account in any calculation of Annual Debt Service.

"Applicable Long-Term Indebtedness" -- includes Bonds, Additional Bonds, Reimbursement Obligations and obligations of the Commission under Approved Swap Agreements, to the extent the same constitute Long-Term Indebtedness, and excludes Subordinated Indebtedness.

"Approved Swap Agreement" -- shall have the meaning set forth in Section 211.

"Assumed Variable Rate" -- in the case of (a) Outstanding Variable Rate Indebtedness, the average interest rate on such Indebtedness for the most recently completed 12-month period; and (b) proposed Variable Rate Indebtedness, (1) which will, in the opinion of Bond Counsel delivered at the time of the issuance thereof be excluded from gross income for federal income tax purposes, the average of the Bond Market Association Swap Index ("BMA Index") for the 12 months ending 7 days preceding the date of calculation plus 100 basis points, or (2) in the case of Bonds not described in clause (1), the London Interbank Offered Rate ("LIBOR") most closely resembling the reset period for the Variable Rate Indebtedness plus 100 basis points; provided that if the BMA Index or LIBOR shall cease to be published, the index to be used in its place shall be that index which the Commission in consultation with the Financial Consultant determines most closely replicates such index, as set forth in a certificate of a Commission Official filed with the Trustee

"Authenticating Agent" -- that Person designated and authorized to authenticate any series of Bonds or such Person designated by the Authenticating Agent to serve such function, and shall initially be the Trustee.

"Authorized Denominations" -- with respect to any Additional Bonds issued under a Supplemental Indenture, those denominations specified in such Supplemental Indenture.

"Balloon Indebtedness" -- Long-Term Indebtedness of which 25 % or more of the principal matures in the same Fiscal Year and is not required by the documents pursuant to which such Indebtedness was issued to be amortized by payment or redemption prior to that Fiscal Year, provided that such Indebtedness will not constitute Balloon Indebtedness if the Trustee is provided a certificate of a Commission Official certifying that such Indebtedness is not to be treated as Balloon Indebtedness (because, by way of example, such Indebtedness is intended to serve as "wrap around" Indebtedness).

"Bank" -- as to any particular Series of Bonds, each Person (other than a Bond Insurer) providing a letter of credit, a line of credit, a guaranty or another credit or liquidity enhancement facility as designated in the Supplemental Indenture providing for the issuance of such Bonds.

"Bank Fee" -- any commission, fee or expense payable to a Bank pursuant to a Reimbursement Agreement (but not amounts payable as reimbursement for amounts drawn under a Credit Facility or interest on such amounts).

"Bankruptcy Law" -- Title 9 of the United States Code, as amended from time to time, and any successor to or replacement of such Title and any other applicable federal or state bankruptcy, insolvency or similar law.

"Beneficial Owner" -- the beneficial owner of any Bond which is held by a nominee.

"Bond" or "Bonds" -- Bonds outstanding under the Prior Indenture and indebtedness of any kind or class, including bonds, notes, bond anticipation notes, commercial paper and other obligations, issued as Additional Bonds under Section 210, other than Additional Bonds issued as Subordinated Indebtedness.

"Bond Buyer Index" -- shall mean the Bond Buyer 20-Bond Index as published weekly in "The Bond Buyer". If such Index shall cease to be published, the Financial Consultant shall select another index which shall be reflective of the Commission's fixed borrowing cost.

"Bond Counsel" -- any attorney or firm of attorneys whose experience in matters relating to the issuance of obligations by states and their political subdivisions is nationally recognized.

"Bond Insurer" -- as to any particular maturity or any particular Series of Bonds, the Person undertaking to insure such Bonds as designated in a Supplemental Indenture providing for the issuance of such Bonds.

"Bond Owner," "Bondholder," "Holder," "Owner" or "Registered Owner" (or the lower case version of the same) -- the Person in whose name any Bond or Bonds are registered on the books maintained by the Registrar.

"Bond Register" -- the register maintained pursuant to Section 205.

"Bond Registrar" -- with respect to any series of Bonds, that Person which maintains the Bond Register or such other entity designated by the Bond Registrar to serve such function and initially shall be the Trustee.

"Book-Entry-Only System" -- a system similar to the system described herein pursuant to which Bonds are registered in book-entry form.

"Business Day" -- any day other than a Saturday or a Sunday or a day on which banking institutions are required or authorized by law or executive order to remain closed in the city in which the designated office of the Trustee is located, the Commonwealth or the City of New York.

"Chief Engineer" -- the employee of the Commission designated its "Chief Engineer" or any successor title.

"Code" -- the Internal Revenue Code of 1986, as amended, and the regulations proposed or in effect with respect thereto.

"Commonwealth" -- the Commonwealth of Pennsylvania.

"Commission Official" -- any commissioner, director, officer or employee of the Commission authorized to perform specific acts or duties by resolution duly adopted by the Commission.

"Conditional Redemption" -- shall have the meaning set forth in Section 302.

"Consultant" -- a Person who shall be independent, appointed by the Commission as needed, qualified and having a nationwide and favorable reputation for skill and experience in such work for which the Consultant was appointed. In those situations in which a Consultant is appointed to survey risks and to recommend insurance coverage, such Consultant may be a broker or agent with whom the Commission transacts business.

"Consulting Engineers" -- the engineer or engineering firm or corporation at the time employed by the Commission under the provisions of Section 707.

"Cost" -- all or any part of:

(a) the cost of construction, reconstruction, restoration, repair and rehabilitation of a Project or portion thereof (including, but not limited to, indemnity and surety bonds, permits, taxes or other municipal or governmental charges lawfully levied or assessed during construction),

(b) the cost of acquisition of all real or personal property, rights, rights-of-way, franchises, easements and interests acquired or used for such Project or portion thereof;

(c) the cost of demolishing or removing any structures on land so acquired, including the cost of acquiring any land to which the structures may be removed;

(d) any cost of borings and other preliminary investigations necessary or incident to determining the feasibility or practicability of constructing such Project and any cost necessary or desirable to satisfy conditions associated with the issuance of any permit for the construction thereof (including the costs of environmental mitigation required in connection therewith);

(e) the cost of all machinery and equipment, vehicles, materials and rolling stock;

(f) Issuance Costs;

(g) interest on Bonds and on any Reimbursement Obligation for the period prior to, during and for a period of up to one year after completion of construction as determined by the Commission, provisions for working capital, reserves for principal and interest and for extensions, enlargements, additions, replacements, renovations and improvements;

(h) the cost of architectural, engineering, environmental feasibility, financial and legal services;

(i) plans, specifications, estimates and administrative and other expenses which are necessary or incidental to the determination of the feasibility of constructing such Project or portion thereof or incidental to the obtaining of construction contracts or to the construction (including construction administration and inspection), acquisition or financing thereof and which constitute capital costs;

(j) Current Expenses, provided that, if applicable, the Trustee has received an opinion of Bond Counsel (which opinion may address either specific Current Expenses or categories of Current Expenses) to the effect that the treatment of such Current Expenses as a Cost will not adversely affect the exclusion of interest on the Bonds from gross income for federal income tax purposes;

(k) the repayment of any loan or advance for any of the foregoing;
and

(l) with respect to the use of Bond proceeds, such other costs and expenses as are permitted by the Enabling Acts at the time such Bonds are issued.

"Counsel" -- an attorney or law firm (who may be counsel for the Commission) not unsatisfactory to the Trustee.

"Credit Facility" -- any letter of credit, line of credit, standby letter of credit, indemnity or surety insurance policy or agreement to purchase a debt obligation or any similar extension of credit, credit enhancement or liquidity support obtained by the Commission from a responsible financial or insurance institution, to provide for or to secure payment of principal and purchase price of, and/or interest on Bonds pursuant to the provisions of a Supplemental Indenture under which such Bonds are issued. The use of such definition is not intended to preclude the Commission from providing the credit or liquidity support with respect to one or more series of Bonds directly rather than through a financial or insurance institution.

"Current Expenses" -- the Commission's reasonable and necessary current expenses of maintenance, repair and operation of the System, including, without limiting the generality of the foregoing, all premiums for insurance and payments into any self-insurance reserve fund, all administrative and engineering expenses relating to maintenance, repair and operation of the System, fees and expenses of the Trustee and of the Paying Agents, Policy Costs, legal expenses and any other expenses required to be paid by the Commission as shown in the Annual Operating Budget for the System.

"Debt Service Fund" -- the fund created by Section 503.

"Debt Service Reserve Fund" -- the fund created by Section 503.

"Debt Service Reserve Fund Bonds" -- shall mean the Long-Term Indebtedness specified by the Commission in this or any Supplemental Indenture that is secured by the Debt Service Reserve Fund as described in Section 508.

"Debt Service Reserve Requirement" -- the amount equal to the Maximum Annual Debt Service on account of all the Debt Service Reserve Fund Bonds.

"Defeasance Securities" --

- (a) Cash,
- (b) Government Obligations,
- (c) Government Obligations which have been stripped by the U.S. Treasury and CATS, TIGRS and similar securities,
- (d) Resolution Funding Corp. strips which have been stripped by the Federal Reserve Bank of New York,
- (e) Pre-refunded obligations of a state or municipality rated in the highest rating category by the Rating Agency, and
- (f) Obligations issued by the following agencies which are backed by the full faith and credit of the U.S.:

- (1). Farmers Home Administration
Certificates of beneficial ownership
- (2). Federal Financing Bank
- (3). General Services Administration
Participation certificates
- (4). U.S. Maritime Administration
Guaranteed Title XI financing
- (5). U.S. Department of Housing and Urban Development
Project Notes
Local Authority Bonds
New Communities Debentures - U.S. government
guaranteed debentures
- (6). U.S. Public Housing Notes and Bonds - U.S. government
guaranteed public housing notes and bonds

"Depository" -- a bank or trust company designated as such by the Commission to receive moneys under the provisions of this Indenture and approved by the Trustee, and shall include the Trustee.

"Depository Participants" -- any Person for which the Securities Depository holds Bonds as securities depository.

"DSRF Security" -- shall have the meaning set forth in Section 508.

"DTC" -- shall have the meaning given to such term in Section 209.

"Enabling Acts" -- shall have the meaning given to such term in the Recitals.

"Event of Bankruptcy" -- the filing of a petition in bankruptcy (or other commencement of a bankruptcy or similar proceedings) by or against the Commission as debtor, under Bankruptcy Law.

"Event of Default" -- those events specified in Section 801 hereof and such other events specified in any Supplemental Indentures.

"Financial Consultant" -- any financial advisor or firm of financial advisors of favorable national reputation for skill and experience in performing the duties for which a Financial Consultant is required to be employed pursuant to the provisions hereof and who is retained by the Commission as a Financial Consultant for the purposes hereof.

"Fiscal Year" -- the period commencing on the first day of June and ending on the last day of May of the following year.

"Fitch" -- Fitch, Inc., its successors and assigns, and, if such corporation shall for any reason no longer perform the functions of a securities rating agency, "Fitch" shall be deemed to refer to any other nationally recognized rating agency designated by the Commission.

"General Reserve Fund" -- the fund created by Section 503.

"Government Obligations" --

(a) direct obligations of, or obligations the principal of and interest on which are unconditionally guaranteed as to full and timely payment by, the United States of America,

(b) obligations issued by a Person controlled or supervised by and acting as an instrumentality of the United States of America, the payment of the principal of and interest on which is fully and unconditionally guaranteed as a full faith and credit obligation of the United States of America (including any securities described in clause (a) above issued or held in book-entry form in the name of the Trustee only on the books of the Department of Treasury of the United States of America),

(c) any certificates or any other evidences of an ownership interest in obligations or specified portions thereof (which may consist of specified portions of the interest thereon) of the character described in clause (a) or (b) above, which obligations are held by a bank or trust company organized and existing under the laws of the United States of America or any state thereof in the capacity of custodian,

(d) stripped obligations of interest issued by the Resolution Funding Corporation pursuant to the Financial Institutions Reform, Recovery and Enforcement Act of 1989 ("FIRREA"), the interest on which, to the extent not paid from other specified sources, is payable when due by the Secretary of the Treasury pursuant to FIRREA, and

(e) obligations of any state or political subdivision thereof or any agency or instrumentality of such a state or political subdivision, provided that cash, obligations described in clause (a), (b), (c) or (d) above, or a combination thereof have been irrevocably pledged to and deposited into a segregated escrow account for the payment when due of the principal or redemption price of and interest on such obligations, and provided further that, at the time of purchase, such obligations are rated by the Rating Service in its highest rating category.

"Historical Debt Service Coverage Ratio" -- for any period of time, the ratio determined by dividing Net Revenues for such period by the Annual Debt Service for all Applicable Long-Term Indebtedness which is Outstanding during such period.

"Historical Pro Forma Debt Service Coverage Ratio" -- for any period of time, the ratio determined by dividing Net Revenues for such period by the Maximum Annual Debt Service for all Applicable Long-Term Indebtedness then Outstanding and the Applicable Long-Term Indebtedness proposed to be issued pursuant to Section 703(b).

"Immediate Notice" -- notice transmitted by electronic means, in writing, by telecopier or other electronic means or by telephone (promptly confirmed in writing) and received by the Person to whom it was addressed.

"Indebtedness" -- any obligation or debt incurred for money borrowed.

"Interest Payment Date" -- with respect to each series of Additional Bonds, the dates which are defined as such in the Supplemental Indenture under which such Additional Bonds are issued. However, in each case, if the date specified above is not a Business Day then the Interest Payment Date shall be the Business Day next succeeding the date specified above.

"Issuance Cost" -- costs incurred by or on behalf of the Commission in connection with the issuance of Additional Bonds including, without limitation, the following: payment of financial, legal, accounting and appraisal fees and expenses, the Commission's fees and expenses attributable to the issuance of the Bonds, the cost of printing, engraving and reproduction services, fees and expenses incurred in connection with any Credit Facility and any Approved Swap Obligation, legal fees and expenses for Bond Counsel, Commission's counsel, Trustee's counsel and Underwriter's counsel relating to the issuance of the Bonds, the initial or acceptance fee of the Trustee, and all other fees, charges and expenses incurred in connection with the issuance of the Bonds and the preparation of this Indenture.

"Letter of Representations" -- the letter of representations or similar document executed by the Commission and delivered to the Securities Depository (and any amendments thereto or successor agreements) for one or more Series of Book Entry Bonds.

"Long-Term Indebtedness" -- all Indebtedness, which is not (a) Short-Term Indebtedness or (b) Subordinated Indebtedness.

"Maximum Annual Debt Service" -- at any point in time the maximum amount of Annual Debt Service on all Applicable Long-Term Indebtedness, as required by the context (e.g., whether relating to all such Applicable Long-Term Indebtedness or only specified Applicable Long-Term Indebtedness) paid or payable in the then current or any future Fiscal Year.

"Moody's" -- Moody's Investors Service, a corporation organized and existing under the laws of the State of Delaware, its successors and their assigns, and, if such corporation shall for any reason no longer perform the functions of a securities rating agency, "Moody's" shall be deemed to refer to any other nationally recognized rating agency designated by the Commission.

"Net Revenues" -- the amount by which total Revenues exceed Current Expenses for any particular period.

"Other Revenues" -- any funds received or payable to the Commission, other than Revenues, which the Commission chooses to include as security for Parity Obligations and/or Subordinated Indebtedness pursuant to a Supplemental Indenture.

"Outstanding" or "outstanding" in connection with Bonds -- all Bonds which have been authenticated and delivered under this Indenture, except:

(a) Bonds theretofore cancelled or delivered to the Trustee for cancellation under Section 208;

(b) Bonds which are deemed to be no longer Outstanding in accordance with Section 1102; and

(c) Bonds in substitution for which other Bonds have been authenticated and delivered pursuant to Article II.

In determining whether the owners of a requisite aggregate principal amount of Bonds Outstanding have concurred in any request, demand, authorization, direction, notice, consent or waiver under the provisions hereof, Bonds which are held by or on behalf of the Commission (unless all of the Outstanding Bonds are then owned by the Commission) shall be disregarded for the purpose of any such determination.

"Parity Obligations" -- includes Bonds and other obligations of the Commission owed to Secured Owners and excludes Subordinated Indebtedness.

"Parity Swap Agreement" -- shall have the meaning set forth in Section 211.

"Parity Swap Agreement Counterparty" -- the counterparty to a Parity Swap Agreement with the Commission or with the Trustee.

"Paying Agent" -- with respect to any series of Bonds, that Person appointed pursuant to Section 911 hereof to make payments to Bondholders of interest and/or principal pursuant to the terms of the Indenture, which initially shall be the Trustee.

"Permitted Investments" -- (to the extent permitted by law)

(a) Government Obligations;

(b) obligations issued or guaranteed as to full and timely payment of principal and interest by any agency or Person controlled or supervised by and acting as an instrumentality of the U.S., pursuant to authority granted by the U.S. Congress;

(c) obligations of the Governmental National Mortgage Association, Farmers Home Administration, Federal Financing Bank, Federal Housing Administration, Maritime Administration and Public Housing Authorities, provided that the full and timely payment of the principal and interest on such obligations shall be unconditionally guaranteed by the U.S.;

(d) obligations of the Federal Intermediate Credit Corporation and of the Federal National Mortgage Association;

(e) obligations of the Federal Banks for Cooperation;

(f) obligations of Federal Land Banks;

(g) obligations of Federal Home Loan Banks; provided that the obligations described in clauses (c) through (g) above shall constitute Permitted Investments only to the extent that the Rating Agency has assigned a rating to such obligations which is not lower than the highest rating assigned by such Rating Agency to any series of comparable Bonds then Outstanding;

(h) certificates of deposit of any bank, savings and loan or trust company organized under the laws of the U.S. or any state thereof, including the Trustee or any holder of the Bonds, provided that such certificates of deposit shall be fully collateralized (with a prior perfected security interest), to the extent they are not insured by the Federal Deposit Insurance Corporation, by Permitted Investments described in (a), (b), (c), (d), (e), (f) or (g) above having a market value at all times equal to the uninsured amount of such deposit;

(i) Money market funds registered under the Investment Company Act of 1940, whose shares are registered under the Securities Act of 1933, including funds for which the Trustee, its parent, its affiliates or its subsidiaries provide investment advisory or other management services, and which are rated by S&P, Moody's and Fitch in one of their two highest rating categories.

(j) investment agreements (which term, for purposes of this clause, shall not include repurchase agreements) with a Qualified Financial Institution;

(k) repurchase agreements with banks or primary government dealers reporting to the Federal Reserve Bank of New York ("Repurchasers"), including but not limited to the Trustee and any of its affiliates, provided that each such repurchase agreement results in transfer to the Trustee of legal and equitable title to, or the granting to the Trustee of a prior perfected security interest in, identified Permitted Investments described in (a), (b), (c), (d), (e), (f) or (g) above which are free and clear of any claims by third parties and are segregated in a custodial or trust account held either by the Trustee or by a third party (other than the Repurchaser) as the agent solely of, or in trust solely for the benefit of, the Trustee, provided that Government Obligations acquired pursuant to such repurchase agreements shall be valued at the lower of the then current market value of such Government Obligations or the repurchase price thereof set forth in the applicable repurchase agreement; or

(l) Bonds or notes issued by any state or municipality which are rated by S&P, Moody's and Fitch in one of their two highest rating categories.

(m) Commercial paper rated in the highest short-term, note or commercial paper Rating Category by S&P, Moody's and Fitch.

(n) Any auction rate certificates which are rated by S&P, Moody's and Fitch in one of their two highest rating categories.

(o) Corporate bonds and medium term notes rated at least "AA-" by Moody's and S&P.

(p) Asset-backed securities rated in the highest rating category by Moody's and S&P.

(q) Any other investment approved by the Commission for which confirmation is received from the Rating Agency that such investment will not adversely affect such Rating Agency's rating on such Bonds.

"Person" -- an individual, public body, a corporation, a partnership, an association, a joint stock company, a trust and any unincorporated organization.

"Pledged Bonds" -- a Bond purchased by the Trustee or Paying Agent with amounts received pursuant to a drawing under a Credit Facility and pledged to or registered in the name of a Bank which is a provider of such Credit Facility or its designee.

"Policy Costs" -- a periodic fee or charge required to be paid to maintain a DSRF Security.

"Project" -- any improvements to the System or refundings which are authorized by the Enabling Acts or which may be hereafter authorized by law.

"Projected Annual Debt Service" -- for any future period of time, shall equal the amount of Maximum Annual Debt Service on all Applicable Long-Term Indebtedness then Outstanding and on any Applicable Long-Term Indebtedness proposed to be issued.

"Projected Debt Service Coverage Ratio" -- for the two Fiscal Years following the end of any period during which interest was fully capitalized on the Applicable Long-Term Indebtedness proposed to be issued, the ratio determined by dividing Projected Net Revenues for such period by the Projected Annual Debt Service for such period.

"Projected Net Revenues" -- projected Net Revenues for the period in question, taking into account any revisions of the Tolls which have been approved by the Commission and which will be effective during such period and any additional Tolls which the Commission or the Consultant, as appropriate, estimates

will be received by the Commission following the completion of any Project then being constructed or proposed to be constructed.

"Purchase Price" -- shall mean the purchase price payment described in paragraph (a) of the definition of Tender Indebtedness.

"Qualified Financial Institution" (a) any U.S. domestic institution which is a bank, trust company, national banking association or a corporation, including the Trustee and any of its affiliates, subject to registration with the Board of Governors of the Federal Reserve System under the Bank Holding Company Act of 1956, or a member of the National Association of Securities Dealers, Inc. whose unsecured obligations or uncollateralized long-term debt obligations have been assigned a rating within the two highest rating categories by the Rating Agency or which has issued a letter of credit, contract, agreement or surety bond in support of debt obligations which have been so rated; (b) an insurance company with a claims-paying ability or a corporation whose obligations are guaranteed by an insurance company (in the form of an insurance policy) or by an insurance holding company rated in the highest rating category by the Rating Agency or whose unsecured obligations or uncollateralized long-term debt obligations have been assigned a rating within the highest rating category by the Rating Agency; or (c) any banking institution whose unsecured obligations or uncollateralized long-term debt obligations have been assigned a rating within one of the two highest rating categories by the Rating Agency.

"Rate Covenant" -- the requirement to establish and maintain a schedule of Tolls sufficient to provide the funds required pursuant to Section 501.

"Rating Agency" -- Fitch, Moody's or S&P or such other nationally recognized securities rating agency as may be so designated in writing to the Trustee by a Commission Official.

"Rating Category" -- each major rating classification established by the Rating Agency, determined without regard to gradations such as "1," "2" and "3" or "plus" and "minus."

"Rebate Fund" -- the fund created by Section 503.

"Rebate Regulations" -- the Treasury Regulations issued under Section 148(f) of the Code.

"Record Date" -- unless otherwise provided with respect to any series of Bonds in a Supplemental Indenture: (a) for Bonds on which interest is payable on the first day of a month, the fifteenth day of the immediately preceding month; or (b) for Bonds on which interest is payable on the fifteenth day of a month, the last day of the immediately preceding month. However, in each case, if the date

specified above is not a Business Day, then the Record Date shall be the Business Day next preceding the date specified above.

"Reimbursement Agreement" -- an agreement between the Commission and one or more Banks pursuant to which, among other things, such Bank or Banks issue a Credit Facility with respect to Bonds of one or more Series and the Commission agrees to reimburse such Bank or Banks for any drawings made thereunder.

"Reimbursement Obligation" -- an obligation of the Commission pursuant to a Reimbursement Agreement to repay any amounts drawn under a Credit Facility and to pay interest on such drawn amounts pursuant to such Reimbursement Agreement.

"Reserve Maintenance Fund" -- the fund created by Section 503.

"Reserve Maintenance Fund Requirement" -- the amount to be deposited to the credit of the Reserve Maintenance Fund from the Revenues of the Commission pursuant to Section 507.

"Responsible Officer" -- when used with respect to the Trustee, any officer in the corporate trust department (or any successor thereto) of the Trustee, or any other officer or representative of the Trustee customarily performing functions similar to those performed by any of such officers and also means, with respect to a particular corporate trust matter, any other officer of the Trustee to whom such matter is referred because of that officer's knowledge of and familiarity with the particular subject.

"Revenue Fund" -- the fund created by Section 503.

"Revenues" -- (a) all Tolls received by or on behalf of the Commission from the System, (b) any other sources of revenues or funds of the Commission which the Commission chooses to include in the Trust Estate pursuant to a Supplemental Indenture, and (c) the interest and income earned on any fund or account where said interest or income is required to be credited to the Revenue Fund pursuant to this Indenture. As more fully provided in Section 504, in the event the Commission receives advances or prepayments or otherwise operates or participates in a system in which funds are collected prior to the actual usage of the System, such funds shall not be deemed to be Revenues until the usage occurs or the funds are earned pursuant to the agreement under which the Commission receives such funds.

"S&P" -- Standard & Poor's, a division of McGraw-Hill, Inc., a corporation organized and existing under the laws of the State of New York, its successors and their assigns, and, if such corporation shall for any reason no longer perform the

functions of a securities rating agency, "S&P" shall be deemed to refer to any other nationally recognized securities rating agency designated by the Commission.

"Secured Owner" -- each Person who is a Bondholder of any Bonds, each Parity Swap Agreement Counterparty providing a Parity Swap Agreement, each Bank providing a Credit Facility and each Bond Insurer providing a bond insurance policy with respect to a Parity Obligation.

"Securities Depository" -- a Person that is registered as a clearing agency under Section 17A of the Securities Exchange Act of 1934 or whose business is confined to the performance of the functions of a clearing agency with respect to exempted securities, as defined in Section 3(a)(12) of such Act for the purposes of Section 17A thereof.

"Series" -- one or more Bonds issued at the same time, or sharing some other common term or characteristic, and designated as a separate series of Bonds.

"Short-Term Indebtedness" -- all Indebtedness which matures in less than 365 days and is designated as Short-Term Indebtedness pursuant to Section 703(a). In the event a Bank has extended a line of credit or the Commission has undertaken a commercial paper or similar program, only amounts actually borrowed under such line of credit or program and repayable in less than 365 days shall be considered Short-Term Indebtedness and the full amount of such commitment or program shall not be treated as Short-Term Indebtedness to the extent that such facility remains undrawn.

"Special Record Date" -- the date or dates specified in a Supplemental Indenture with respect to Additional Bonds issued under such Supplemental Indenture.

"Subordinated Indebtedness" -- Indebtedness incurred pursuant to Section 703(c).

"Supplemental Indenture" -- any supplemental indenture to (a) this Indenture, now or hereafter duly authorized and entered into in accordance with the provisions of Article XI hereof and (b) the Prior Indenture, including any supplemental indenture pursuant to which (and only for so long as) bonds are outstanding thereunder.

"Swap Agreement" -- shall have the meaning set forth in Section 211.

"System" -- what are commonly referred to as the "Main Line" and the "Northeast Extension" of the Commission and any other roads for which the Commission has operational responsibility and is collecting Tolls, unless the Commission identifies such roads in a writing addressed to the Trustee (other than

the "Main Line" and the "Northeast Extension") as not being part of the System for the purposes of this Indenture.

"Tender Indebtedness" -- any Indebtedness or portion thereof:

(a) the terms of which include (1) an option or an obligation on the part of the Secured Owner to tender all or a portion of such Indebtedness to the Commission, the Trustee, the Paying Agent or another fiduciary or agent for payment or purchase and (2) a requirement on the part of the Commission to purchase or cause to be purchased such Indebtedness or portion thereof if properly presented; and

(b) which is rated in either (1) one of the two highest long-term Rating Categories by the Rating Agency or (2i) the highest short-term, note or commercial paper Rating Category by the Rating Agency.

"Tolls" -- all rates, rents, fees, charges, fines or other income derived by the Commission from vehicular usage of the System, and all rights to receive the same.

"Trust Estate" -- shall have the meaning set forth in the "Granting Clause" hereto.

"Trustee" -- the Trustee at the time in question, whether the initial Trustee or a successor.

"U.S." -- United States of America.

"Variable Rate Indebtedness" -- any Indebtedness the interest rate on which fluctuates from time to time subsequent to the time of incurrence. Variable Rate Indebtedness may include, without limitation, (a) "auction rate" Indebtedness, that is, Variable Rate Indebtedness (1) the interest rate applicable to which (after an initial period following the issuance thereof or the conversion thereof to such an interest rate mode) is reset from time to time through an auction or bidding system and (2) which the Commission has no obligation to repurchase in connection with the resetting of the interest rate applicable thereto except to the extent proceeds are available for such purpose either from the remarketing of such Variable Rate Indebtedness or from such other sources as identified in the Supplemental Indenture pursuant to which such Variable Rate Indebtedness was issued, (b) Tender Indebtedness, (c) commercial paper Indebtedness which is intended to be reissued and refinanced periodically, or (d) other forms of Indebtedness on which the interest fluctuates or is subject to being set or reset from time to time.

SECTION 102. *Rules of Interpretation.* For purposes of this Indenture, except as otherwise expressly provided or the context otherwise requires:

(a) The words "herein," "hereof" and "hereunder" and other similar words refer to this Indenture as a whole and not to any particular Article, Section or other subdivision.

(b) The definitions in this Article are applicable whether the terms defined are used in the singular or the plural.

(c) All accounting terms which are not defined in this Indenture have the meanings assigned to them in accordance with then applicable generally accepted accounting principles.

(d) Any pronouns used in this Indenture include both the singular and the plural and cover both genders.

(e) Any terms defined elsewhere in this Indenture have the meanings attributed to them where defined.

(f) The captions or headings herein are for convenience only and in no way define, limit or describe the scope or intent, or control or affect the meaning or construction, of any provisions or sections hereof.

(g) Any references to Section numbers are to Sections of this Indenture unless stated otherwise.

(h) Any references to "principal amount" shall mean the principal amount of any Bonds plus the accreted amount on any Bond which constitutes a capital appreciation or similar bond, as more fully provided in the Supplemental Indenture pursuant to which such capital appreciation or similar bonds are issued.

ARTICLE II

AUTHORIZATION, EXECUTION,
AUTHENTICATION, REGISTRATION AND DELIVERY OF BONDS

SECTION 201. *Issuance of Bonds; Form and Terms Thereof.* Subject to the applicable provisions hereof, all Bonds shall be issued and shall contain such maturities, payment terms, interest rate provisions, redemption or prepayment features and other provisions as shall be set forth in the Supplemental Indenture providing for the issuance of such Bonds.

SECTION 202. *Limited Obligations.* The Bonds shall be limited obligations of the Commission, payable solely from the Trust Estate. The Bonds shall constitute a valid claim of the respective owners thereof against the Trust Estate, which is pledged to secure the payment of the principal of, redemption premium, if any, and interest on the Bonds, and which shall be utilized for no other purpose, except as expressly authorized in this Indenture. The Bonds shall not constitute general obligations of the Commission and under no circumstances shall the Bonds be payable from, nor shall the holders thereof have any rightful claim to, any income, revenues, funds or assets of the Commission other than those pledged hereunder as security for the payment of the Bonds.

SECTION 203. *Execution of Bonds; Payment.* The Bonds shall be signed by the manual or facsimile signatures of the Governor of the Commonwealth of Pennsylvania and the Chairman of the Commission and attested by the manual or facsimile signatures of the Secretary and Treasurer of the Commission. The Bonds may bear the seal of the Commission or a facsimile thereof affixed to or imprinted on the Bonds. In case any officer whose signature or a facsimile of whose signature shall appear on any Bond shall cease to be such officer before the delivery of such Bond, such signature or facsimile shall nevertheless be valid and sufficient for all purposes as if such officer had remained in office until such delivery.

The principal of, premium, if any, and interest on the Bonds shall be payable in any currency of the U.S. which, on the respective dates of payment thereof, is legal tender for the payment of public and private debts. The principal of all Bonds shall be payable at the designated trust office of the Trustee, and payment of the interest on each Bond shall be made on each Interest Payment Date to the Person appearing on the registration books of the Bond Registrar as of the Record Date as the registered owner thereof, by check or draft mailed to such registered owner at his address as it appears on such registration books. However, if and to the extent that the Commission defaults on the payment of interest due on an Interest Payment Date, such defaulted interest shall be paid to those Persons who are the registered owners as of the Special Record Date on a payment date established by the Trustee, notice of which shall have been mailed to those Persons who are the

registered owners as of the Special Record Date on such date or dates established in the Supplemental Indenture under which such Bonds are issued.

SECTION 204. *Authentication of Bonds.* The Bonds shall bear a certificate of authentication to the effect that the Trustee certifies that such Bond is one of the Bonds described in the Indenture referred to therein, duly executed by the Trustee. The Trustee shall authenticate each Bond with the manual signature of a Responsible Officer of the Trustee, but it shall not be necessary for the same Responsible Officer to authenticate all of the Bonds of a Series. Only such authenticated Bonds shall be entitled to any right or benefit under this Indenture. Such certificate on any Bond issued hereunder shall be conclusive evidence that the Bond has been duly issued and is secured by the provisions hereof.

SECTION 205. *Registration of Transfer and Exchange of Bonds; Persons Treated as Bondholders.* The Trustee shall act as initial bond registrar (the "Bond Registrar") and in such capacity shall maintain a bond register (the "Bond Register") for the registration and transfer of Bonds. Upon surrender of any Bonds at the designated office of the Trustee, as the Bond Registrar, together with an assignment duly executed by the current Bondholder of such Bonds or such Bondholder's duly authorized attorney or legal representative in such form as shall be satisfactory to the Trustee, such Bonds may, at the option of the Bondholder, be exchanged for an equal aggregate principal amount of Bonds of the same Series and maturity, of Authorized Denominations and bearing interest at the same rate and in the same form as the Bonds surrendered for exchange, registered in the name or names designated on the assignment; provided the Trustee is not required to exchange or register the transfer of Bonds after the giving of notice calling such Bond for redemption, in whole or in part. The Commission shall execute and the Trustee shall authenticate any Bonds whose execution and authentication is necessary to provide for exchange of Bonds pursuant to this Section and the Commission may rely on a representation from the Trustee that such execution is required.

The Trustee may make a charge to any Bondholder requesting such exchange or registration in the amount of any tax or other governmental charge required to be paid with respect thereto and the Commission may charge such amount as it deems appropriate for each new Bond delivered upon such exchange or transfer, which charge or charges shall be paid before any new Bond shall be delivered.

Prior to due presentment for registration of transfer of any Bond, the Trustee shall treat the Person shown on the Bond Register as owning a Bond as the Bondholder and the Person exclusively entitled to payment of principal thereof, redemption premium, if any, and interest thereon and, except as otherwise expressly provided herein, the exercise of all other rights and powers of the owner thereof, and neither the Commission, the Trustee nor any agent of the Commission or the Trustee shall be affected by notice to the contrary.

SECTION 206. *Temporary Bonds.* Prior to the preparation of definitive Bonds of a Series, the Commission may issue temporary Bonds in registered form and in such denominations as the Commission may determine but otherwise in substantially the form provided for definitive Bonds of such Series with appropriate variations, omissions and insertions. The Commission shall promptly prepare, execute and deliver to the Trustee before the first Interest Payment Date for such Bonds, definitive Bonds and, upon presentation and surrender of Bonds in temporary form, the Trustee shall authenticate and deliver in exchange therefor definitive Bonds of the same maturity for the same aggregate principal amount. Until exchanged for definitive Bonds, Bonds in temporary form shall be entitled to the lien and benefit of this Indenture.

SECTION 207. *Mutilated, Lost or Destroyed Bonds.* If any Bond has been mutilated, lost or destroyed, the Commission shall execute, and the Trustee shall authenticate and deliver to the Bondholder, a new Bond of like date and tenor in exchange and substitution for, and upon cancellation of, such mutilated Bond or in lieu of and in substitution for such lost or destroyed Bond but only if the Bondholder has paid the reasonable expenses and charges of the Commission and the Trustee in connection therewith and, in the case of a lost or destroyed Bond, (a) filed with the Trustee evidence satisfactory to the Trustee that such Bond was lost or destroyed and (b) furnished to the Trustee and the Commission indemnity satisfactory to each. If any such Bond has matured or been called for redemption and is payable, instead of issuing a new Bond the Trustee may pay the same without issuing a replacement Bond.

If, after the delivery of such replacement Bond, the original Bond in lieu of which such replacement Bond was issued is presented for payment or registration, the Trustee shall seek to recover such replacement Bond from the Person to whom it was delivered or any Person taking therefrom and shall be entitled to recover from the security or indemnity provided therefor to the extent of any loss, damage, cost or expense incurred by the Trustee or the Commission in connection therewith.

SECTION 208. *Cancellation and Disposition of Bonds.* The Commission may deliver Bonds to the Trustee for cancellation at any time and for any reason and the Trustee is hereby authorized to cancel such Bonds. All Bonds that have been paid (whether at maturity, by acceleration or upon redemption) or delivered to the Trustee for cancellation shall not be reissued. Unless otherwise directed by the Commission, the Trustee shall treat such Bonds in accordance with its document retention policies or as may be directed by state law.

SECTION 209. *Securities Depository Provisions.* Unless otherwise provided in a Supplemental Indenture, Bonds shall be Book Entry Bonds. All Book Entry Bonds shall be registered in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC") or any successor Securities Depository. The Commission

and the Trustee acknowledge that they have executed and delivered a Letter of Representations with DTC. All payments of principal of, redemption premium, if any, and interest on the Book Entry Bonds and all notices with respect thereto, including notices of full or partial redemption, shall be made and given at the times and in the manner set out in the Letter of Representations. The terms and provisions of the Letter of Representations shall govern in the event of any inconsistency between the provisions of this Indenture and the Letter of Representations. The Letter of Representations may be amended without Bondholder consent.

Except to the extent provided in a Supplemental Indenture, the book-entry registration system for all of the Book Entry Bonds may be terminated and certificates delivered to and registered in the name of the Beneficial Owners, under either of the following circumstances:

(a) DTC notifies the Commission and the Trustee that it is no longer willing or able to act as Securities Depository for the Book Entry Bonds and a successor Securities Depository for the Book Entry Bonds is not appointed by the Commission prior to the effective date of such discontinuation; or

(b) The Commission determines that continuation of the book-entry system through DTC (or a successor Securities Depository) is not in the best interest of the Commission.

In the event a successor Securities Depository is appointed by the Commission, the Book Entry Bonds will be registered in the name of such successor Securities Depository or its nominee. In the event certificates are required to be issued to Beneficial Owners, the Trustee and the Commission shall be fully protected in relying upon a certificate of DTC or any DTC participant as to the identity of and the principal amount of Book Entry Bonds held by such Beneficial Owners.

The Beneficial Owners of Bonds will not receive physical delivery of certificates except as provided herein. For so long as there is a Securities Depository for Bonds, all of such Bonds shall be registered in the name of the nominee of the Securities Depository, all transfers of beneficial ownership interests in such Bonds will be made in accordance with the rules of the Securities Depository, and no investor or other party purchasing, selling or otherwise transferring beneficial ownership of such Bonds is to receive, hold or deliver any certificate. The Commission and the Trustee shall have no responsibility or liability for transfers of beneficial ownership interests in such Bonds.

The Commission and the Trustee will recognize the Securities Depository or its nominee as the Bondholder of Book Entry Bonds for all purposes, including receipt of payments, notices and voting; provided the Trustee may recognize votes

by or on behalf of Beneficial Owners as if such votes were made by Bondholders of a related portion of the Bonds when such votes are received in compliance with an omnibus proxy of the Securities Depository or otherwise pursuant to the rules of the Securities Depository or the provisions of the Letter of Representations or other comparable evidence delivered to the Trustee by the Bondholders or as provided in Sections 910 and 1210 of this Indenture.

With respect to Book Entry Bonds, the Commission and the Trustee shall be entitled to treat the Person in whose name such Bond is registered as the absolute owner of such Bond for all purposes of this Indenture, and neither the Commission nor the Trustee shall have any responsibility or obligation to any Beneficial Owner of such Book Entry Bond. Without limiting the immediately preceding sentence, neither the Commission nor the Trustee shall have any responsibility or obligation with respect to (a) the accuracy of the records of any Securities Depository or any other Person with respect to any ownership interest in Book Entry Bonds, (b) the delivery to any Person, other than a Bondholder, of any notice with respect to Book Entry Bonds, including any notice of redemption or refunding, (c) the selection of the particular Bonds or portions thereof to be redeemed or refunded in the event of a partial redemption or refunding of part of the Bonds Outstanding or (d) the payment to any Person, other than a Bondholder, of any amount with respect to the principal of, redemption premium, if any, or interest on Book Entry Bonds.

SECTION 210. *Additional Bonds.* The Commission will not issue or incur any other Indebtedness having a parity lien on the Trust Estate except for Additional Bonds issued pursuant to this Section and other Parity Obligations. Additional Bonds may be issued and the Trustee shall authenticate and deliver such Additional Bonds when there have been filed with the Trustee the following:

(a) A copy certified by a Commission Official of the resolution or resolutions of the Commission authorizing (1) the execution and delivery of a Supplemental Indenture providing for, among other things, the date, rate or rates of interest on, interest payment dates, maturity dates and redemption provisions of such Additional Bonds, and (2) the issuance, sale, execution and delivery of the Additional Bonds;

(b) An original executed counterpart of the Supplemental Indenture;

(c) An opinion or opinions of Bond Counsel, addressed to the Commission and the Trustee, to the effect that (1) issuance of the Additional Bonds is permitted under this Indenture, (2) each of the Supplemental Indenture and the Additional Bonds has been duly authorized, executed and delivered and is a valid, binding and enforceable obligation of the Commission, subject to bankruptcy, equitable principles and other standard legal opinion exceptions and (3) subject to

the last paragraph of this Section, interest on the Additional Bonds is not included in gross income for federal income tax purposes under the Code;

(d) A request and authorization of the Commission, signed by a Commission Official, to the Trustee to authenticate and deliver the Additional Bonds to such Person or persons named therein after confirmation of payment to the Trustee for the account of the Commission of a specified sum (which may include directions as to the disposition of such of such sum);

(e) A certificate of the Commission, signed by a Commission Official, that the Commission is not in default under this Indenture and evidence satisfactory to the Trustee that, upon issuance of the Additional Bonds, amounts will be deposited in the Funds hereunder adequate for the necessary balances therein after issuance of the Additional Bonds (including an amount sufficient to satisfy the Debt Service Reserve Requirement if the Additional Bonds constitute Debt Service Reserve Fund Bonds);

(f) A certificate of the Commission, signed by a Commission Official, identifying the Additional Bonds as Short-Term Indebtedness, Long-Term Indebtedness or Subordinated Indebtedness and demonstrating with reasonable detail that the provisions of Section 703(a), (b) or (c), as applicable, have been met for the issuance of such Additional Bonds; and

(g) Such further documents, moneys and securities as are required by the provisions of the Supplemental Indenture.

Anything in this Indenture to the contrary notwithstanding, Additional Bonds may bear interest which is included in gross income for federal income tax purposes under the Code, in which event provisions herein requiring or referencing the exclusion of interest on Bonds of gross income for federal income tax purposes may be ignored or modified, as appropriate, as set forth in an opinion of Bond Counsel.

SECTION 211. *Approved and Parity Swap Obligations.* The Commission may enter into one or more contracts having an interest rate, currency, cash-flow, or other basis desired by the Commission (a "Swap Agreement"), including, without limitation, interest rate swap agreements, currency swap agreements, forward payment conversion agreements, futures contracts, contracts providing for payments based on levels of or changes in interest rates, currency exchange rates, stock or other indices, or contracts to exchange cash flows or a series of payments, and contracts including, without limitation, interest rate floors or caps, options, puts or calls to hedge payment, currency rate, spread or similar exposure. In the event the Commission wishes the payments to be made and received by the Commission under the Swap Agreement to be taken into account in any calculation of Annual Debt Service hereunder, the Commission shall file with the Trustee the

following on or before entering into the Swap Agreement (in which event, such Swap Agreement shall constitute an "Approved Swap Agreement"):

- (a) A copy certified by a Commission Official of the resolution or resolutions of the Commission authorizing the execution and delivery of the Swap Agreement (no Supplemental Indenture being required unless the Commission determines it to be necessary or appropriate);
 - (b) An original executed counterpart of the Swap Agreement;
 - (c) An opinion of Bond Counsel addressed to the Commission and to the Trustee, to the effect that execution of the Swap Agreement is permitted under the laws of the Commonwealth and will not adversely affect the exclusion from gross income from interest on any Bonds for federal income tax purposes; provided that if the Swap Agreement relates to Bonds being issued and the Swap Agreement is entered into prior to the issuance of such Bonds, the portion of the opinion of Bond Counsel referring to tax-exempt status of the Bonds need not be delivered until such Bonds are issued;
 - (d) A certificate of the Commission, signed by a Commission Official, that the Commission is not under default under this Indenture;
 - (e) Evidence that the execution of the Swap Agreement will not result in a reduction or withdrawal of the rating then assigned to any Bonds by the Rating Agency;
 - (f) Evidence that the provisions of Section 703(d) have been met;
- and
- (g) Such further documents as are required by the Swap Agreement or Bond Counsel.

In the event the Commission wishes to enter into an Approved Swap Agreement and to have its obligations thereunder be on parity with all Bonds and other Parity Obligations, it shall file with the Trustee the items set forth above, together with a supplemental indenture granting such parity position (in which event, such Swap Agreement shall constitute a "Parity Swap Agreement"). Upon entering into a Parity Swap Agreement, unless otherwise provided in the supplemental indenture, the Commission shall pay to the Trustee for deposit into the Interest Account the net amount payable, if any, to the Parity Swap Agreement Counterparty as if such amounts were additional amounts of interest due; and the Trustee shall pay on behalf of the Commission to the Parity Swap Agreement Counterparty, to the extent required under the Parity Swap Agreement, amounts deposited in the Interest Account. Net amounts received by the Commission or the Trustee from the counterparty pursuant to a Parity Swap Agreement shall be

deposited to the credit of the Interest Account or to such other account as designated by a Commission Official.

Amounts paid by or to the Commission pursuant to Approved Swap Agreements which do not constitute Parity Swap Agreements shall not be required to be made through the Trustee as described in the preceding paragraph (but shall be taken into account in calculation of Annual Debt Service as provided in the definition of such term).

SECTION 212. *Conversions of Variable Rate Indebtedness to Fixed Rate Indebtedness.* The Commission may convert Variable Rate Indebtedness to a fixed rate if permitted pursuant to the terms thereof and if the Commission was in compliance with the Rate Covenant for the most recently completed Fiscal Year. If the Commission did not meet the Rate Covenant for such Fiscal Year, the Commission must treat the proposed conversion as if it constituted the issuance of Additional Bonds by meeting the requirements set forth in Section 703(b) (computing the Annual Debt Service with respect to such Variable Rate Indebtedness proposed to be converted as bearing interest at the Bond Buyer Index or such other rate as identified by a Financial Consultant as being more appropriate under the circumstances).

ARTICLE III

REDEMPTION OF BONDS

SECTION 301. *Redemption of Bonds.* The Bonds of any Series issued under the provisions of this Indenture shall be subject to redemption, in whole or in part, and at such times and prices as may be provided in the Supplemental Indenture pursuant to which such Bonds are issued.

If less than all of the Bonds are called for redemption, they shall be redeemed in such order of maturity as provided in the Supplemental Indenture, and by lot within any maturity (provided, however, that if an Event of Default has occurred and is continuing, any Bonds called for redemption shall be redeemed in proportion by maturity and within maturities by lot), subject to selection by the Trustee as provided below. The portion of any Bond to be redeemed shall be an Authorized Denomination or any multiple thereof and 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 the minimum Authorized Denomination. 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 Bondholder upon the surrender thereof. If for any reason the principal amount of Bonds called for redemption would result in a redemption of Bonds less than the Authorized Denomination, the Trustee, to the extent possible within the principal amount of Bonds to be redeemed, is hereby authorized to adjust the selection of Bonds for such purpose in order to minimize any such redemption. Notwithstanding the foregoing, the Securities Depository for Book Entry Bonds shall select the Bonds for redemption within particular maturities according to its stated procedures.

SECTION 302. *Notice of Redemption.*

(a) When Bonds (or portions thereof) are to be redeemed, the Commission shall give or cause to be given notice of the redemption of the Bonds to the Trustee no later than 15 days prior to the last date on which notice of such redemption can be given or such shorter time as may be acceptable to the Trustee. In the case of an optional redemption, the notice may state (1) that it is conditioned upon the deposit of moneys, in an amount equal to the amount necessary to effect the redemption, with the Trustee no later than the redemption date or (2) that the Commission retains the right to rescind such notice at any time prior to the scheduled redemption date if the Commission delivers a certificate of a Commission Official to the Trustee instructing the Trustee to rescind the redemption notice (in either case, a "Conditional Redemption"), and such notice and optional redemption shall be of no effect if such moneys are not so deposited or if the notice is rescinded as described in subsection (d) of this Section.

The Trustee, at the expense of the Commission, shall send notice of any redemption, identifying the Bonds to be redeemed, the redemption date and the method and place of payment and the information required by subsection (b) of this Section, by first class mail to each holder of a Bond called for redemption to the holder's address listed on the Bond Register. Such notice shall be sent by the Trustee by first class mail between 30 and 60 days prior to the scheduled redemption date unless a different time period is provided in the Supplemental Indenture for such Bonds. With respect to Book Entry Bonds, if the Trustee sends notice of redemption to the Securities Depository pursuant to the Letter of Representations, the Trustee shall not be required to give the notice set forth in the immediately preceding sentence. If notice is given as stated in this paragraph (a), failure of any Bondholder to receive such notice, or any defect in the notice, shall not affect the redemption or the validity of the proceedings for the redemption of the Bonds.

(b) In addition to the foregoing, the redemption notice shall contain with respect to each Bond being redeemed, (1) the CUSIP number, (2) the date of issue, (3) the interest rate, (4) the maturity date, and (5) any other descriptive information determined by the Trustee to be needed to identify the Bonds. If a redemption is a Conditional Redemption, the notice shall so state. The Trustee also shall send each notice of redemption to (i) any Rating Service then rating the Bonds to be redeemed; (ii) all of the registered clearing agencies known to the Trustee to be in the business of holding substantial amounts of bonds of a type similar to the Bonds; and (iii) one or more national information services that disseminate notices of redemption of bonds such as the Bonds, such services to be identified by the Trustee.

(c) On or before the date fixed for redemption, subject to the provisions of subsections (a) and (d) of this Section, moneys shall be deposited with the Trustee to pay the principal of, redemption premium, if any, and interest accrued to the redemption date on the Bonds called for redemption. Upon the deposit of such moneys, unless the Commission has given notice of rescission as described in subsection (d) of this Section, the Bonds shall cease to bear interest on the redemption date and shall no longer be entitled to the benefits of this Indenture (other than for payment and transfer and exchange) and shall no longer be considered Outstanding.

(d) Any Conditional Redemption may be rescinded in whole or in part at any time prior to the redemption date if the Commission delivers a certificate of a Commission Official to the Trustee instructing the Trustee to rescind the redemption notice. The Trustee shall give prompt notice of such rescission to the affected Bondholders. Any Bonds subject to Conditional Redemption where redemption has been rescinded shall remain Outstanding, and the rescission shall not constitute an Event of Default. Further, in the case of a Conditional

Redemption, the failure of the Commission to make funds available in part or in whole on or before the redemption date shall not constitute an Event of Default.

SECTION 303. *Purchase of Bonds at Any Time.* The Trustee, upon the written request of the Commission, shall purchase Bonds as specified by the Commission in the open market at a price not exceeding the price specified by the Commission. Such purchase of Bonds shall be made with funds available under this Indenture or provided by the Commission in such written request. Upon purchase by the Trustee, such Bonds shall be treated as delivered for cancellation pursuant to Section 208. Nothing in this Indenture shall prevent the Commission from purchasing Bonds on the open market without the involvement of the Trustee and delivering such Bonds to the Trustee for cancellation pursuant to Section 208. Bonds purchased pursuant to this Section which are subject to a mandatory sinking fund redemption schedule may be credited against future mandatory sinking fund redemption payments. The principal amount of Bonds to be redeemed by optional redemption under this Indenture may be reduced by the principal amount of Bonds purchased by the Commission and delivered to the Trustee for cancellation at least fifteen (15) days prior to the last date on which the notice of Redemption can be mailed.

SECTION 304. *Costs of Redemptions.* The payment of the necessary costs and expenses of such redemptions, including, without limiting the generality of the foregoing, all reasonable legal fees, costs of advertisements, printing costs, brokerage charges and charges of the Trustee, if any, incident to such redemption, shall be payable by the Commission from moneys in the General Reserve Fund or from such other source as is identified in a certificate of a Commission Official.

ARTICLE IV

CONSTRUCTION FUND

SECTION 401. *Construction Fund.* There is hereby created a special fund known as the "Construction Fund", which shall be held in trust by the Trustee. Money shall be deposited to the Construction Fund pursuant to the provisions of Article II and from any other sources identified by the Commission.

Payment of the costs of the construction portion of any Project shall be made from the Construction Fund. A special account shall be created and identified for each such construction project, although funds, at the written direction of the Commission, may be transferred from one such account in the Construction Fund to another account in such Fund.

SECTION 402. *Payments From Construction Fund.* Before any payment shall be made from the Construction Fund, the Commission shall file with the Trustee a requisition, signed by the Chief Engineer (or his designee) and a Commission Official stating in respect of each payment to be made:

- (a) the name of the Person, firm or corporation to whom payment is due,
- (b) the amount to be paid, and
- (c) the purpose for which the obligation to be paid was incurred;
- (d) each item is a proper charge against the Construction Fund and has not been paid, and
- (e) such requisition contains no item representing payment on account of any retainage which the Commission is at the date of such certificate not entitled to release.

Upon receipt of each requisition, the Trustee shall transfer from the Construction Fund to the Commission funds equal to the total of the amounts to be paid as set forth in such requisition and the Commission covenants to apply such funds to the payments described in the requisition.

SECTION 403. *Trustee to Retain Requisitions.* All requisitions received by the Trustee pursuant to Section 402 may be relied upon by and shall be retained in the possession of the Trustee for a period of five (5) years, subject at all times to the inspection of the Commission, its agents and representatives, and any other Person authorized by a certificate of a Commission Official.

SECTION 404. *Transfer of Excess Moneys in Construction Fund.* If at any time a Commission Official shall file with the Trustee a certificate stating that the cost of a Project has been finally determined and that the funds remaining in the account established for such Project exceed the remaining costs of the Project, then an amount equal to such excess shall be transferred to such fund or account as directed in the certificate, provided the same is accompanied by an opinion of Bond Counsel to the effect that such transfer or and/or application will not adversely effect the tax-exempt status of the interest of the applicable Bonds.

ARTICLE V

TOLLS, REVENUES AND FUNDS

SECTION 501. *Rate Covenant.*

(a) The Commission covenants that at all times it will establish and maintain schedules of Tolls for traffic over the System so that the Net Revenues of the System in each Fiscal Year will at all times be at least sufficient to provide funds in an amount not less than

(1) the greater of:

(i) one hundred thirty percent (130%) of the Annual Debt Service for such Fiscal Year on account of all Applicable Long-Term Indebtedness then outstanding under the provisions of this Indenture; or

(ii) one hundred percent (100%) of the Maximum Annual Debt Service on all Applicable Long-Term Indebtedness, plus (A) the amount of required transfers from the Revenue Fund to the credit of the Reserve Maintenance Fund pursuant to the Annual Capital Budget, and (B) an amount sufficient to restore any deficiency in the Debt Service Reserve Fund within an eighteen (18) month period;

plus

(2) the amount of any Short-Term Indebtedness outstanding pursuant to Section 703(a) for more than 365 consecutive days.

In addition, the amount of Net Revenues in excess of the sum of the amounts set forth in clauses (1) and (2), together with Other Revenues pledged to the payment of Subordinated Indebtedness, shall be sufficient to pay the Annual Debt Service for any Subordinated Indebtedness.

The foregoing covenant is referred to herein as the "Rate Covenant".

(b) The Commission's failure to meet the Rate Covenant shall not constitute an Event of Default under this Indenture if (1) no Event of Default

occurred under Sections 801(a) or (b) as a result of such failure and (2) the Commission promptly after determining that the Rate Covenant was not met retains a Consultant at the expense of the Commission to make written recommendations as to appropriate revisions to the schedules of Tolls necessary or appropriate to meet the Rate Covenant and advises the Trustee in writing of such retention. Anything in this Indenture to the contrary notwithstanding, if the Commission shall comply with the recommendations of the Consultant in respect of Tolls, it will not constitute an Event of Default under the provisions of this Indenture if the Commission fails to meet the Rate Covenant during the succeeding Fiscal Year as long as no Event of Default has occurred under Sections 801(a) or (b). If the Commission does not comply with the recommendations of the Consultant in respect of Tolls, the Trustee may, and upon the request of the holders of not less than twenty-five per centum (25%) in principal amount of the Bonds then outstanding and upon being indemnified to its satisfaction shall, institute and prosecute in a court of competent jurisdiction any appropriate action to compel the Commission to revise the schedules of Tolls. The Commission covenants that it will adopt and charge Tolls in compliance with any final order or decree entered in any such proceeding.

In the event that the Consultant shall fail to file with the Commission such recommendations in writing within sixty (60) days after its retention by the Commission, the Trustee may designate and appoint a different Consultant at the expense of the Commission to make recommendations as to an adjustment of the schedules of Tolls, which recommendations shall be reported in writing to the Commission and to the Trustee within sixty (60) days after such retention. Such written report shall for all purposes be considered to be the equivalent of and substitute for the recommendations of the Consultant retained by the Commission.

In preparing its recommendations, the Consultant may rely upon written estimates of Revenues prepared by the other Consultants of the Commission. Copies of such written estimates signed by such Consultants shall be attached to such recommendations. The Commission covenants that promptly after receipt of such recommendations and the adoption of any revised schedules of Tolls, certified copies thereof will be filed with the Trustee.

SECTION 502. *Uniformity of Tolls.*

(a) Classifications. The Commission covenants that Tolls will be classified in a reasonable way to cover all traffic, so that the Tolls may be uniform in application to all traffic falling within any reasonable class regardless of the status or character of any Person participating in the traffic; provided that the foregoing shall not be interpreted to restrict the Commission's right, in its discretion in connection with its management of the System, to establish and maintain flexible Toll schedules including, but not limited to, provisions for, utilizing or otherwise taking into account, peak and nonpeak pricing, introductory

pricing, weight, method of payment, frequency, carpooling, electronic and other Toll collection technologies, traffic management systems, and similar classifications.

Any change in classification which results in a reduced Toll or any new classification shall be reviewed by the Commission with a Consultant before implementing the same unless the same is temporary (e.g., having a duration of less than one year). In addition, in the event the Commission did not meet the Rate Covenant for the preceding Fiscal Year, any classification resulting in a reduced Toll or a new classification shall be subject to a Consultant approving the same before it is implemented. In all events, the Commission shall not make a change in classification or any new classification which would cause the Commission to fail to meet the Rate Covenant.

(b) Free Passage or Reduced Tolls. The Commission shall not grant free passage or reduced tolls within a class, except, in its discretion, it may do so:

(1) Through the use of commutation or other tickets or privileges based upon frequency or volume,

(2) For operational or safety reasons including, but not limited to, reasons arising out of a work stoppage, work slowdown or work action,

(3) To members, officers and employees of the Commission in the discharge of their official duties,

(4) For use by the Army, Air Force, Navy, Coast Guard, Marine Corps or militia or any branch thereof in time of war or other emergency,

(5) For use by the Pennsylvania State Police or by consultants, contractors or agents of the Commission where the Toll ultimately will be repaid directly or indirectly by the Commission.

Any reduced Toll or grant of free passage shall be reviewed by the Commission with a Consultant before implementing the same unless the same is temporary (e.g., having a duration of less than one year). In addition, in the event the Commission did not meet the Rate Covenant for the preceding Fiscal Year, any reduced Toll or free passage shall be subject to a Consultant approving the same before it is implemented by the Commission unless the circumstances require immediate implementation, in which event the Commission shall obtain such approval promptly following implementation. In all events, the Commission shall not reduce Tolls or grant free passage if it would cause the Commission to fail to meet the Rate Covenant.

(c) The Commission's covenant as to uniformity of tolls shall not be construed as requiring that Tolls for any given class of traffic shall be identical in amount throughout the entire System for trips of approximately identical lengths. The Commission may fix and place in effect schedules of Tolls for any given class of traffic wherein the Tolls charged for travel on a given section of the System shall be different from the Tolls charged on another section of the System notwithstanding the fact that both of said sections shall be of identical or approximately identical length.

SECTION 503. *Creation of Funds.* In addition to the Construction Fund created pursuant to Section 401 and any other funds created by Supplemental Indentures, the following funds are hereby created and amounts deposited therein shall be held in trust by the Trustee until applied as hereinafter directed:

- (a) Revenue Fund;
- (b) Debt Service Fund;
- (c) Debt Service Reserve Fund;
- (d) Reserve Maintenance Fund;
- (e) General Reserve Fund; and
- (f) Rebate Fund.

SECTION 504. *Revenue Fund; Agreements With Other Turnpikes.*

(a) The Commission covenants that all Revenues will be deposited daily, as far as practicable, with the Trustee or in the name of the Trustee with a Depositary or Depositaries, to the credit of the Revenue Fund.

(b) To the extent now or hereafter authorized by law, the Commission may enter into agreements with any commission, authority or other similar legal body operating a turnpike, whether or not connected to the System, (1) with respect to the establishment of combined schedules of Tolls and/or (2) for the collection and application of Tolls charged for trips over all or a portion of both turnpikes combined, which on the basis of the Revenues to be received by any such agreement will result in the receipt by the Commission of its allocable portion of such Tolls (less fees and expenses associated with such arrangement). To the extent now or hereafter authorized by law, the Commission also may enter into agreements with other Persons with respect to the collection of Tolls or advances or prepayment of Tolls charged for trips over all or a portion of the System, which on the basis of the Revenues to be received by any such agreement will result in the receipt by the Commission of the appropriate Tolls for such trips. Unless approved

by a Consultant, no agreement establishing a combined schedule of Tolls shall restrict the ability of the Commission to implement an increase in its Tolls at least annually.

Amounts received by the Commission from such other commission, authority or other similar legal body or Person, in accordance with such agreements, shall be deposited in the Revenue Fund when they constitute Revenues. Such amounts may be held with one of the depositaries noted in Subsection 504(a) until they constitute Revenues. Amounts received by the Commission and deposited in the Revenue Fund which are payable by the Commission to such other commission, authority or other similar legal body or Person, in accordance with any such agreements, shall be withdrawn by the Trustee from the Revenue Fund upon delivery to the Trustee of a certificate of a Commission Official that such withdrawal is required pursuant to the terms of an agreement entered into pursuant to this Section and shall be paid by the Trustee in accordance with directions contained in such certificate. Any agreement entered into pursuant to this Section shall be made available to the Trustee upon its request.

(c) Except as otherwise provided in this Section, transfers from the Revenue Fund shall be made to the following funds and in the following order of priority:

- (1) Rebate Fund;
- (2) Operating Account;
- (3) Debt Service Fund;
- (4) Reserve Maintenance Fund;
- (5) Debt Service Reserve Fund; and

(6) General Reserve Fund (after retaining such funds in the Revenue Fund as are identified in the certificate described in Section 509).

SECTION 505. *Operating Account.* The Commission shall establish an account known as the "Operating Account" which shall be held by the Commission in the name of the Commission outside of the Indenture until applied as hereinafter directed. The Trustee shall transfer from the Revenue Fund on or before the last Business Day of each month to the credit of the Operating Account an amount equal to (a) the amount shown by the Annual Operating Budget to be necessary to pay Current Expenses for the ensuing month and (b) an amount certified by a

Commission Official as being reasonably necessary to pay Current Expenses which are expected for such month, after taking into account the amount on deposit in the Operating Account (including the amount described in clause (a), it being recognized that the Annual Operating Budget may have to be amended accordingly.

In making payments from the Operating Account, the Commission shall be deemed to be certifying that obligations in the stated amounts have been incurred by the Commission and that each item thereof was properly incurred in maintaining, repairing and operating the System, and has not been paid previously.

SECTION 506. *Debt Service Fund.* There are hereby created two separate accounts in the Debt Service Fund to be known as the "Interest Account" and the "Principal Account."

The Trustee and the Commission may create such additional accounts in the Debt Service Fund pursuant to a Supplemental Indenture as they deem necessary or appropriate, including, but not limited to, (a) an account into which drawings on a Credit Facility are to be deposited and from which principal (including redemption price) and Purchase Price of and interest on the Series of Bonds secured by such Credit Facility are to be paid (and upon such payment, amounts on deposit in the Principal and Interest Accounts for such Bonds shall be used to repay the provider of the Credit Facility for such payments), and (b) an account into which payments to the Commission to any Parity Swap Counterparty are to be deposited and from which payments to such Parity Swap Counterparty are to be paid.

On or before the last Business Day preceding each Interest Payment Date or principal (or sinking fund redemption) payment date or such other day as set forth in a Supplemental Indenture, after making the deposits to the Operating Account pursuant to Section 505 or identified in a certificate of a Commission Official, the Trustee shall withdraw from the Revenue Fund and deposit to the applicable Account in the Debt Service Fund (or to a Series Credit Facility Fund in lieu of either of the foregoing) the amounts due on any Parity Obligation.

The moneys in the Interest and Principal Accounts shall be held by the Trustee in trust for the benefit of the Bonds, to the extent the foregoing are payable from such accounts, and, to said extent and pending application, shall be subject to a lien and charge in favor of the Owners of the Bonds until paid out or transferred as hereinafter provided. There shall be withdrawn from the Interest Account (and any available capitalized interest) and the Principal Account from time to time and set aside or deposited with the Trustee sufficient money for paying the interest on and the principal of and premium on the Bonds as the same shall become due, except to the extent such interest, principal or other amounts are payable from a fund or account other than the Debt Service Fund as provided in any Supplemental Indenture.

If at the time the Trustee is required to make a withdrawal from the Debt Service Fund the moneys therein shall not be sufficient for such purpose, the Trustee shall withdraw the amount of such deficiency from the moneys on deposit in the following funds or accounts and transfer the same to the Debt Service Fund in the following order: the Debt Service Reserve Fund, the General Reserve Fund, and the Reserve Maintenance Fund.

SECTION 507. *Reserve Maintenance Fund.* In each Fiscal Year, after first having made the deposits provided by Sections 504, 505 and 506 hereof, the Trustee shall transfer from the Revenue Fund on or before the last Business Day of each month to the credit of the Reserve Maintenance Fund the amount shown in the Annual Capital Budget for the ensuing month.

Except as provided in Sections 506 and 707, or except in case of an emergency, as characterized in a certificate signed by a Commission Official stating that the moneys to the credit of the Operating Account are insufficient to meet such emergency, moneys in the Reserve Maintenance Fund shall be disbursed to pay current capital expenditures shown in the Annual Capital Budget for the System, plus the cost of unusual or extraordinary maintenance (as determined solely by the Commission) and shall be disbursed only for such purposes, except to the extent hereinafter provided. Such purposes shall include, but not be limited to, paying the cost of constructing, improving and reconstructing improvements and betterments to all parts of the System now or hereafter open to vehicular traffic, including, without limitation, additional lanes, tunnels, interchanges, toll plazas, bridges and connecting roads, transit interface facilities and any other improvements deemed necessary or desirable by the Commission.

Payments from the Reserve Maintenance Fund, except the transfers which the Trustee is authorized to make in this Section, shall be made pursuant to a requisition process which follows the process described in Section 403 for payments from the Construction Fund.

The Trustee shall transfer any moneys from the Reserve Maintenance Fund to the credit of the General Reserve Fund from time to time upon the receipt of a certificate of a Commission Official certifying that the amount so to be transferred is not required for the purposes for which the Reserve Maintenance Fund has been created.

SECTION 508. *Debt Service Reserve Fund.* A special account within the Debt Service Reserve Fund may be created with respect to each series of Debt Service Reserve Fund Bonds issued under this Indenture and any Supplemental Indenture.

In each Fiscal Year, after first having made the deposits provided by Sections 505 through 507, the Trustee shall transfer from the Revenue Fund on or before the

last day of each month to the credit of the Debt Service Reserve Fund (a) the amount, if any, required to make the amount on deposit in the Debt Service Reserve Fund equal to the Debt Service Reserve Requirement which restoration, as implied by the Rate Covenant contained in Section 501, is intended to occur within eighteen (18) months; and (b) the amount set forth in a Supplemental Indenture if an amount different from the Debt Service Reserve Requirement is required.

To the extent accounts are created in the Debt Service Reserve Fund for Debt Service Reserve Fund Bonds, the funds and DSRF Security, as hereinafter defined, held therein shall be available to make payments required under the Indenture for the benefit of all Debt Service Reserve Fund Bonds.

Moneys held in the Debt Service Reserve Fund shall be used for the purpose of paying interest on, maturing principal and mandatory sinking fund redemption price of Debt Service Reserve Fund Bonds whenever and to the extent that the moneys held for the credit of the Debt Service Fund shall be insufficient for such purpose. If at any time the moneys and the principal amount of any DSRF Security held in the Debt Service Reserve Fund shall exceed the Debt Service Reserve Requirement, the Commission shall direct whether such excess moneys shall be transferred by the Trustee to the credit of the General Reserve Fund or used to reduce the principal amount of any DSRF Security.

In the event the Trustee shall be required to withdraw funds from the Debt Service Reserve Fund to restore a deficiency in the Debt Service Fund arising with respect to Debt Service Reserve Fund Bonds, the amount of such deficiency shall be allocated pro rata among such Bonds.

In lieu of the deposit of moneys into the Debt Service Reserve Fund, the Commission may cause to be provided a surety bond, an insurance policy, a letter of credit or similar financial instrument satisfactory to the Rating Agency (as evidenced by a letter from the Rating Agency confirming that the DSRF Security will not result in the rating on any outstanding Bonds being downgraded) (each, a "DSRF Security") payable to the Trustee for the benefit of the Bondholders in an amount equal to the difference between the Debt Service Reserve Requirement and the amounts then on deposit in the Debt Service Reserve Fund. The DSRF Security shall be payable (upon the giving of notice as required thereunder) on any Interest Payment Date on which moneys will be required to be withdrawn from the Debt Service Reserve Fund and applied to the payment of the principal of or interest on any Bonds to the extent that such withdrawals cannot be made by amounts on deposit in the Debt Service Reserve Fund.

If a disbursement is made pursuant to a DSRF Security, the Commission shall be obligated either (a) to reinstate the maximum limits of such DSRF Security or (b) to deposit into the Debt Service Reserve Fund, funds in the amount of the disbursement made under such DSRF Security, or a combination of such

alternatives, as shall provide that the amount credited to the Debt Service Reserve Fund equals the Debt Service Reserve Requirement within a time period of eighteen (18) months.

If the DSRF Security shall cease to have a rating described in the second preceding paragraph, the Commission shall use reasonable efforts to replace such DSRF Security with one having the required rating, but shall not be obligated to pay, or commit to pay, increased fees, expenses or interest in connection with such replacement or to deposit Revenues in the Debt Service Reserve Fund in lieu of replacing such DSRF Security with another.

SECTION 509. *General Reserve Fund.* After first having made the deposits provided by Sections 505 through 508, the Trustee shall transfer from the Revenue Fund on or before the last Business Day of each year (or more frequently if requested by a Commission Official) to the credit of the General Reserve Fund any funds which a Commission Official determines to be in excess of the amount required to be reserved therein for future transfers to the Debt Service Fund.

Moneys in the General Reserve Fund may be expended by the Commission 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:

- (a) To purchase or redeem Bonds;
- (b) To secure and pay the principal or redemption price of and interest on any Subordinated Indebtedness;
- (c) To make payments into the Construction Fund;
- (d) To fund improvements, extensions and replacements of the System; or
- (e) To further any corporate purpose.

The Trustee is authorized to apply monies on deposit in the General Reserve Fund for any of such purposes upon receipt of a requisition signed by a Commission Official, stating in respect of each payment to be made:

(a) the name of the Person, firm or corporation, to whom payment is to be made or, if the payment is to be made to a fund or account held by the Trustee under this Indenture or to a fund or account held by the Commission and not subject to the Indenture, the name of such fund or account,

(b) the amount to be paid, and

(c) the purpose for which the payment is to be made.

SECTION 510. *Rebate Fund.* The Commission covenants to calculate and to pay directly to the government of the United States of America all amounts due for payment of "arbitrage rebate" under Section 148(f) of the Code with respect to any Bonds. Nevertheless, the Commission in the future may deposit with the Trustee or direct the Trustee to deposit in the Rebate Fund amounts held in any Fund hereunder for any or all Series of Bonds (which direction shall specify the procedures for collection and payment of amounts due in respect of arbitrage rebate) if (a) required under any amendments to Section 148(f) of the Code or (b) the Commission otherwise determines that the funding of the Rebate Fund is necessary or appropriate. The Rebate Fund is a trust fund but the amounts therein do not constitute part of the Trust Estate. Amounts on deposit in the Rebate Fund may be used solely to make payments to the United States of America under Section 148 of the Code and to pay costs related to the calculation of the amounts due. Upon satisfaction of the Commission's covenants described above, any amounts remaining in the Rebate Fund shall be deposited in the General Reserve Fund.

SECTION 511. *Moneys Set Aside for Principal and Interest Held in Trust.* All moneys which the Trustee shall have set aside (or deposited with any paying agent) for the purpose of paying any of the Bonds hereby secured, either at the maturity thereof or upon call for redemption, shall be held in trust for the respective holders of such Bonds. However, any moneys which shall be so held or deposited by the Trustee, and which shall remain unclaimed by the holders of such Bonds for the period of five years after the date on which such Bonds shall have become payable, shall be paid to the Commission upon its written request or to such officer, board or body as may then be entitled by law to receive the same; thereafter the holders of such Bonds shall look only to the Commission or to such officer, board or body, as the case may be, for payment and then only to the extent of the amounts so received without any interest thereon, and the Trustee shall have no responsibility with respect to such moneys.

SECTION 512. *Additional Security.* Except as otherwise provided or permitted herein, the Trust Estate securing all Bonds issued under the terms of this Indenture shall be shared on a parity with other Parity Obligations on an equal and ratable basis. The Commission may, however, in its discretion, provide additional security or credit enhancement for specified Parity Obligations with no obligation to provide such additional security or credit enhancement to other Parity Obligations, except that no additional security or credit enhancement shall be provided unless there shall have been first delivered to the Trustee an opinion of Bond Counsel that the exclusion from gross income of interest on any Bonds for federal income tax purposes will not be adversely affected thereby. Moreover, the Commission may provide in a Supplemental Indenture that Bonds issued thereunder are not secured, or are secured only in part or only under certain circumstances, by the Trust Estate.

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ARTICLE VI

DEPOSITARIES AND INVESTMENTS OF MONEYS.

SECTION 601. *Depositary.* Except as otherwise provided herein, all moneys received by the Commission under the provisions of this Indenture shall be deposited with the Trustee or with one or more Depositaries. All moneys deposited under the provisions of this Indenture with the Trustee or any other Depositary shall be held in trust, credited to the particular fund or account to which such moneys belong and applied only in accordance with the provisions of this Indenture.

No moneys shall be deposited with any Depositary, other than the Trustee, in an amount exceeding fifty per centum (50%) of the amount which an officer of such Depositary shall certify to the Commission as the combined capital and surplus of such Depositary.

All moneys deposited with the Trustee or any other Depositary hereunder shall, to the extent not insured, be secured in the manner required or permitted by applicable law.

SECTION 602. *Investment of Moneys.* Moneys held in any of the funds or accounts hereunder may be retained uninvested, if deemed necessary by the Commission, as trust funds and secured as provided in Section 601 or may be invested in Permitted Investments. All investments shall be made by the Trustee upon the oral request of the Commission, which is confirmed in writing by a Commission Official specifying the account or fund from which moneys are to be invested and designating the specific Permitted Investments to be acquired.

All investments made pursuant to this Section shall be subject to withdrawal or shall mature or be subject to repurchase or redemption by the holder, not later than the earlier of (a) the date or dates set forth for similar investments in the applicable Supplemental Indenture or (b) the date on which the moneys may reasonably be expected to be needed for the purpose of this Indenture.

Investments acquired with the moneys in any fund or account shall be a part of such fund or account and, for the purposes of determining the amount in such fund or account, shall be valued at their then fair market value. The interest or income received on an investment shall remain in the fund or account to which the investment is credited except to the extent otherwise provided in the applicable Supplemental Indenture.

The Trustee shall withdraw, redeem or sell all or a portion of any investment upon receipt of the written direction from the Commission or upon a determination

by the Trustee that moneys in such fund or account are to be applied or paid by the Trustee pursuant to the provisions of this Indenture, and the proceeds thereof shall be deposited by the Trustee in the appropriate fund or account. Neither the Trustee nor the Commission shall be liable or responsible for any depreciation in the value of the Permitted Investments or for any losses incurred upon any unauthorized disposition thereof.

Each fund held under the Indenture shall be valued by the Trustee at least once annually within thirty days after the end of each Fiscal Year.

ARTICLE VII

PARTICULAR COVENANTS

SECTION 701. *Payment of Principal, Interest and Premium.* The Commission covenants that it will promptly pay the principal of, premium, if any, and the interest on every Bond issued under the provisions of this Indenture at the places, on the dates and in the manner provided herein and in said Bonds. Except as otherwise provided in this Indenture, the principal, interest and premium are payable solely from Revenues, which Revenues are hereby pledged to the payment thereof in the manner and to the extent provided herein. Neither the general credit of the Commission nor the general credit nor the taxing power of the Commonwealth or any political subdivision, agency or instrumentality thereof is pledged for the payment of the Bonds.

SECTION 702. *Annual Operating Budget; Capital Budget.*

(a) Annual Operating Budget. The Commission covenants that on or before the 31st day of May (or such other date as is consistent with the Commission's policies then in effect) in each Fiscal Year it will adopt a budget for the ensuing Fiscal Year (the "Annual Operating Budget"). Copies of each Annual Operating Budget shall be provided to the Trustee. Prior to adopting the Operating Budget, the Commission shall provide a draft of such budget to the Consulting Engineer sufficiently in advance of the adoption of such Annual Operating Budget in order for the Consulting Engineer to provide comments before such adoption. The Commission further covenants that it will prepare each such Annual Operating Budget on the basis of monthly requirements, so that it will be possible to determine the Current Expenses for each month during the Fiscal Year.

If for any reason the Commission shall not have adopted the Annual Operating Budget before the first day of any Fiscal Year, the budget for the preceding Fiscal Year, shall, until the adoption of the Annual Operating Budget, be deemed to be in force and shall be treated as the Annual Operating Budget under the provisions of this Article.

The Commission may adopt an amended or supplemental Annual Operating Budget at any time for the remainder of the then current Fiscal Year. Copies of any such amended or supplemental Annual Operating Budget shall be provided to the Trustee.

(b) Capital Budget. The Commission further covenants that it will adopt a capital budget (the "Annual Capital Budget") on or before May 31st of each Fiscal Year. The Annual Capital Budget will detail the Commission's planned

capital expenditures over a period of up to 10 years and the portion of capital expenditures expected to be funded from the Reserve Maintenance Fund. The Annual Capital Budget shall include the expected beginning balance in the Reserve Maintenance Fund, the amounts to be transferred by the Trustee to the Reserve Maintenance Fund from the General Reserve Fund, the amount of bond proceeds expected to become available during the Fiscal Year, the amounts expected to be transferred monthly by the Trustee from the Revenue Fund, and the desired year-end balance in the Reserve Maintenance Fund. Prior to adopting the Annual Capital Budget, the Commission shall provide a draft of the capital budget to the Consulting Engineer a sufficient time in advance of the Commission's adoption of the Annual Capital Budget in order for the Consulting Engineer to provide comments before the date of such adoption. The Commission may adopt amendments or supplements to the Annual Capital Budget at any time. Copies of the Annual Capital Budget shall be provided to the Trustee.

SECTION 703. *Limitations on Issuance of Additional Bonds and Execution of Approved Swaps.*

(a) Short-Term Indebtedness. The Commission agrees that it will not issue any Additional Bonds constituting Short-Term Indebtedness unless (1) immediately after the incurrence of such Short-Term Indebtedness, the outstanding principal amount of all Short-Term Indebtedness issued pursuant to this subsection does not exceed 30% of the Revenues for the most recent Fiscal Year for which audited financial statements are available; and (2) for a period of not fewer than seven consecutive days within each Fiscal Year, commencing with the Fiscal Year following the issuance of such Short-Term Indebtedness, the aggregate principal amount of all outstanding Short-Term Indebtedness described in this subsection is reduced to less than 5% of the Revenues for the immediately preceding Fiscal Year for which audited financial statements are available. Short-Term Indebtedness issued pursuant to this subsection will be on a parity with other Additional Bonds.

(b) Long-Term Indebtedness. The Commission agrees that it will not issue any Additional Bonds constituting Long-Term Indebtedness unless prior to or contemporaneously with the incurrence thereof, the provisions of Section 210 are met and there is delivered to the Trustee:

(1) a certificate of a Commission Official certifying that the Historical Pro Forma Debt Service Coverage Ratio for the most recent Fiscal Year preceding the delivery of such certificate for which audited financial statements are available was not less than 1.75; or

(2) a report of a Consultant to the effect that (i) the Net Revenues of the Commission during the preceding Fiscal Year were at least 130% of the Maximum Annual Debt Service on all Applicable Long-Term

Indebtedness then Outstanding and on any Applicable Long-Term Indebtedness proposed to be issued (which report may assume any revisions of the Tolls which have been approved by the Commission subsequent to the beginning of such Fiscal Year were in effect for the entire Fiscal Year, and (ii) the Projected Debt Service Coverage Ratio is not less than 1.30; or

(3) if the Long-Term Indebtedness is being incurred solely for the purposes of refunding, repurchasing or refinancing (whether in advance or otherwise) any outstanding Long-Term Indebtedness, a certificate of a Commission Official certifying the Maximum Annual Debt Service on all Applicable Long-Term Indebtedness prior to the issuance of the proposed Long-Term Indebtedness is greater than the Maximum Annual Debt Service on all Applicable Long-Term Indebtedness after the issuance of such proposed Long-Term Indebtedness.

(c) Subordinated Indebtedness. The Commission may incur Indebtedness (hereinafter referred to as "Subordinated Indebtedness") without limit which is subordinated and junior in all respects to payment of all Bonds and other Parity Obligations incurred hereunder so that the same is payable as to principal and interest once all other payments have been made hereunder from the amounts on deposit to the credit of the General Reserve Fund as long as prior to or contemporaneously with the incurrence thereof, there is delivered to the Trustee:

(1) a certificate of a Commission Official certifying that the Rate Covenant would have been met during the preceding Fiscal Year taking into account the Maximum Annual Debt Service on such Subordinated Indebtedness, and

(2) the other items listed in Section 210 (as the same may be modified to reflect the fact that such Indebtedness is Subordinated Indebtedness).

Such Subordinated Indebtedness and the payment thereof may be secured by a lien and pledge (a) subordinate to that of the Bonds on the Revenues or (b) prior to, on a parity with or subordinate to, the Bonds on Other Revenues, in which event the Commission and the Trustee may establish such other accounts under the Indenture as they deem necessary or appropriate.

(d) Approved Swap Agreements. The Commission agrees that it will not enter into any Approved Swap Agreement unless prior to or contemporaneously with the incurrence thereof, the provisions of Section 211 are met and there is delivered to the Trustee one of the certificates or reports required in subsection (b) above, which takes into account the expected payments by and to the Commission pursuant to such Approved Swap Agreement in calculating Annual Debt Service.

SECTION 704. *Use and Operation of System.* The Commission covenants that

(a) it will maintain and operate the System in an efficient and economical manner,

(b) it will maintain the System in good repair and will make all necessary repairs, renewals and replacements, to the extent funds are available therefor hereunder, and

(c) it will comply with laws and all rules, regulations, orders and directions of any legislative, executive, administrative or judicial body applicable to the System, subject to the right of the Commission to contest the same in good faith and by appropriate legal proceedings.

SECTION 705. *Inspection of the System.* The Commission shall make arrangements for the System to be inspected at least once every three years by engaging one or more Consultants to conduct the actual inspections and to prepare a report. Such report shall state (a) whether the System has been maintained in good repair, working order and condition since the last inspection report pursuant to this Section and (b) any recommendations which such Consultants may have as to revisions or additions to the Commission's Annual Capital Budget. Copies of such reports shall be filed with the Trustee.

SECTION 706. *Construction of Projects.* The Commission covenants that:

(a) it will proceed with diligence to construct any Projects in conformity with law and all requirements of all governmental authorities having jurisdiction thereover.

(b) before entering into any construction contract it will secure the approval of the plans and specifications for such contract by a certified engineer or architect, who may be an employee of the Commission, and that it will require each Person, firm or corporation with whom it may contract in connection with the construction of any Project to furnish (1) a performance bond for 100% of the contract amount, and (2) a payment bond for 100% of the contract amount. Each of such bonds shall be executed by one or more responsible surety companies authorized to do business in the Commonwealth. Any proceeds received from such bonds first shall be applied toward the completion of the applicable Project and second shall be deposited in the General Reserve Fund.

(c) construction contracts for labor and/or materials also shall provide that payments thereunder shall not be made by the Commission in excess of 95% of current estimates except that once the work is at least 50% complete, such

retainage may be reduced by the Chief Engineer or another Commission Official to the extent such officer deems such reduction to be necessary or appropriate.

(d) the Commission shall involve the Consulting Engineer or another Consultant to assist in quality assurance matters in connection with design and/or construction of any Project or portion thereof to the extent the Commission determines necessary or appropriate. For purposes of this subsection, "quality assurance" shall be defined to mean those activities, from inception to completion of a Project, which are necessary to ensure that the processes are in place to produce a quality product.

SECTION 707. *Employment of Consulting Engineers.* The Commission covenants to employ an independent engineer or engineering firm or corporation having a national reputation for skill and experience in such work to perform any functions of the Consulting Engineer hereunder.

SECTION 708. *Insurance.* The Commission covenants that it will keep the System and its use and operation thereof insured (including through self-insurance) at all times in such amounts, subject to such exceptions and deductibles and against such risks, as are customary for similar organizations. All insurance policies shall be carried with a responsible insurance company or companies authorized to do business in the Commonwealth or shall be provided under a self-insurance program; any self-insurance program shall be actuarially sound in the written opinion of an accredited actuary, which opinion shall be filed with the Trustee at least annually. At any time and from time to time, the Commission may elect to terminate self-insurance of a given type. Upon making such election, the Commission shall, to the extent then deemed necessary by a Consultant, obtain and maintain comparable commercial insurance.

On July 1, 2003 and every three years thereafter (except with respect to self-insurance, which shall be annually), the Commission shall cause a Consultant to certify to the Trustee that (a) it has reviewed the adequacy of the Commission's insurance, listing the types and amounts of insurance, and (b) it finds such coverage to be reasonable and customary for similar organizations. If the Consultant concludes that coverage other than that which is currently carried by the Commission should be carried, the Commission shall obtain such insurance coverage unless it determines in good faith that it is unreasonable or uneconomical to obtain such coverage and certifies the same in writing to the Trustee.

All insurance policies maintained by the Commission shall be available at reasonable times for inspection by the Trustee, its agents and representatives.

The Commission covenants that it will take actions as it deems necessary to demand, collect and sue for any proceeds that may become due and payable to it under any policy

SECTION 709. *Damage or Destruction.* Immediately after any damage to or destruction of any part of the System which materially adversely affects the Revenues of the Commission, the Commission will promptly take action to repair, reconstruct or replace the damaged or destroyed property or to otherwise ameliorate the adverse impact on Revenues.

SECTION 710. *Annual Audit.* The Commission covenants that it will cause an annual audit to be made of its books and accounts of each Fiscal Year by an independent certified public accountant. A copy of such audit shall be filed with the Trustee promptly after the receipt by the Commission for such purpose.

SECTION 711. *Encumbrance of Revenues; Sale, Lease or Other Disposition of Property.* The Commission covenants that so long as any Bonds are Outstanding under this Indenture,

(a) (1) it will not create or suffer to be created any lien or charge upon any Revenues, except the lien and charge of the Bonds secured hereby and any Subordinated Indebtedness permitted pursuant to the provisions hereof; and (2) from such Revenues or other funds available hereunder, it will pay or cause to be discharged, or will make adequate provision to pay or discharge, within ninety (90) days after the same shall accrue, all lawful claims and demands for labor, materials or supplies which, if unpaid, might by law become a lien upon any Revenues; provided, however, that the Commission shall not be required to pay or discharge, or make provision for such payment or discharge of, any such lien or charge so long as the validity thereof shall be contested in good faith and by appropriate legal proceedings.

(b) the Commission will not sell or otherwise dispose of any real estate or personal property comprising a portion of the System unless the Commission determines

(1) such property (i) has become obsolete or worn out or is reasonably expected to become so within one year after the date of such disposition, (ii) is no longer used or useful in the operation of the System or in the generation of Revenues or (iii) is to be or has been replaced by other property; or

(2) by resolution that such action will not materially adversely affect the Net Revenues of the Commission.

The Commission shall have the discretion to deposit the proceeds of such sale or disposition in a fund or account held under the Indenture or a Commission account held outside the Indenture, as it deems appropriate. In the event the Commission did not meet the Rate Covenant during the preceding Fiscal

Year, however, then the Commission shall notify the Trustee of the sale or disposition of any property which generated Net Revenues in excess of one percent of the Commission's Net Revenues during the prior Fiscal Year and all proceeds from such sale or disposition shall be deposited in the Revenue Fund.

(c) the Commission will not lease any real estate or personal property comprising a portion of the System unless the Commission determines by resolution that such action will not materially adversely affect the Net Revenues of the Commission. The rental and other proceeds from any lease shall not be required to be deposited in the Revenue Fund unless the effect of such lease is to reduce Tolls.

Without intending to limit the foregoing, the Commission also may enter into contracts or other forms of agreement for the use of any real estate comprising a portion of the System including, but not limited to, rights of way for telephone, telegraph, optic fiber and other forms of communication, electric, gas transmission and other lines or facilities for utilities, and other uses which do not materially adversely affect the operation of the System and the payments received in connection with the same shall be deposited in such accounts (which may be outside the Indenture) as the Commission shall determine.

SECTION 712. *Tax Covenants.*

(a) The Commission covenants that it will neither make nor direct the Trustee to make any investment or other use of the proceeds of any Series of Bonds issued hereunder that would cause such Series of Bonds to be "arbitrage bonds", as that term is defined in Section 148(a) of the Code, and that it will comply with the requirements of the Code throughout the term of such Series of Bonds. The Trustee covenants that in those instances where it exercises discretion over the investment of funds, it shall not knowingly make any investment inconsistent with the foregoing covenants.

(b) Notwithstanding the foregoing, the Commission hereby reserves the right to elect to issue one or more Series of Additional Bonds, the interest on which is not exempt from federal income taxation. If such election is made prior to the issuance of such Additional Bonds, then the covenants contained in this Section shall not apply to such Series of Bonds.

(c) The Commission covenants that it (1) will take, or use its best efforts to require to be taken, all actions that may be required of the Commission for the interest on the Bonds to be and remain not included in gross income for federal income tax purposes and (2) will not take or authorize to be taken any actions within its control that would adversely affect that status under the provisions of the Code.

SECTION 713. *Security Agreement; Financing Statements.* In addition to the assignment by the Commission of its rights in the Trust Estate to the Trustee, the Commission hereby acknowledges that in order to more fully protect, perfect and preserve the rights of the Trustee and the Bondholders in the Trust Estate, the Commission grants to the Trustee a security interest in the Trust Estate and the proceeds thereof. The Commission agrees to cooperate with the Trustee in filing financing statements, and continuations thereof, in such manner and in such places as may be required by law in order to perfect such security interest. In the event that the Trustee becomes aware of a change in law which might affect such filing, the Trustee, at the expense of the Commission, may obtain an opinion of Counsel setting forth what actions, if any, the Commission or the Trustee should take in order to protect, perfect and preserve such security interest. The Commission shall cooperate with the Trustee in taking such actions, including the execution of any necessary financing statements and continuations thereof.

SECTION 714. *Further Instruments and Action.* The Commission covenants that it will, from time to time, execute and deliver such further instruments and take such further action as may be required to carry out the purposes of this Indenture.

ARTICLE VIII

EVENTS OF DEFAULT AND REMEDIES

SECTION 801. *Events of Default.* Each of the following is an "Event of Default" hereunder:

- (a) Default in the payment of any installment of principal, redemption premium, if any, interest or other amount due on any Bond when the same becomes due and payable;
- (b) Default in the payment by the Commission of any other Parity Obligation;
- (c) Subject to the provisions of Section 807, default in the performance or breach of any covenant, warranty or representation of the Commission contained in this Indenture (other than a default under subsections (a) and (b) of this Section);
- (d) The occurrence of any Event of Default under any Supplemental Indenture; or
- (e) (1) The occurrence of an Event of Bankruptcy of the Commission; (2) the appointment of a receiver, liquidator, assignee, custodian, trustee, sequestrator or other similar official of the Commission or of any substantial portion of its property, which appointment shall not have been rescinded or stayed within ninety (90) days after taking effect; or (3) the ordering of the winding up or liquidation of the affairs of the Commission.

SECTION 802. *Remedies Upon Default.*

- (a) If an Event of Default under Section 801 occurs and is continuing, the Trustee may, and upon the written request to the Trustee by the holder or holders of not less than a majority in aggregate principal amount of the Bonds then Outstanding shall, subject to the requirements of Section 902(e), by written notice to the Commission, declare the principal of and interest on the Bonds to the date of acceleration to be immediately due and payable.
- (b) At any time after such a declaration of acceleration has been made and before the entry of a judgment or decree for payment of the money due, the Trustee may, or the holders of not less than a majority in aggregate principal amount of the Bonds then Outstanding, may by written notice to the Commission

and the Trustee, and subject to the requirements of Section 902(e), direct the Trustee to rescind and annul such declaration and its consequences if:

(1) there has been paid to or deposited with the Trustee by or for the account of the Commission, or provision satisfactory to the Trustee has been made for the payment of a sum sufficient to pay: (i) all overdue installments of interest on the Bonds; (ii) the principal of and redemption premium, if any, on any Bonds which have become due other than by such declaration of acceleration and interest thereon; (iii) all amounts due on other Parity Obligations; (iv) to the extent lawful, interest upon overdue installments of interest and redemption premium, if any; and (v) all sums paid or advanced by the Trustee hereunder, together with the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and Counsel prior to the date of notice of rescission; and

(2) all Events of Default, other than those described in Sections 801(a) and (b), if any, which have occasioned such acceleration, have been cured or waived.

(c) No such rescission and annulment shall affect any subsequent default or impair any consequent right.

SECTION 803. *Additional Remedies.*

(a) The Trustee, upon the occurrence of an Event of Default may, and upon the written request of the holders of not less than a majority in aggregate principal amount of the Bonds Outstanding and subject, to the requirements of Section 902(e), shall proceed to protect and enforce its rights and the rights of the holders of the Bonds under this Indenture by a suit or suits in equity or at law, either for the specific performance of any covenant or agreement contained in this Indenture or in aid of the execution of any power herein granted, or for the enforcement of any other appropriate legal or equitable remedy, and the Trustee in reliance upon the advice of Counsel may deem most effective to protect and enforce any of the rights or interests of the Bondholders under the Bonds or this Indenture.

(b) Without limiting the generality of the foregoing, the Trustee shall at all times have the power to institute and maintain such proceedings as it may deem expedient: (1) to prevent any impairment of the Trust Estate by any acts which may be unlawful or in violation of this Indenture, and (2) to protect its interests and the interests of the Bondholders in the Trust Estate and in the issues, profits, revenues and other income arising therefrom, including the power to maintain proceedings to restrain the enforcement of or compliance with any governmental enactment, rule or order which may be unconstitutional or otherwise invalid, if the enforcement of, or compliance with, such enactment, rule or order

would impair the Trust Estate or be prejudicial to the interests of the Bondholders or the Trustee.

SECTION 804. *Marshaling of Assets.*

Upon the occurrence of an Event of Default, all moneys in all Funds (other than moneys in the Rebate Fund) shall be available to be utilized by the Trustee in accordance with this Article. The rights of the Trustee under Section 905 shall be applicable. During the continuance of any such Event of Default, all provisions of this Indenture relating to the utilization of Funds, including but not limited to those set out in Article V, shall be superseded by this Article. Subsequent to the curing or waiver of any such Event of Default, the provisions of this Indenture relating to utilization of Funds, including the provisions of Article V, shall be reinstated.

SECTION 805. *Trustee May File Proofs of Claim.*

(a) In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding under the Bankruptcy Law relating to the Commission, any other obligor upon the Bonds or any property of the Commission, the Trustee (whether or not the principal of the Bonds shall then be due and payable by acceleration or otherwise, and whether or not the Trustee shall have made any demand upon the Commission for the payment of overdue principal, redemption premium, if any, and interest) shall be entitled and empowered, by intervention in such proceeding or other means:

(1) to file and prove a claim for the whole amount of the principal, redemption premium, if any, and interest owing and unpaid in respect of the Bonds then Outstanding or for breach of this Indenture and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and Counsel) and of the holders allowed in such proceeding; and

(2) to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same;

and any receiver, assignee, trustee, liquidator, sequestrator or similar official in any such judicial proceeding is hereby authorized by each holder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the holders, to pay to the Trustee any amount due it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and Counsel, and any other amounts due the Trustee under Section 905.

(b) No provision of this Indenture empowers the Trustee to authorize or consent to or accept or adopt on behalf of any Bondholders any plan of reorganization, arrangement, adjustment or composition affecting any of the Bonds or the rights of any holder thereof, or to authorize the Trustee to vote in respect of the claim of any holder in any proceeding described in subsection (a) of this Section.

SECTION 806. *Possession of Bonds Not Required.* All rights under this Indenture and the Bonds may be enforced by the Trustee without possession of any Bonds or the production of them at trial or other proceedings. Any proceedings instituted by the Trustee may be brought in its name for itself or as representative of the Bondholders without the necessity of joining Bondholders as parties, and any recovery resulting from such proceedings shall, subject to Section 808, be for the ratable benefit of the Bondholders.

SECTION 807. *Notice and Opportunity to Cure Certain Defaults.* No default under Section 801(c) shall constitute an Event of Default until written notice of such default shall have been given to the Commission by the Trustee or by the holders of at least 25% in aggregate principal amount of the Bonds Outstanding, and the Commission shall have had thirty (30) days after receipt of such notice to correct such default or cause such default to be corrected, and shall have failed to do so. In the event, however, that the default is such that it cannot be corrected within such thirty (30) day period, it shall not constitute an Event of Default if corrective action is instituted by the Commission within such period and diligently pursued (as determined by the Trustee) until the default is corrected.

SECTION 808. *Priority of Payment Following Event of Default.*

Any portion of the Trust Estate held or received by the Trustee, by any receiver or by any Bond Owner pursuant to any right given or action taken under the provisions of this Article, after payment of the costs and expenses of the proceedings resulting in the collection of such moneys and of the fees, expenses and liabilities incurred by the Trustee and the transfer to Secured Owners (other than Owners of the Bonds) of amounts to which they are entitled by virtue of their parity position, shall be deposited and applied as follows:

(a) If the principal of all the Bonds then Outstanding and the interest accrued thereon has been declared to be due and payable immediately pursuant to Section 802(a) (or, but for any legal prohibition on such declaration of acceleration, such principal and interest would have been declared to be due and payable immediately pursuant to such Section or the provisions of any applicable Reimbursement Agreement) and such declaration has not been rescinded and annulled, there shall be deposited into the Debt Service Fund moneys sufficient to pay the amounts described in clauses (1), (2) and (3) below, and all such moneys shall be applied, as promptly as practicable (but subject to the provisions of the last paragraph of this Section), proportionately to

(1) the payment to the persons entitled thereto of all payments of interest then due on the Bonds with interest on overdue installments, if lawful, at their respective rates from the respective dates upon which they became due, in the order of maturity of the installments of such interest and, if the amount available shall not be sufficient to pay in full any particular installment of interest, then to the payment ratably, according to the amounts due on such installment;

(2) the payment to the persons entitled thereto of the unpaid principal of any of the Bonds which shall have become due (or which but for any legal prohibition on such declaration of acceleration would have become due) with interest on such Bonds at their respective rates from the respective dates upon which they became due and, if the amount available shall not be sufficient to pay in full the Bonds due on any particular date, together with such interest, then to the payment ratably, according to the amount of principal and interest due on such date, in each case to the persons entitled thereto, without any discrimination or privilege;

(3) the payment of any other amounts then owing hereunder; and, after said deposit into the Debt Service Fund, there shall be paid the Subordinated Indebtedness issued or incurred by the Commission pursuant to Section 703(c).

(b) If the principal of and interest on all Bonds then Outstanding and has not been declared to be due and payable immediately pursuant to Section 802(a) (or deemed to be due and payable as contemplated in paragraph (a) above) or if such a declaration has been rescinded and annulled, then there shall be deposited into the Debt Service Fund moneys sufficient to pay the amounts described in clauses (1), (2) and (3) below, and all such moneys shall be applied, as promptly as practicable (but subject to the provisions of the last paragraph of this Section),

(1) first, to the payment to the persons entitled thereto of all installments of interest then due on the Bonds, with interest on overdue installments, if lawful, at their respective rates from the respective dates upon which they became due, in the order of maturity and, if the amount available shall not be sufficient to pay in full any particular installment of interest, then to the payment ratably, according to the amounts due on such installment;

(2) second, to the payment to the persons entitled thereto of the unpaid principal of any of the Bonds which shall have become due with interest on such Bonds at their respective rates from the respective dates upon which they became due and, if the amount available shall not be sufficient to pay in full the Bonds due on any particular date, together with

such interest, then to the payment ratably, according to the amount of principal and interest due on such date, in each case to the persons entitled thereto, without any discrimination or privilege; and

(3) third, to the payment of any other amounts then owing hereunder, and, after said deposit into the Debt Service Fund, there shall be paid the Subordinated Indebtedness issued or incurred by the Commission pursuant to Section 703(c).

Whenever moneys are to be applied pursuant to the provisions of this Section, such moneys shall be applied at such times, and from time to time, as the Trustee shall determine, having due regard to 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 funds, it shall fix the date (which shall be an Interest 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 amounts of principal and interest to be paid on such date shall cease to accrue. The Trustee shall give notice of the deposit with it of any such moneys and of the fixing of any such date by mail to all Owners of Bonds with respect to which the Event of Default occurred and shall not be required to make payment to any Bond Owner until such Bonds shall be presented to the Trustee for appropriate endorsement or for cancellation if fully paid.

SECTION 809. *Bondholders May Direct Proceedings.* The owners of a majority in aggregate principal amount of the Bonds Outstanding shall, subject to the requirements of Section 902(e), have the right, by an instrument or instruments in writing executed and delivered to the Trustee, to direct the method and place of conducting all remedial proceedings by the Trustee hereunder, provided that such direction shall not be in conflict with any rule of law or this Indenture and that the Trustee shall have the right to decline to follow any such direction which in the opinion of the Trustee would be unduly prejudicial to the rights of Bondholders not parties to such direction or would subject the Trustee to personal liability or expense. Notwithstanding the foregoing, the Trustee shall have the right to select and retain Counsel of its choosing to represent it in any such proceedings. The Trustee may take any other action which is not inconsistent with any direction under this Section.

SECTION 810. *Limitations on Rights of Bondholders.*

(a) No Bondholder shall have any right to pursue any other remedy under this Indenture or the Bonds unless: (1) an Event of Default shall have occurred and is continuing; (2) the owners of not less than a majority in aggregate principal amount of all Bonds then Outstanding have requested the Trustee, in writing, to exercise the powers hereinabove granted or to pursue such remedy in its or their name or names; (3) the Trustee has been offered indemnity satisfactory to it

against costs, expenses and liabilities reasonably anticipated to be incurred; (4) the Trustee has declined to comply with such request, or has failed to do so, within sixty (60) days after its receipt of such written request and offer of indemnity; and (5) no direction inconsistent with such request has been given to the Trustee during such 60-day period by the holders of a majority in aggregate principal amount of the Bonds Outstanding.

(b) The provisions of subsection (a) of this Section are conditions precedent to the exercise by any Bondholder of any remedy hereunder. The exercise of such rights is further subject to the provisions of Sections 809, 811 and 814. No one or more Bondholders shall have any right in any manner whatever to enforce any right under this Indenture, except in the manner herein provided. All proceedings at law or in equity with respect to an Event of Default shall be instituted and maintained in the manner herein provided for the equal and ratable benefit of the Bondholders of all Bonds Outstanding.

SECTION 811. *Unconditional Right of Bondholder to Receive Payment.* Notwithstanding any other provision of this Indenture, any Bondholder shall have the absolute and unconditional right to receive payment of principal of, redemption premium, if any, and interest on the Bonds on and after the due date thereof, and to institute suit for the enforcement of any such payment.

SECTION 812. *Restoration of Rights and Remedies.* If the Trustee or any Bondholder has instituted any proceeding to enforce any right or remedy under this Indenture, and any such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or such Bondholder, then the Commission, the Trustee and the Bondholders, subject to any determination in such proceeding, shall be restored to their former positions hereunder, and all rights and remedies of the Trustee and the Bondholders shall continue as though no such proceeding had been instituted.

SECTION 813. *Rights and Remedies Cumulative.* No right or remedy herein conferred upon or reserved to the Trustee is intended to be exclusive of any other right or remedy, but each such right or remedy shall, to the extent permitted by law, be cumulative of and in addition to every other right or remedy given hereunder or now or hereafter existing at law, in equity or otherwise. The assertion or employment of any right or remedy hereunder shall not prevent the concurrent assertion or employment of any other appropriate right or remedy.

SECTION 814. *Delay or Omission Not Waiver.* No delay or omission by the Trustee or any Bondholder to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or constitute a waiver of such Event of Default. Every right and remedy given by this Article or by law to the Trustee or the Bondholders may be exercised from time to time, and as often as may as deemed expedient, by the Trustee or the Bondholders, as the case may be.

SECTION 815. *Waiver of Defaults.*

(a) The holders of a majority in aggregate principal amount of the Outstanding Bonds may, by written notice to the Trustee and subject to the requirements of Section 8.02(e), waive any existing default or Event of Default and its consequences, except an Event of Default under Section 8.01(a) or (b). Upon any such waiver, the default or Event of Default shall be deemed cured and shall cease to exist for all purposes. No waiver of any default or Event of Default shall extend to or effect any subsequent default or Event of Default or shall impair any right or remedy consequent thereto.

(b) Notwithstanding any provision of this Indenture, in no event shall any Person, other than all of the affected Bondholders, have the ability to waive any Event of Default under this Indenture if such event results or may result, in the opinion of Bond Counsel, in interest on any of the Bonds becoming includable in gross income for federal income tax purposes if the interest on such Bonds was not includable in gross income for federal income tax purposes prior to such event.

SECTION 816. *Notice of Events of Default.* If an Event of Default occurs of which the Trustee has or is deemed to have notice under Section 902(h), the Trustee shall give Immediate Notice thereof to the Commission. Within 90 days thereafter (unless such Event of Default has been cured or waived), the Trustee shall give notice of such Event of Default to each Bondholder then Outstanding, provided, however, that except in the instance of an Event of Default under Section 801(a) or (b), the Trustee may withhold such notice if and so long as the Trustee in good faith determines that the withholding of such notice does not materially adversely affect the interests of Bondholders, and provided, further, that notice to Bondholders of any Event of Default under Section 801(c) shall be subject to the provisions of Section 807 and shall not be given until the grace period has expired.

ARTICLE IX

THE TRUSTEE

SECTION 901. *Duties and Responsibilities of the Trustee.*

(a) Prior to the occurrence of an Event of Default of which it has or is deemed to have notice hereunder, and after the curing or waiver of any Event of Default which may have occurred:

(1) the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Indenture, and no implied covenants or obligations shall be read into this Indenture against the Trustee; and

(2) in the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee that conform to the requirements of this Indenture; but the Trustee is under a duty to examine such certificates and opinions to determine whether they conform to the requirements of this Indenture.

(b) In case an Event of Default of which the Trustee has or is deemed to have notice hereunder has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in their exercise, as a prudent Person would exercise or use in the conduct of such Person's own affairs.

(c) No provision of this Indenture shall be construed to relieve the Trustee from liability for its own grossly negligent action, its own grossly negligent failure to act, or its own willful misconduct, except that:

(1) this subsection shall not be construed to limit the effect of subsection (a) of this Section;

(2) the Trustee is not liable for any error of judgment made in good faith by a Responsible Officer, unless it is proven that the Trustee was grossly negligent in ascertaining the pertinent facts;

(3) the Trustee is not liable with respect to any action it takes or omits to be taken by it in good faith in accordance with the direction of the Bondholders under any provision of this Indenture 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 under this Indenture; and

(4) no provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers, if it has reasonable grounds for believing that the repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

(d) The Trustee shall maintain records of all investments and disbursements of proceeds in the funds and accounts established pursuant to this Indenture through the date ending six (6) years following the date on which all the Bonds have been retired.

(e) Whether or not expressly so provided, every provision of this Indenture relating to the conduct or affecting the liability of or affording protection to the Trustee is subject to the provisions of this Section.

SECTION 902. *Certain Rights of the Trustee.* Except as otherwise provided in Section 901:

(a) the Trustee may rely and is protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, approval, bond, debenture or other paper or document believed by it to be genuine and to have been signed or presented by the proper party or parties;

(b) any request, direction, order or demand of the Commission under this Indenture shall be sufficiently evidenced by a certificate of a Commission Official (unless other evidence thereof is specifically prescribed) and any resolution of the Commission may be sufficiently evidenced by a copy thereof certified by a Commission Official, as appropriate;

(c) whenever in the administration of this Indenture the Trustee deems it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Trustee (unless other evidence thereof is specifically prescribed) may, in the absence of bad faith on its part, rely upon a certificate of a Commission Official;

(d) the Trustee may consult with Counsel and the written advice of such Counsel or an opinion of Counsel shall be full and complete authorization and protection for any action taken, suffered or omitted by it in good faith and in accordance with such advice or opinion;

(e) the Trustee is under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Bondholders unless such holders have offered to the Trustee security or indemnity satisfactory to the Trustee as to its terms, coverage, duration, amount and otherwise with respect to the costs, expenses and liabilities which may be incurred by it in compliance with such request or direction principal amount;

(f) the Trustee is not required to make any inquiry or investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, approval, bond, debenture or other paper or document but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may deem necessary or advisable and, if the Trustee determines to make such further inquiry or investigation, it is entitled to examine the books, records and premises of the Commission, in person or by agent or attorney;

(g) the Trustee may execute any of its trusts or powers or perform any duties under this Indenture either directly or by or through agents or attorneys, and may in all cases pay, subject to reimbursement as provided in Section 905, such reasonable compensation as it deems proper to all such agents and attorneys reasonably employed or retained by it, and the Trustee shall not be responsible for any misconduct or negligence of any agent or attorney appointed with due care by it;

(h) the Trustee is not required to take notice or deemed to have notice of any default or Event of Default hereunder, except Events of Default under Section 801(a) and (b), unless a Responsible Officer of the Trustee has actual knowledge thereof or has received notice in writing of such default or Event of Default from the Commission or the holders of at least 25% in aggregate principal amount of the Outstanding Bonds, and in the absence of any such notice, the Trustee may conclusively assume that no such default or Event of Default exists;

(i) the Trustee is not required to give any bond or surety with respect to the performance of its duties or the exercise of its powers under this Indenture;

(j) in the event the Trustee receives inconsistent or conflicting requests and indemnity from two or more groups of Bondholders, each representing less than a majority in aggregate principal amount of the Bonds Outstanding, pursuant to the provisions of this Indenture, the Trustee, in its sole discretion, may determine what action, if any, shall be taken;

(k) the Trustee's immunities and protections from liability and its right to indemnification in connection with the performance of its duties under this Indenture shall extend to the Trustee's officers, directors, agents, attorneys and

employees. Such immunities and protections and right to indemnification, together with the Trustee's right to compensation, shall survive the Trustee's resignation or removal, the defeasance or discharge of this Indenture and final payment of the Bonds;

(l) the permissive right of the Trustee to take the actions permitted by this Indenture shall not be construed as an obligation or duty to do so; and

(m) except for information provided by the Trustee concerning the Trustee, the Trustee shall have no responsibility for any information in any offering memorandum or other disclosure material distributed with respect to the Bonds, and the Trustee shall have no responsibility for compliance with any state or federal securities laws in connection with the Bonds.

SECTION 903. *Trustee Not Responsible for Recitals.* The recitals contained in this Indenture and in the Bonds (other than the certificate of authentication on the Bonds) are statements of the Commission and the Trustee assumes no responsibility for their correctness. The Trustee makes no representations as to the value, condition or sufficiency of any assets pledged or assigned as security for the Bonds, the right, title or interest of the Commission therein, the security provided thereby or by this Indenture, the technical or financial feasibility of any Project, the compliance of the Project with the Act, or the tax-exempt status of any Bonds. The Trustee is not accountable for the use or application by the Commission of any of the proceeds of the Bonds, or for the use or application of any moneys paid over by the Trustee in accordance with any provision of this Indenture.

SECTION 904. *Trustee May Own Bonds.* The Trustee, in its commercial banking or in any other capacity, may in good faith buy, sell, own, hold and deal in any of the Bonds and may join in any action which any Bondholder may be entitled to take with like effect as if it were not Trustee. The Trustee, in its commercial banking or in any other capacity, may also engage in or be interested in any financial or other transaction with the Commission and may act as depository, trustee or agent for any committee of Bondholders secured hereby or other obligations of the Commission as freely as if it were not Trustee. The provisions of this Section shall extend to affiliates of the Trustee.

SECTION 905. *Compensation and Expenses of the Trustee.* The Commission covenants and agrees:

(a) to pay to the Trustee compensation for all services rendered by it hereunder and under the other agreements relating to the Bonds to which the Trustee is a party in accordance with terms agreed to from time to time and, subsequent to default, in accordance with the Trustee's then-current fee schedule for default administration (the entirety of which compensation shall not be limited by any provision of law regarding compensation of a trustee of an express trust);

(b) to reimburse the Trustee upon its request for all reasonable expenses, disbursements and advances incurred or made by the Trustee in accordance with any provision of this Indenture, any other agreement relating to the Bonds to which it is a party or in complying with any request by the Commission or the Rating Agency, including the reasonable compensation, expenses and disbursements of its agents and Counsel, except any such expense, disbursement or advance attributable to the Trustee's gross negligence or bad faith; and

(c) to indemnify, defend and hold the Trustee harmless from and against any loss, liability or expense incurred without gross negligence or bad faith on its part, arising out of or in connection with the acceptance or administration of the office of Trustee under this Indenture, including the costs of defending itself against any claim or liability in connection with the exercise or performance of any of its powers or duties hereunder.

In the event the Trustee incurs expenses or renders services in any proceedings under Bankruptcy Law relating to the Commission, the expenses so incurred and compensation for services so rendered are intended to constitute expenses of administration under Bankruptcy Law.

As security for the performance of the obligations of the Commission under this Section, the Trustee shall have a lien prior to the lien securing the Bonds, which it may exercise through a right of setoff, upon all property or funds held or collected by the Trustee pursuant to this Indenture (other than moneys in the Rebate Fund). The obligations of the Commission to make the payments described in this Section shall survive discharge of this Indenture, the resignation or removal of the Trustee and payment in full of the Bonds.

SECTION 906. *Qualifications of Trustee.* There shall at all times be a trustee hereunder which shall be a corporation or banking association organized and doing business under the laws of the United States of America or of any state, authorized under such laws to exercise corporate trust powers, which has a combined capital and surplus of at least \$50,000,000, or is an affiliate of, or has a contractual relationship with, a corporation or banking association meeting such capital and surplus requirement which guarantees the obligations and liabilities of the proposed trustee, and which is subject to supervision or examination by federal or state banking authority. If such corporation or banking association publishes reports of condition at least annually, pursuant to law or the requirements of such banking authority, then for purposes of this Section, the combined capital and surplus of such corporation or banking association shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time the Trustee shall cease to be eligible in accordance with

the provisions of this Section, it shall resign promptly in the manner and with the effect specified in this Article.

SECTION 907. *Resignation or Removal of Trustee; Appointment of Successor Trustee.*

(a) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to this Article shall become effective until the acceptance of appointment by the successor Trustee under Section 908.

(b) The Trustee may resign at any time by giving written notice to the Commission. Upon receiving such notice of resignation, the Commission shall promptly appoint a successor Trustee by an instrument in writing. If an instrument of acceptance has not been delivered to the resigning Trustee within 30 days after the giving of such notice of resignation, the resigning Trustee or any Bondholder may petition a court of competent jurisdiction for the appointment of a successor Trustee.

(c) Prior to the occurrence and continuance of an Event of Default hereunder, or after the curing or waiver of any such Event of Default, the Commission or the holders of a majority in aggregate principal amount of the Outstanding Bonds, may remove the Trustee and shall appoint a successor Trustee. In the event there shall have occurred and be continuing an Event of Default hereunder, the holders of a majority in aggregate principal amount of the Outstanding Bonds may remove the Trustee and shall appoint a successor Trustee. In each instance, such removal and appointment shall be accomplished by an instrument or concurrent instruments in writing signed by the Commission or such holders, as the case may be, and delivered to the Trustee, the Commission, the holders of the Outstanding Bonds and the Successor Trustee.

(d) If at any time: (1) the Trustee shall cease to be eligible and qualified under Section 906 and shall fail or refuse to resign after written request to do so by the Commission or the holder of any Bond, or (2) the Trustee shall become incapable of acting or shall be adjudged insolvent, or a receiver of the Trustee or its property shall be appointed, or any public officer shall take charge or control of the Trustee, its property or affairs for the purpose of rehabilitation, conservation or liquidation, then in either such case (i) the Commission may remove the Trustee and appoint a successor Trustee in accordance with the provisions of subsection (c) of this Section; or (ii) any holder of a Bond then Outstanding may, on behalf of the holders of all Outstanding Bonds, petition a court of competent jurisdiction for removal of the Trustee and appointment of a successor Trustee.

(e) The Commission shall give written notice of each resignation or removal of the Trustee and each appointment of a successor Trustee to each holder of Bonds then Outstanding as listed in the Bond Register. Each such notice shall

include the name and address of the applicable corporate trust office of the successor Trustee.

SECTION 908. *Acceptance of Appointment by Successor Trustee.*

(a) Every successor Trustee appointed hereunder shall execute, acknowledge and deliver to the Commission and the predecessor Trustee an instrument accepting its appointment. The resignation or removal of the retiring Trustee shall thereupon become effective, and the successor Trustee shall, without further act, deed or conveyance become vested with all the estates, properties, rights, powers and duties of the predecessor Trustee. Upon the request of the Commission or the successor Trustee, the predecessor Trustee shall execute and deliver an instrument transferring to the successor Trustee all the estates, properties, rights, powers and duties of the predecessor Trustee under this Indenture, and shall duly assign, transfer, deliver and pay over to the successor Trustee all of the Trust Estate and moneys and other property then held under this Indenture, subject, however, to the lien provided for in Section 905. The successor Trustee shall promptly give written notice of its appointment to the holders of all Bonds Outstanding in the manner prescribed herein, unless such notice has previously been given.

(b) No successor Trustee shall accept appointment as provided in this Section unless, as of the date of such acceptance, it is eligible and qualified under the provisions of Section 906.

SECTION 909. *Merger, Succession or Consolidation of Trustee.* Any corporation or association: (a) into which the Trustee is merged or with which it is consolidated; (b) resulting from any merger or consolidation to which the Trustee is a party; or (c) succeeding to all or substantially all of the corporate trust business of the Trustee, shall be the successor Trustee without the execution or filing of any document or the taking of any further action; provided, however, the Trustee shall give written notice to the Commission at least sixty (60) days prior to the effective date of the proposed merger, consolidation or transaction. Any such successor must be eligible and qualified under the provisions of Section 906.

SECTION 910. *Notices to Bondholders; Waiver.* Where this Indenture provides for notice to Bondholders of any event, such notice shall be sufficiently given (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to each Bondholder affected by each event, at his or her address as it appears on the Bond Register, not later than the latest date, and not earlier than the earliest date, prescribed for the first giving of such notice. In any case where notice to Bondholders is given by mail, neither the failure to mail such notice, nor any default in any notice so mailed to any particular Bondholder shall affect the sufficiency of such notice with respect to other Bondholders. Where this Indenture provides for notice in any manner, such notice may be waived in writing

by the Person entitled to received such notice, either before or after the event, and such waiver shall be the equivalent of such notice. Waivers of notice by Bondholders shall be filed with the Trustee, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

For so long as the Bonds are registered solely in the name of the Securities Depository or its nominee, where this Indenture provides for notice to the Bondholders of the existence of, or during the continuance of, any Event of Default, the Trustee, at the expense of the Commission, shall: (a) establish a record date (the "Record Date") for determination of the Persons entitled to receive such notice; (b) request a securities position listing from the Securities Depository showing the Depository Participants holding positions in the Bonds affected by such notice as of the Record Date for such notice; (c) mail, first class postage prepaid, copies of the notice as provided above to each Depository Participant identified in the securities position listing as holding a position in the Bonds as of the Record Date for the notice, to each nationally recognized municipal securities information repository (within the meaning of Rule 15c2-12 of the United States Securities and Exchange Commission under the Securities Exchange Act of 1934), and to any Person identified to the Trustee as a nonobjecting beneficial owner pursuant to the immediately following clause; (d) request that the Depository Participant retransmit the notice to all Persons for which it served as nominee on the Record Date, including nonobjecting beneficial owners, or retransmit the notice to objecting beneficial owners and provide a listing of nonobjecting beneficial owners for whom the Depository Participant served as nominee on the Record Date to the Trustee; (e) provide on behalf of the Commission and not as its agent, an undertaking to pay to any Depository Participant or other nominee (other than the Securities Depository) the reasonable costs of transmitting the notice to Persons for whom the Depository Participant acts as nominee; and (f) provide as many copies of the notice as may be requested by any nominee owner of the Bonds. Any default in performance of the duties required by this paragraph shall not affect the sufficiency of notice to the Bondholders given in accordance with the first paragraph of this Section, nor the validity of any action taken under this Indenture in reliance on such notice to Bondholders.

Where this Indenture provides for notice to the Bondholders of any event, the form of the notice shall prominently include a title block, separate from the body of the notice, which shall include the following information: (a) the complete title of the Bonds; (b) the complete name of the Commission; (c) the entire nine-digit CUSIP number of each affected maturity of the Bonds (which may be appended to such notice); (d) the Record Date, and (e) a summary that is no more than the maximum number of characters permitted by the Securities Depository.

Any notice required or permitted by this Indenture to be given to the Securities Depository shall be given to it in the manner provided by this Section for giving notice to Bondholders, and also shall be given in such electronic format as

reasonably requested by the Securities Depository) and shall be sent to: The Depository Trust Company, Proxy Department, 55 Water Street, 50th Floor, New York, New York 10041-0099, (telecopy: (212) 855-5181), or such other address as may be specified by the Securities Depository in writing to the Trustee.

SECTION 911. *Paying Agents and Authenticating Agents.* The Commission may appoint at its expense one or more Paying Agents and Authenticating Agents to act as agent of the Trustee in performing any of the duties and obligations imposed under this Indenture or any Supplemental Indenture, and separate appointments may be made for the Bonds of each series. The Trustee may be appointed to serve in any such capacity.

Each Paying Agent and Authenticating Agent shall signify its acceptance of the duties and obligations imposed upon it by this Indenture or any Supplemental Indenture by executing and delivering to the Commission and to the Trustee a written acceptance thereof.

The Commission, in its discretion, may discharge any Paying Agent and/or Authenticating Agent, subject to the provisions of Section 1202.

ARTICLE X

SUPPLEMENTAL INDENTURES

SECTION 1001. *Supplemental Indentures Without Bondholders' Consent.*

The Commission and the Trustee may from time to time and at any time enter into Supplemental Indentures, without the consent of or notice to any Bondholder, to effect any one or more of the following:

(a) cure any ambiguity, defect or omission or correct or supplement any provision herein or in any Supplemental Indenture;

(b) grant to or confer upon the Trustee for the benefit of the Bondholders any additional rights, remedies, powers, authority or security that may lawfully be granted to or conferred upon the Bondholders or the Trustee which are not contrary to or inconsistent with this Indenture as then in effect or to subject to the pledge and lien of this Indenture additional revenues, properties or collateral including Defeasance Obligations;

(c) add to the covenants and agreements of the Commission in this Indenture other covenants and agreements thereafter to be observed by the Commission or to surrender any right or power herein reserved to or conferred upon the Commission which are not contrary to or inconsistent with this Indenture as then in effect;

(d) permit the appointment of a co-trustee under this Indenture;

(e) modify, alter, supplement or amend this Indenture in such manner as shall permit the qualification of this Indenture, if required, under the Trust Indenture Act of 1939, the Securities Act of 1933 or any similar federal statute hereafter in effect;

(f) make any other change herein that is determined by the Trustee not to be materially adverse to the interests of the Bondholders;

(g) implement the issuance of Additional Bonds permitted hereunder; or

(h) if all Bonds in a Series are Book Entry Bonds, amend, modify, alter or replace any Letter of Representations as provided in Section 209 or other provisions relating to Book Entry Bonds.

The Trustee shall not be obligated to enter into any such Supplemental Indenture which adversely affects the Trustee's own rights, duties or immunities under this Indenture.

SECTION 1002. *Supplemental Indentures Requiring Bondholders' Consent.*

The Commission and the Trustee, at any time and from time to time, may execute and deliver a Supplemental Indenture for the purpose of making any modification or amendment to this Indenture, but only with the written consent, given as provided in Section 1003, of the holders of at least a majority in aggregate principal amount of the Bonds Outstanding at the time such consent is given, and in case less than all of the Bonds then Outstanding are affected by the modification or amendment, of the holders of at least a majority in aggregate principal amount of the Bonds so affected and Outstanding at the time such consent is given; provided, however, that if such modification or amendment will, by its terms, not take effect so long as any Bonds so affected remain Outstanding, the consent of the holders of such Bonds shall not be required and such Bonds shall not be deemed to be Outstanding for the purpose of any calculation of Outstanding Bonds under this Section. Notwithstanding the foregoing, no modification or amendment contained in any such Supplemental Indenture shall permit any of the following, without the consent of each Bondholder whose rights are affected thereby:

(a) a change in the terms of stated maturity or redemption of any Bond or of any installment of interest thereon;

(b) a reduction in the principal amount of or redemption premium on any Bond or in the rate of interest thereon or a change in the coin or currency in which such Bond is payable;

(c) the creation of a lien on or a pledge of any part of the Trust Estate which has priority over or parity with (to the extent not permitted hereunder) the lien or pledge granted to the Bondholders hereunder (but this provision shall not apply to the release of any part of the Trust Estate as opposed to the creation of a prior or parity lien or pledge);

(d) the granting of a preference or priority of any Bond or Bonds over any other Bond or Bonds, except to the extent permitted herein;

(e) a reduction in the aggregate principal amount of Bonds of which the consent of the Bondholders is required to effect any such modification or amendment; or

(f) a change in the provisions of this Section.

Notwithstanding the foregoing, the holder of any Bond may extend the time for payment of the principal of or interest on such Bond; provided, however, that upon

the occurrence of an Event of Default, funds available hereunder for the payment of the principal of and interest on the Bonds shall not be applied to any payment so extended until all principal and interest payments which have not been extended have first been paid in full. Notice of any Supplemental Indenture executed pursuant to this Section shall be given to the Bondholders promptly following the execution thereof.

SECTION 1003. *Consents of Bondholders and Opinions.* Each Supplemental Indenture executed and delivered pursuant to the provisions of Section 1002 shall take effect only when and as provided in this Section 1003. A copy of such Supplemental Indenture (or brief summary thereof or reference thereto in form approved by the Trustee), together with a request to Bondholders for their consent thereto in form satisfactory to the Trustee, shall be sent by the Trustee to Bondholders, at the expense of the Commission, by first class mail, postage prepaid, provided that a failure to mail such request shall not affect the validity of the Supplemental Indenture when consented to as provided hereinafter. Such Supplemental Indenture shall not be effective unless and until there shall have been filed with the Trustee (a) the written consents of Bondholders of the percentage of Bonds specified in Section 1002 given as provided in Section 1210, and (b) the opinion of Counsel described in Section 1006. Any such consent shall be binding upon the Bondholder giving such consent and upon any subsequent holder of such Bonds and of any Bonds issued in exchange therefor or in lieu thereof (whether or not such subsequent Bondholder has notice thereof), unless such consent is revoked in writing by the Bondholder giving such consent or a subsequent holder of such Bonds by filing such revocation with the Trustee prior to the date the Trustee receives the material required in subsections (a) and (b) of this Section.

Notwithstanding anything else herein, if a Supplemental Indenture is to become effective under Section 1002 on the same date as the date of issuance of Additional Bonds, the consents of the underwriters or purchasers of such Additional Bonds shall be counted for purposes of Section 1002 and this Section.

SECTION 1004. *Exclusion of Certain Bonds for the Purpose of Consent, etc.* Bonds which are to be disregarded under the last sentence of the definition of "Outstanding" shall not be deemed Outstanding for the purpose of consent or other action or any calculation of Outstanding Bonds provided for in this Article. At the time of any consent or other action taken under this Article or elsewhere in this Indenture, the Commission shall furnish the Trustee a certificate of a Commission Official, upon which the Trustee may rely, describing all Bonds so to be excluded.

SECTION 1005. *Notation on Bonds.* Bonds authenticated and delivered after the effective date of any action taken as provided in this Article may, and, if the Commission so determines, shall bear a notation by endorsement or otherwise in form approved by the Trustee as to such action and, upon demand of the holder of

any Outstanding Bond at such effective date and presentation of such Bond for the purpose at the office of the Trustee, or upon any transfer of any Bond Outstanding at such effective date, suitable notation shall be made on such Bond or upon any Bond issued upon any such transfer by the Trustee as to any such action.

If the Commission shall so determine, new Bonds so modified as in the opinion of the Trustee and the Commission to conform to such action shall be prepared, authenticated and delivered, and upon demand of the holder of any Bond then Outstanding shall be exchanged, without cost to such Bondholder for Bonds then Outstanding, upon surrender of such Bonds or Bonds of an equal aggregate principal amount and of the same series, maturity and interest rate, in any Authorized Denomination.

SECTION 1006. *Delivery of Counsel's Opinion with Respect to Supplemental Indentures.* Subject to the provisions of Section 901, the Trustee in executing a supplemental indenture may rely, and shall be fully protected in relying, on an opinion of Counsel acceptable to it stating that (a) the execution of such Supplemental Indenture is authorized or permitted by this Indenture and (b) all conditions precedent to the execution and delivery of such Supplemental Indenture have been complied with, and an opinion of Bond Counsel that the execution and performance of such Supplemental Indenture shall not, in and of itself, adversely affect the federal income tax status of any Bonds, the interest on which is not included in gross income for federal income tax purposes.

SECTION 1007. *Effect of Supplemental Indentures.* Upon the execution and delivery of any Supplemental Indenture under this Article, this Indenture shall be modified in accordance therewith, and such Supplemental Indenture shall form a part of this Indenture for all purposes; and every holder of any Bond theretofore or thereafter authenticated and delivered hereunder shall be bound thereby.

ARTICLE XI

DISCHARGE AND DEFEASANCE

SECTION 1101. *Discharge. If*

(a) the principal of any Bonds and the interest due or to become due thereon, together with any redemption premium required by redemption of any of the Bonds prior to maturity, shall be paid, or is caused to be paid, or is provided for under Section 1102, at the times and in the manner to which reference is made in the Bonds, according to the true intent and meaning thereof, or the outstanding Bonds shall have been paid and discharged in accordance with this Article, and

(b) all of the covenants, agreements, obligations, terms and conditions of the Commission under this Indenture shall have been kept, performed and observed and there shall have been paid to the Trustee, the Bond Registrar and the Paying Agents all sums of money due or to become due to them in accordance with the terms and provisions hereof, then the right, title and interest of the Trustee in the Trust Estate shall thereupon cease and the Trustee, on request of the Commission and at the expense of the Commission, shall release this Indenture and the Trust Estate and shall execute such documents to evidence such release as may be reasonably required by the Commission and shall turn over to the Commission, or to such other Person as may be entitled to receive the same, all balances remaining in any Funds hereunder except for amounts required to pay such Bonds or held pursuant to Section 511.

SECTION 1102. *Defeasance; Deposit of Funds for Payment of Bonds.*

If the Commission deposits with the Trustee moneys or Defeasance Obligations which, together with the earnings thereon, are sufficient to pay the principal amount of and redemption premium on any particular Bond or Bonds becoming due, either at maturity, by means of mandatory sinking fund redemption or by call for optional redemption or otherwise, together with all interest accruing thereon to the due date or Redemption Date, and pays or makes provision for payment of all fees, costs and expenses of the Commission and the Trustee due or to become due with respect to such Bonds, all liability of the Commission with respect to such Bond or Bonds shall cease, such Bond or Bonds shall be deemed not to be Outstanding hereunder and the holder or holders of such Bond or Bonds shall be restricted exclusively to the moneys or Defeasance Obligations so deposited, together with any earnings thereon, for any claim of whatsoever nature with respect to such Bond or Bonds, and the Trustee shall hold such moneys, Defeasance Obligations and earnings in trust for such holder or holders. In determining the sufficiency of the moneys and Defeasance Obligations deposited pursuant to this Section, the Trustee shall receive, at the expense of the Commission, and may rely upon: (a) a verification report of a firm of nationally recognized independent

certified public accountants or other qualified firm acceptable to the Commission and the Trustee; provided, however, that the Trustee may waive the requirement for the provision of such verification report if the Bonds which are being defeased will be paid and cancelled within 90 days and the Trustee can calculate the interest to be paid on such Bonds to and including such payment or redemption date; and (b) an opinion of Bond Counsel to the effect that (1) all conditions set forth in this Article have been satisfied and (2) that defeasance of any Bonds will not cause interest on the Bonds to be includable in gross income for federal income tax purposes. Upon such defeasance, all rights of the Commission, including its right to provide for optional redemption or prepayment of any Bonds on dates other than planned pursuant to such defeasance shall cease unless specifically retained by filing a written notification thereof with the Trustee at the time the Defeasance Obligations are deposited with the Trustee.

At such times as a Bonds shall be deemed to be paid hereunder, as aforesaid, it shall no longer be secured by or entitled to the benefits of this Indenture, except for the purposes of any such payment from such money or Defeasance Obligations.

SECTION 1103. *Notice of Defeasance.*

(a) In case any of the Bonds, for the payment of which moneys or Defeasance Obligations have been deposited with the Trustee pursuant to Section 1102, are to be redeemed on any date prior to their maturity, the Commission shall give to the Trustee in form satisfactory to it irrevocable instructions to give notice of redemption of such Bonds on the redemption date for such Bonds.

(b) In addition to the foregoing notice, in the event such Bonds to be redeemed are not by their terms subject to redemption within the next succeeding 60 days, the Trustee shall give further notice to the Bondholders that the deposit required by Section 1102 has been made with the Trustee and that said Bonds are deemed to have been paid in accordance with this Article and stating the maturity or redemption date or dates upon which moneys are to be available for the payment of the principal of and redemption premium, if any, on said Bonds; such further notice shall be given promptly following the making of the deposit required by Section 1102; and such further notice also shall be given in the manner set forth in Section 302; but no defect in said further notice nor any failure to give all or any portion of such further notice shall in any manner defeat the effectiveness of the deposit.

(c) If the Commission has retained any rights pursuant to Section 1102, notice thereof shall be sent to Bondholders of such Bonds as soon as practicable and not later than any notice required by subsections (a) or (b) of this Section.

ARTICLE XII

MISCELLANEOUS PROVISIONS

SECTION 1201. *Successorship of Commission.* In the event of the dissolution of the Commission, all of the covenants, stipulations, obligations and agreements contained in this Indenture by or on behalf of or for the benefit of the Commission shall bind or inure to the benefit of the successor or successors of the Commission from time to time and any officer, board, commission, authority, agency or instrumentality to whom or to which any power or duty affecting such covenants, stipulations, obligations and agreements shall be transferred by or in accordance with law. The word "Commission" as used in this Indenture shall include such successor or successors.

SECTION 1202. *Successorship of Paying Agents.* Any commercial bank, national banking association or trust company with or into which any Paying Agent may be merged or consolidated, or to which the assets and business of such Paying Agent may be sold, shall be deemed the successor of such Paying Agent for the purposes of this Indenture. If the position of any Paying Agent shall become vacant for any reason, the Commission shall, within thirty (30) days thereafter, appoint a commercial bank, national banking association or trust company as Paying Agent to fill such vacancy; provided, however, that if the Commission shall fail to appoint such Paying Agent within said period, the Trustee shall make such appointment.

SECTION 1203. *Notices.* Except as otherwise provided herein, all notices, certificates or other communications hereunder shall be in writing and shall be deemed given upon receipt, by hand delivery, mail, overnight delivery, telecopy or other electronic means addressed as follows:

Commission: Pennsylvania Turnpike Commission
 Route 283 & Eisenhower Boulevard
 Highspire, PA 17034
 Attention: J. Blair Fishburn
 Deputy Executive Director

Trustee: First Union National Bank
 123 South Broad Street
 11th Floor
 P.O. Box 7558
 Philadelphia, PA 19109
 Attention: John H. Clapham
 Vice President

In case by reason of the suspension of regular mail service, it shall be impracticable to give notice by first class mail of any event to any Bondholder or the Commission when such notice is required to be given pursuant to any provisions of this Indenture, then any manner of giving such notice as shall be satisfactory to the Trustee shall be deemed to be sufficient giving of such notice. The Commission and the Trustee may, by notice pursuant to this Section, designate any different addresses to which subsequent notices, certificates or other communications shall be sent. A duplicate copy of each notice, approval, consent, request, complaint, demand or other communication given hereunder by the Commission or the Trustee to any one of the others shall also be given to the others. For purposes of this Section and the definition of Immediate Notice, "electronic means" shall mean telecopy or facsimile transmission or other similar electronic means of communication which produces evidence of transmission. Notwithstanding the foregoing, notices to the Trustee shall be effective only upon receipt.

SECTION 1204. *Holidays.* If the date for making any payment or the last date for performance of any act or the exercising of any right, as provided in this Indenture, is not a Business Day, such payment may be made or act performed or right exercised on the next succeeding Business Day with the same force and effect as if done on the nominal date provided in this Indenture and no interest shall accrue on the payment so deferred during the intervening period.

SECTION 1205. *Counterparts.* This Indenture may be executed in any number of counterparts, each of which when so executed and delivered shall constitute an original, but all of which, when taken together, shall constitute but one and the same instrument, and shall become effective when copies hereof shall be delivered to each of the parties hereto, which copies, when taken together, bear the signatures of each of the parties hereto.

SECTION 1206. *Applicable Law.* This Indenture shall be governed in all respects including validity, interpretation and effect by, and shall be enforceable in accordance with, the laws of the United States of America and of the Commonwealth.

SECTION 1207. *Limitation of Liability of Officials of the Commission.* No covenant, stipulation, obligation or agreement contained herein shall be deemed to be a covenant, stipulation, obligation or agreement of any present or future member, agent or employee of the Commission in his individual capacity, and neither the members of the Commission nor any official executing the Bonds shall be liable personally on the Bonds or be subject to any personal liability or accountability by reason of the issuance thereof. Notwithstanding anything to the contrary contained herein, the Trustee, the Bondholders and any other party entitled to seek payment from the Commission under or to enforce this Indenture and the Bonds will be entitled to look solely to the Trust Estate, and such collateral, if any, as may now or hereafter be given to secure the payment of the obligations of

the Commission under this Indenture and the Bonds, and no other property or assets of the Commission or any officer or director of the Commission shall be subject to levy, execution or other enforcement procedure for the satisfaction of the remedies hereunder, or for any payment required to be made under this Indenture and the Bonds, or for the performance of any of the covenants or warranties contained herein.

SECTION 1208. *Successors and Assigns.* All the covenants, promises and agreements in this Indenture contained by or on behalf of the Commission, or by or on behalf of the Trustee, shall bind and inure to the benefit of their respective successors and assigns, whether so expressed or not.

SECTION 1209. *Form of Documents Delivered to Trustee.* In any case where several matters are required to be certified by, or covered by an opinion of, any specified Person, it is not necessary that all such matters be certified by, or covered by the opinion of, only one such Person, or that they be so certified or covered by only one document, but one such Person may certify or give an opinion with respect to some matters and one or more other such persons as to other matters, and any such Person may certify or give an opinion as to such matters in one or several documents.

Any certificate of a Commission Official or the Commission may be based, insofar as it relates to legal matters, upon a certificate or opinion of, or representations by, Counsel, unless such official or officer knows, or in the exercise of reasonable care should know, that the certificate or opinion or representations with respect to the matters upon which his or her certificate or opinion is based are erroneous. Any opinion of Counsel may be based, insofar as it relates to factual matters, upon a certificate or opinion of, or representations by, a Commission Official stating that the information with respect to such factual matters is in the possession of the Commission, unless such Counsel knows, or in the exercise of reasonable care should know, that the certificate or opinion or representations with respect to such matters are erroneous.

Where any Person is required to make, give or execute two or more applications, requests, consents, certificates, statements, opinions or other instruments under this Indenture, they may, but need not, be consolidated and form one instrument.

SECTION 1210. *Consent of Holders.* Any consent, request, direction, approval, objection or other instrument required by this Indenture to be signed and executed by the Bondholders may be in any number of concurrent writings of similar tenor and must be signed or executed by such Bondholders in person or by an agent appointed in writing. Proof of the execution of any such consent, request, direction, approval, objection 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 of this Indenture, and shall be conclusive in favor of the Trustee with regard to any action taken by it 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 within such jurisdiction that the Person signing such writing acknowledged the execution thereof, or by an affidavit of any witness to such execution.

(b) The Trustee may establish a record date for the purpose of identifying Bondholders entitled to issue any such consent, request, direction, approval or instrument.

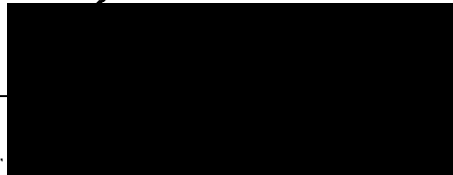
IN WITNESS WHEREOF, the Pennsylvania Turnpike Commission has caused this Indenture to be executed by its Chairman and its official seal to be impressed hereon and attested by its Secretary and Treasurer, and First Union National Bank (formerly, Fidelity Bank, National Association) has caused this Indenture to be executed on its behalf by its President or a Vice President and its corporate seal to be impressed hereon and attested by its Secretary or an Assistant Secretary, all as of the day and year first above written.

PENNSYLVANIA TURNPIKE
COMMISSION


Chairman

(Seal)

ATTEST:



FIRST UNION NATIONAL BANK,
(formerly FIDELITY BANK, NATIONAL
ASSOCIATION)

By _____
Vice President

(Seal)

ATTEST:

IN WITNESS WHEREOF, the Pennsylvania Turnpike Commission has caused this Indenture to be executed by its Chairman and its official seal to be impressed hereon and attested by its Secretary and Treasurer, and First Union National Bank (formerly, Fidelity Bank, National Association) has caused this Indenture to be executed on its behalf by its President or a Vice President and its corporate seal to be impressed hereon and attested by its Secretary or an Assistant Secretary, all as of the day and year first above written.

PENNSYLVANIA TURNPIKE
COMMISSION

By _____
Chairman

(Seal)

ATTEST:

FIRST UNION NATIONAL BANK,
(formerly FIDELITY BANK, NATIONAL
ASSOCIATION)

By _____
Vice _____

(Seal)

ATTEST:

\$288,265,000
PENNSYLVANIA TURNPIKE COMMISSION
VARIABLE RATE DEMAND TURNPIKE REVENUE BONDS,
SERIES A OF 2002

Consisting of
Series A-1 Bonds \$96,090,000
Series A-2 Bonds \$96,090,000
Series A-3 Bonds \$96,085,000

CLOSING BOOK INDEX

1. SUPPLEMENTAL TRUST INDENTURE NO. 1
2. PURCHASE CONTRACT
3. TAX REGULATORY AGREEMENT AND NON-ARBITRAGE CERTIFICATE
4. CONTINUING DISCLOSURE UNDERTAKING
5. STANDBY BOND PURCHASE AGREEMENT (Series A-1 Bonds)
6. STANDBY BOND PURCHASE AGREEMENT (Series A-2 Bonds)
7. STANDBY BOND PURCHASE AGREEMENT (Series A-3 Bonds)
8. PRELIMINARY OFFICIAL STATEMENT
9. OFFICIAL STATEMENT
10. CLOSING RECEIPT
11. REMARKETING AGREEMENT
12. SPECIMEN BOND (See Exhibit "D" to No. 17)
13. APPROVAL LETTER(S) OF ATTORNEY GENERAL
14. CERTIFICATE OF SECRETARY OF COMMONWEALTH as to names and expirations of terms of office of Members of Commission
15. GENERAL CERTIFICATE OF COMMISSION (677767.1)
16. GOVERNOR'S CERTIFICATE regarding approval of the Series A Bonds and authorization re facsimile signature on the Series A Bonds
17. CERTIFICATE OF ASSISTANT SECRETARY - TREASURER OF COMMISSION

18. CERTIFICATE OF COMMISSION OFFICIAL
AUTHORIZING INVESTMENTS
19. ORDER AND CERTIFICATE DIRECTING APPLICATION OF FUNDS
20. FORM 8038-G
21. OPINION OF COMMISSION COUNSEL
22. CERTIFICATE OF COMMISSION TO BANKS, pursuant to
Standby Bond Purchase Agreements
23. CERTIFICATE OF BANK pursuant to Purchase Contract (Series A-1 Bonds)
24. CERTIFICATE OF BANK pursuant to Purchase Contract (Series A-2 Bonds)
25. CERTIFICATE OF BANK pursuant to Purchase Contract (Series A-3 Bonds)
26. OPINIONS OF COUNSEL TO BANK
(Series A-1 Bonds)
 - a. Opinion of Special Counsel
 - b. Opinion of German Counsel
27. OPINIONS OF COUNSEL TO BANK
(Series A-2 Bonds)
 - a. Opinion of Special Counsel
 - b. Opinion of German Counsel
28. OPINIONS OF COUNSEL TO BANK
(Series A-3 Bonds)
 - a. Opinion of Special Counsel
 - b. Opinion of German Counsel
29.
 - a. RATING LETTER OF MOODY'S INVESTORS SERVICE
 - b. RATING LETTER OF STANDARD & POOR'S CORPORATION
 - c. RATING LETTER OF FITCH, INC.
30. CERTIFICATE OF SERIES A REPRESENTATIVE with respect to Initial Public
Offering Price, Debt Service Reserve Fund and Standby Bond Purchase
Agreement (See Closing Item No. 3, Exhibit "C")
31. BLUE SKY MEMORANDUM
32. Form of AGREEMENT AMONG UNDERWRITERS
33. OPINION OF UNDERWRITERS' COUNSEL

34. CONSENT OF PURCHASER TO RESTATED INDENTURE
35. BOND COUNSEL OPINION TO PURCHASERS
36. BOND COUNSEL RELIANCE LETTERS TO TRUSTEE, UNDERWRITERS' REPRESENTATIVE, BANK AND RATING SERVICES
37. BOND COUNSEL SUPPLEMENTAL OPINION
38. BOND COUNSEL OPINION pursuant to the Restated Indenture and Section 2.4(c) of Supplemental Indenture No. 1
39. CERTIFICATE OF TRUSTEE (re: trust power and incumbency)
40. DTC LETTER OF REPRESENTATION (on file with DTC)
41. UCC FINANCING STATEMENT AMENDMENTS with respect to the Restated Indenture (amending UCC Financing Statement filed 12/4/01)
42. COMMISSION DIRECTION TO REDEEM SERIES O BONDS AND SERIES P BONDS
43. NOTICE OF REDEMPTION OF SERIES O BONDS AND SERIES P BONDS
44. VERIFICATION REPORT OF Causey Demgen & Moore, Inc.
45. OPINION OF BOND COUNSEL RE: AMENDED AND RESTATED INDENTURE
46. DEFEASANCE OPINION OF BOND COUNSEL
47. AMENDED AND RESTATED TRUST INDENTURE, dated as of March 1, 2001 and effective as of September 5, 2002

Exhibit B

FORM OF BORROWING REQUEST

[____], 20[____]

(PENNSYLVANIA TURNPIKE COMMISSION)

To: DVRC Pennsylvania Turnpike II Limited Partnership
c/o Delaware Valley Regional Center, LLC
1845 Walnut Street, Suite 2500
Philadelphia, Pennsylvania 19103
Attention: Young Min Ban
Telecopy: [REDACTED]

With a copy to:

Raffaele & Puppio, LLP
19 West Third Street
Media, Pennsylvania 19603
Attention: Mike Puppio
Telecopy: [REDACTED]

Re: Loan Agreement dated as of August 4, 2016

Ladies and Gentlemen:

This Borrowing Request is delivered to you pursuant to Section 2.1 of that certain Loan Agreement, dated as of August 4, 2016 (as amended, modified, waived, supplemented or restated from time to time, the "Loan Agreement"), by and between PENNSYLVANIA TURNPIKE COMMISSION, as borrower (in such capacity, "Commission") and DVRC PENNSYLVANIA TURNPIKE II LIMITED PARTNERSHIP, as lender. Capitalized terms used but not defined herein shall have the meanings provided in the Loan Agreement.

Pursuant to Section 2.1 of the Loan Agreement:

1. In connection with the Tranche [1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16] Loan made pursuant to Section 2.1 [(a)][(b)][(c)][(d)][(e)][(f)][(g)][(h)][(i)][(j)][(k)][(l)][(m)][(n)][(o)][(p)] of the Loan Agreement, Commission hereby requests an advance in the principal amount of \$[_____].
2. Commission hereby requests that such advance be made on the following date: [____], 20[____].
3. Commission hereby requests that such advance be made to the following account: [_____].

Attached to this Borrowing Request as Exhibit A is evidence of Qualifying Expenditures made or a plan for Qualifying Expenditures to be made or reimbursed with the proceeds of such advance.

IN WITNESS WHEREOF, the undersigned have executed this Borrowing Request as of the date first written above.

PENNSYLVANIA TURNPIKE COMMISSION

By: _____
Name:
Title:

Exhibit C
ECONOMIC IMPACT STUDY

Economic Impact Analysis of the PTC Highway Capital Project

September 4, 2015

Prepared by:
Impact DataSource
Economic Consulting, Research, and Analysis
Austin, TX

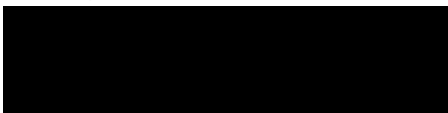


Table of Contents

I. Executive Summary	3
II. Geographic Area Impacted	8
III. About the Project and Verification of Model Inputs	11
IV. Discussion of RIMS II Methodology & Multipliers	18
V. Separate Impacts from Development Expenditures	24
VI. Combined Impacts of the Project	31
VII. Conduct of the Analysis	32
APPENDIX A Indirect and Induced Impact Calculations	34
APPENDIX B RIMS II Multipliers (Type II)	40
APPENDIX C Demographics of Impacted Area	41

I. Executive Summary

Regional Center: The Delaware Valley Regional Center ("DVRC" or "the Regional Center") is an existing regional center under the U.S. Citizenship and Immigration Services Immigrant Investor Program (the "EB-5 Program").

Project Studied in This Analysis: The EB-5 capital investment activity studied in this report consists of the construction and renovations of the Pennsylvania Turnpike in the Commonwealth of Pennsylvania by the Pennsylvania Turnpike Commission ("PTC") (the "PTC Highway Capital Project" or the "Project"). Specifically, the Project entails spending approximately \$1.75 billion to design and construct/improve approximately 130 miles of the Pennsylvania Turnpike during FY2016 to FY2020. The Project will be broken out into numerous distinct components, and construction will be carried out through approximately 200 construction contracts. The Project's 17 main components are outlined in the Project's business plan.¹

Geographic Impact Area: EB-5 investments deployed into the Project will be used to construct and renovate various sections of the Pennsylvania Turnpike in Pennsylvania. The result of this investment will have an impact area consisting of the entire Commonwealth of Pennsylvania. The RIMS II multipliers utilized in this analysis are reflective of this state-wide area.

DVRC is currently designated for a contiguous 12-county geographic area that encompasses the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metropolitan Statistical Area (MSA) and two other counties in the Delaware Valley region. The 12 counties are listed in the following table.

Table 1: Current Regional Center Counties

Delaware	New Jersey	Pennsylvania
New Castle County*	Burlington County*	Berks County
	Camden County*	Bucks County*
Maryland	Cumberland County	Chester County*
Cecil County*	Gloucester County*	Montgomery County*
	Salem County*	Philadelphia County*

* Included in the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA.

The impact area of the Project overlaps the current geography of the Regional Center by the five Pennsylvania counties listed in Table 1.

¹ Please note that PTC's fiscal year is on a July-to-June basis.

Given the scope and impact of the Project, the geographic designation of the Regional Center should be expanded to include the entire Commonwealth of Pennsylvania, in addition to the existing seven counties in Delaware, Maryland, and New Jersey.

Please see Section II for more details on the geographic impact area.

Industries: The Project's primary activities will occur in the following industries.

Table 2: Project Industries
(NAICS and Corresponding RIMS II Designations)

NAICS Industry	Corresponding RIMS II Industry
2373 Highway, Street, and Bridge Construction	230000 Construction
5413 Architectural, Engineering, and Related Svcs	541300 Architectural, engineering, & related svcs
5411 Legal Services	541100 Legal services
2211 Electric Power Generation, Transmission, and Distribution	2211A0 Electric power generation, transmission, and distribution
4238 Machinery, Equipment, & Supplies Merchant Wholesalers	420000 Wholesale trade

Job Calculation Related to Construction & Development Activities: As discussed in the detail of this report, the job creation related to construction and development activity relies only on categories of development expenditures that have been discussed as includable by the USCIS. The development expenditures considered in this analysis are expenditures on: hard construction, architectural and engineering services, legal services, electric utilities, and purchases of machinery and equipment. All other Project costs are excluded from the impact model.

The Project timeline indicates that these development activities require distinct timeframes, which affects the calculation of job creation projections.

- Hard construction and related activities are expected to last more than two years. Therefore, this analysis considers direct, indirect, and induced impacts from activities related to hard construction, architectural and engineering, legal services, and electric utilities.
- This analysis only considers indirect and induced impacts from expenditures on machinery and equipment. A discussion of the indirect and induced calculation methodology is provided in Appendix A.

More details on the Project timeline may be found in Section III.

A Note on Job Calculation Related to Operations Activities: This analysis only considers jobs created from construction and development activities of the Project, which yields more conservative

estimates than if additional employment from any new PTC operations and/or increased employment from improved transportation facilities were included.

Economic Impacts Summarized: The job creation and economic impacts resulting from the Project are summarized next, in Table 3. Detailed estimates of employment, economic output, and household earnings for the Project are found in Sections V through VI and show the distribution of total impacts across 20 major industry categories. The summary table below identifies:

- (a) Employment: The permanent jobs to be created in the impact area.
- (b) Economic Output: The demand for additional services (economic output) created in the impact area.
- (c) Household Earnings: The wages and salaries, employer provided benefits, and proprietors' income in the impact area.

Table 3 also itemizes the demand for additional services (economic output) created by the Project for the following specific categories:

- (a) Utilities: This category represents the demand for utilities such as electricity, natural gas, and water and wastewater services.
- (b) Maintenance and repair construction services: This category represents the demand for maintenance and repair services created in the impact area as a result of the Project.
- (c) Manufacturing: This category represents the additional demand for manufactured goods produced in the impact area supported by the investment and subsequent economic activity.
- (d) Business services: This category includes three industry categories as detailed by the RIMS II output related to professional business support services. The category represents the additional demand for (1) professional, scientific, and technical services, (2) management of companies and enterprises, and (3) administrative and waste management services in the regional center area supported by the investment and subsequent economic activity.

These four specific categories represent a subset of total economic output generated in the impact area.

Table 3: Economic Impact Summary

Activity (RIMS II)	Employment	Economic Output	Household Earnings
Construction (230000)	20,686.9	\$2,842,857,803	\$885,856,445
Architectural, engineering, & related svcs (541300)	2,040.5	\$300,959,931	\$97,056,820
Legal services (541100)	278.3	\$42,651,826	\$16,791,313
Electric power generation, trans., & distn. (2211A0)	67.1	\$15,921,830	\$3,928,250
Wholesale trade (420000)*	97.9	\$13,124,348	\$3,767,244
Total	23,170.7	\$3,215,515,738	\$1,007,400,071

* Indirect and induced effects only.

Note: Total may not sum due to rounding.

Itemized Demand for Additional Services	Economic Output
Utilities	\$47,095,995
Maintenance & repair construction	\$1,166,954,612
Manufacturing	\$450,333,271
Business Services	\$439,722,235
Total for Four Categories	\$2,104,106,112

Terminology Clarification: This economic analysis presents “reasonable methodologies” as considered in 8 C.F.R. § 204.6(j) (4)(iii) to demonstrate job creation. As stated in the regulations, the proof of job creation in the context of regional centers is not Forms I-9, payroll records, or similar documentation, but rather “reasonable methodologies” such as this report.

Accordingly, a discussion of terminology is required. The term “direct jobs” used in this report should not be confused with the concept of direct job creation measurable by tax records, Forms I-9, or other similar documents as set forth in 8 C.F.R. § 204.6(j)(4)(i)(A). That section of the regulations considers jobs held by the actual employees of the new commercial enterprise, specifically in the non-regional center context.

When economists use the term “direct jobs” in the context of an economic impact study using RIMS II, what is typically meant are jobs created directly by expenditures or revenues (which in the EB-5 Pilot program results from an immigrant investor’s investment). The verification of job creation based on this study will be the construction expenditures outlined in Section III.

The above is a summary of the study and the details are provided below. The report includes the following information:

- Impact area of the Project,
- Discussion of the Project including a verification of inputs for the model and a discussion of the construction timeline,
- Discussion of the RIMS II model and list of RIMS II multipliers used in the analysis,
- Presentation of the projected impacts from the Project,
- Discussion of Impact DataSource,
- Appendix A demonstrating the methodology used to isolate the indirect and induced effects of construction activity lasting less than 24 months (machinery- and equipment-related expenditures only),
- Appendix B containing RIMS II multipliers (Type II), and
- Appendix C describing the demographics of the impact area.

II. Geographic Area Impacted

This section discusses the geography of the existing Regional Center area and the impact area of the Project. As discussed previously, the impact area of the Project overlaps the existing geographic footprint of the Regional Center by the following five Pennsylvania counties: Berks, Bucks, Chester, Montgomery, and Philadelphia.

DVRC is currently designated for a contiguous 12-county geographic area that encompasses the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metropolitan Statistical Area (MSA) and two other counties in the Delaware Valley region. The 12 counties are listed in the following table.

Table 4: Current Regional Center Counties

Delaware	New Jersey	Pennsylvania
New Castle County*	Burlington County*	Berks County
	Camden County*	Bucks County*
Maryland	Cumberland County	Chester County*
Cecil County*	Gloucester County*	Montgomery County*
	Salem County*	Philadelphia County*

* Included in the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA.

Impact Area of the PTC Highway Project

The Project activities are located along the Pennsylvania Turnpike (i.e., the I-76 and I-476 corridors in southern and eastern Pennsylvania). The Project will have an economic impact area consisting of the entire Commonwealth of Pennsylvania. The 17 main components of the Project span 13 counties, as shown in the following table.

Table 5: Specific Component Counties

County	Component
1 Allegheny County, PA	MP 57-67 Total Reconstruction Project
	MP 40-48 Total Reconstruction Project
	MP 53-57 Total Reconstruction Project
	MP 49-53 Total Reconstruction Projection
	MP 26-31 Total Reconstruction Project
2 Beaver County, PA	MP 12-14 Reconstruction
3 Bedford County, PA	MP 149-155 Total Reconstruction Project
	MP 124-134 Reconstruction Project
4 Berks County, PA	MP 298-312 Reconstruction Project
5 Bucks County, PA	MP A38-A44 Total Reconstruction Project

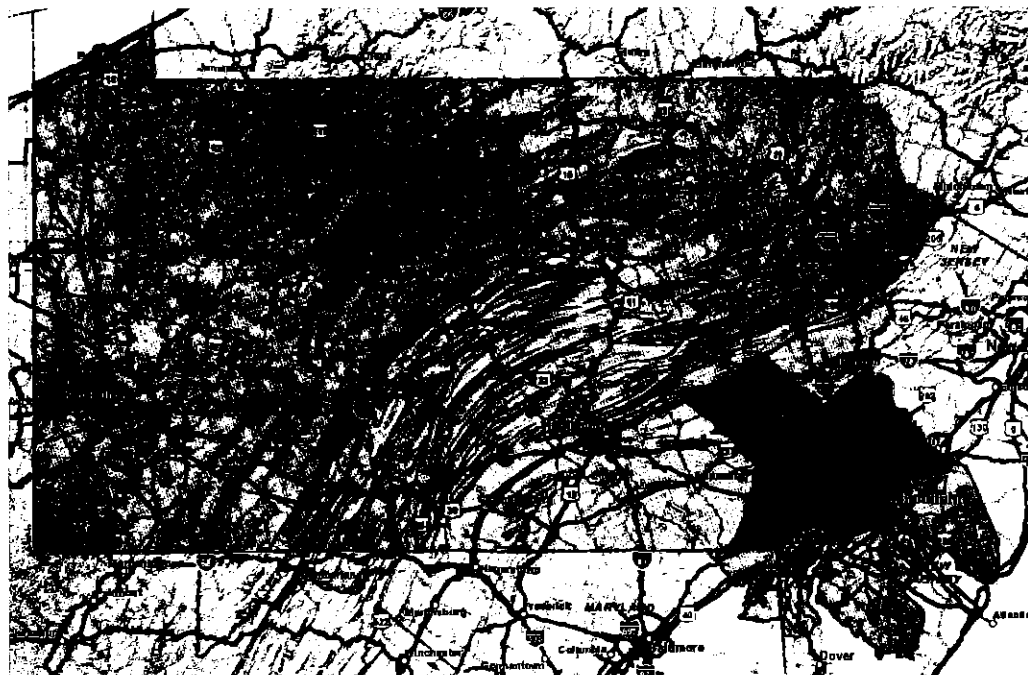
PTC Highway Project | Delaware Valley Regional Center | EB-5 Economic Analysis

6	Butler County, PA	MP 28-31 Total Reconstruction Project
7	Carbon County, PA	Milepost 28 - Freedom Road Bridge Replacement
8	Chester County, PA	NB-610 Hawk Falls Bridge Replacement
9	Dauphin County, PA	MP 298-312 Reconstruction Project
		MP 312-319 Reconstruction Project
10	Montgomery County, PA	EB-314 Swatara Creek Bridge Replacement
		MP A20-A31 Total Reconstruction Project
		MP A31-A38 Total Reconstruction Project
		MP A38-A44 Total Reconstruction Project
11	Somerset County, PA	MP 124-134 Reconstruction Project
12	Westmoreland County, PA	MP 57-67 Total Reconstruction Project
13	York County, PA	MP 242-245 Total Reconstruction Project

The Project will therefore have an impact area consisting of the 13 counties hosting the various components, as listed in Table 5, as well as the rest of the Commonwealth of Pennsylvania.

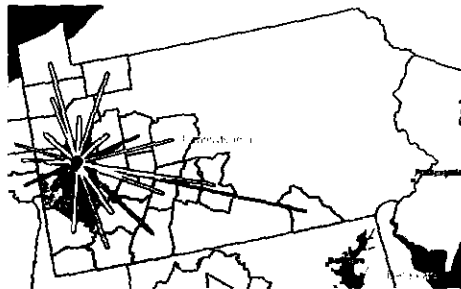
The impact area of the Project is shown (in TEAL) in the map below, along with the approximate locations of the Project's activities. The map also demonstrates how the proposed impact area overlaps the current Regional Center area. The overlapping counties are Berks, Bucks, Chester, Montgomery, and Philadelphia in Pennsylvania.

Figure 1: Map of Impact Area and Current Regional Center Area



The massive scope of the Project indicates that functional economies of the Project locations reasonably include the entire Commonwealth of Pennsylvania. The 13 counties hosting the individual components comprise essentially the entire southern half of the state. Businesses located throughout these 13 counties rely on workers from across the state; and the workers and businesses directly impacted by the Project are also located throughout the state.

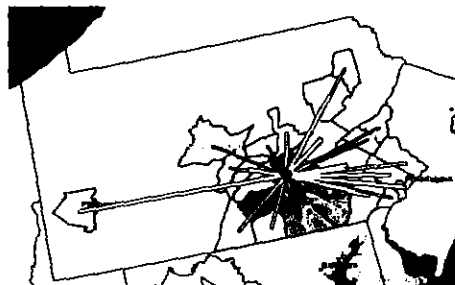
To demonstrate the economic ties of these areas, the following figures represent a sampling of the commuting patterns for workers in several counties that host Project activities. As demonstrated in the figures, an overwhelming majority of the state will be impacted by the Project activities.



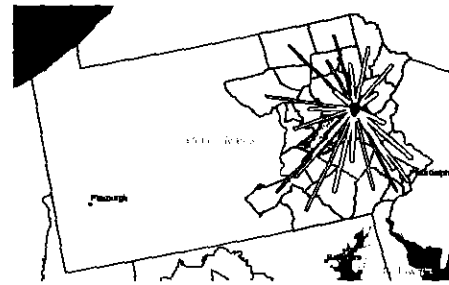
Butler County (top 25 counties, representing 95.6% of workforce in Butler County)



Bedford County (top 25 counties, representing 92.2% of workforce in Bedford County)



Dauphin County (Harrisburg) (top 25 counties, representing 92.6% of workforce in Dauphin County)



Carbon County (top 25 counties, representing 96% of the workforce in Carbon County)

III. About the Project and Verification of Model Inputs

Overview

The PTC Highway Project consists of construction and renovation of multiple sections of the 60+ year old Pennsylvania Turnpike. The Pennsylvania Turnpike consists of a toll network of interstate highways across southern Pennsylvania, comprising, at various points, Interstates 76, 70, and 276. *Extensions of the Turnpike also include Interstate 476 in eastern Pennsylvania.* The Project includes multiple individual components focusing on construction and renovations of roadways, bridges, tunnels, and toll plaza and interchange. These components will improve safety of transport and increase efficiency of transportation across the state and in the cities directly connected to the Turnpike, including Philadelphia and Pittsburgh.

The major initiatives of the Project include the following:

- Highway improvements encompassing the design and reconstruction of the Turnpike Mainline and addition of a third lane in all reconstruction activities.
- Bridge projects focusing on the rehabilitation or replacement of bridges that are classified as structurally deficient.
- Equipment and facilities improvements including repair and replacement of maintenance facilities and redevelopment of service plazas.
- Planning and designing new interchanges on the Turnpike and converting existing toll plaza with all-electronic toll facilities.
- Replacing other necessary facets of the highway including lighting, barriers and guide rail, noise barriers and retention walls, and drainage systems.

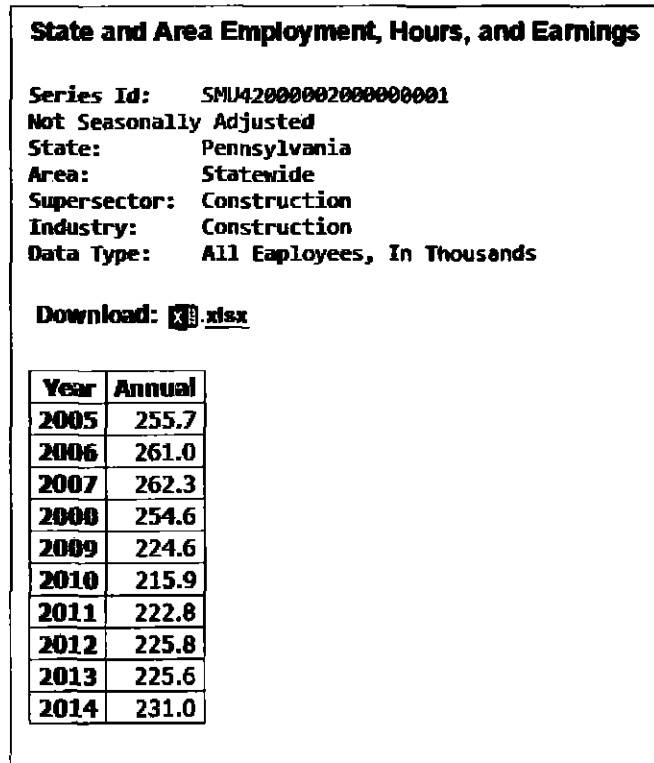
Project activities will occur throughout southern and eastern Pennsylvania and will impact the entire state. Specifically, the Project will create jobs throughout the Commonwealth of Pennsylvania, as the areas hosting Project activities have close economic ties with the rest of the state (demonstrated in Section II above).

The Commonwealth of Pennsylvania had an average of 7.9% unemployment in 2012 with a total of 507,943 unemployed, based on data from the Local Area Unemployment Statistics (LAUS) program of the Bureau of Labor Statistics (BLS). Employment trends improved over the next few years, with the state exhibiting an average of 5.8% unemployment in 2014 with a total of 369,962 unemployed.

The construction industry in particular in Pennsylvania experienced a significant decline over 2008–2010 and has been exhibiting slow growth since then. The following snapshot shows a summary of

data from the BLS on annual employment in the construction industry in Pennsylvania over the last 10 years.

Figure 1: BLS Annual Construction Employment in Pennsylvania, 2005–2014



According to this data, employment levels still remain far below pre-recession levels.

Based on these statistics and the trends for statewide unemployment, the Commonwealth of Pennsylvania will have an available workforce for the development of the Project.

Construction Timeline Discussion

It is anticipated that construction activities of the Project will last for at least 5 years. To accommodate the spending of funds over the long construction timeline, the Project is employing a tranche investor deal structure. Tranches of investor's I-526 filings will be spread out over enough time to allow for the inclusion of jobs throughout the 5-year construction period. More details on the tranche deal system and the Project timeline are provided in the business plan.

According to the USCIS, if a Project's construction activity lasts less than two years, the indirect and induced employment related to that activity may be counted, but the related direct employment may

not be counted in the total job count. However, if a Project's construction activity lasts longer than two years, then direct jobs resulting from that activity may be counted. The following clarification is provided in a memorandum from Donald Neufeld on June 17, 2009 (Neufeld was Acting Associate Director, Domestic Operations for USCIS at the time of the memorandum):

*"USCIS also has concluded that direct and indirect construction jobs that are created by the petitioner's investment and that are expected to last at least 2 years may now count as permanent jobs for I-526 and I-829 purposes."*²

Hence, direct employment related to hard construction expenditures are included.

Reasonableness of Construction Timeline

As discussed in more detail below, this Project is unique, without directly comparable figures. The construction plans were developed by an experienced team following PTC guidelines. Please see "Reasonableness of Development Expenditures" sub-section below and the "Project Uses of Capital" section in the business plan for more information.

Development Budget

The development budget for the Project is shown in the following tables. The first table is a summary of the development expenditures, as shown in Exhibit H of the business plan.

Table 6: Summary of Development Expenditures, by Category (\$ in millions)

Category	Construction	Manufacturing	Prof. Services	Finance, Insurance, Real Estate, and Legal	Utilities	Total
Road/Safety	\$184.94	\$14.70	\$22.40	\$6.32	\$1.38	\$229.74
Bridge, Tunnel & Misc Structure	\$137.71	\$10.95	\$16.68	\$4.70	\$1.03	\$171.07
Total Reconstruction	\$999.66	\$79.48	\$121.08	\$34.15	\$7.45	\$1,241.82
Interchanges	\$24.78	\$1.97	\$3.00	\$0.85	\$0.18	\$30.78
Highway Miscellaneous	\$62.58	\$4.98	\$7.58	\$2.14	\$0.47	\$77.74
Total Project Costs						\$1,751.15

² Available at

[http://www.uscis.gov/sites/default/files/USCIS/Laws/Memoranda/Static Files Memoranda/2009/eb5_17jun09.pdf](http://www.uscis.gov/sites/default/files/USCIS/Laws/Memoranda/Static%20Files/Memoranda/2009/eb5_17jun09.pdf).

The next table also provides detail on the specific elements and amounts that are included in the RIMS II model to project job creation and other economic impacts. Only allowable expenditures on hard construction, architectural and engineering, legal services, electric utilities, and equipment/machinery purchases are included in the model.

Table 7: Development Budget for RIMS II Calculations

Activity	Costs	RIMS II Industry	Included in RIMS Model
Construction	\$1,409,676,020	230000	\$1,409,676,020
Manufacture	\$112,073,621	420000	\$16,250,675*
Professional services	\$170,737,158	541300	\$170,737,158
Finance, Insurance, Real Estate, & Legal	\$48,156,634	541100	\$24,078,317†
Utilities	\$10,506,902	2211A0	\$10,506,902
TOTAL	\$1,751,150,336		\$1,631,249,072

* Represents a 14.5% wholesale margin; see Footnote 3.

† Represents 50% of the original line item cost; see "Note on Legal Services Industry Clarification and Reasonableness of Amount Included/Excluded" subsection below.

The costs that are included in the RIMS II industry model are summarized by industry in the following table.

Table 8: Summary of Expenditures by RIMS II Industry

RIMS II Industry	Activity	Amount
230000	Hard Construction	\$1,409,676,020
541300	Architecture & Engineering	\$170,737,158
541100	Legal services	\$24,078,317
2211A0	Electric manufacturing	\$10,506,902
420000	Equipment- & Machine-related Purchases ³	\$16,250,675
Not Included		\$119,901,263
Total		\$1,751,150,336

As discussed previously, construction of the Project is anticipated to last at least 5 years. Therefore, consistent with USCIS guidance, the direct economic impacts of the long-term development activity

³ Equipment- and machinery-related purchase expenditures have been margined to 14.5% of the line-item cost, so as to only estimate job creation resulting from expenditures at the wholesale level (i.e., the value received by the wholesale merchants). This approach excludes job creation resulting from the manufacturing activity, as it is assumed the equipment is manufactured outside of the impact area. The total projected equipment- and machinery-related expenditures are \$112.1 million; 14.5% of that value is approximately \$16.3 million. The projected wholesale margin of 14.5% is based on the input-output commodity composition of PES for Construction machinery manufacturing by the General industrial, including materials handling, equipment category (<https://www.bea.gov/regional/rims/rimsii/viewerdistribution.aspx>)

(hard construction, architecture and engineering, legal services, and electric utility-related activities) are estimated in the total job creation.⁴

Expenditures on hard construction activity, architecture and engineering, legal services, and electric utilities (totaling approximately \$1.410 billion, \$170.7 million, \$24.1 million, and \$10.5 million, respectively), are used as the inputs into the RIMS II model to project direct, indirect, and induced job creation and other economic impacts resulting from the long-term development of the Project.

This analysis only considers indirect and induced impacts resulting from expenditures on equipment and machinery. Expenditures on these purchases, totaling approximately \$16.3 million (after applying the wholesale margin; see Footnote 3), are used as the input into the RIMS II model to project indirect and induced job creation and other economic impacts resulting from the increased demand for equipment and machinery.

As noted in the development budget in Exhibit H of the business plan, development costs are given in Year of Expenditure (YOE) prices, which means that: (i) the yearly expenditures presented in the budget have been adjusted for inflation from the current to the expected year of construction⁵; and (ii) the yearly expenditures presented in the budget include contingency costs. Accordingly, proper adjustments have been made to the Project expenditures before applying the RIMS II multipliers to calculate the job creation. The methodology that accounts for YOE prices is described in Section IV below.

Construction Costs by Quarter

Construction costs by quarter are presented in Exhibit H of the business plan; a summary is presented in Table 9 below. The quarterly construction expenditures represent a general, anticipated total construction amount and includes all costs involved with construction, including contingencies and annual inflation. As previously demonstrated, only \$1.63 billion (prior to price adjustments) of the entire \$1.75 billion from the development budget is included in the RIMS II model.

⁴ As per USCIS remarks during its June 2015 EB-5 Interactive session, direct jobs resulting from includable softs costs that are closely related to the construction of Project (such as architecture and engineering) are allowed to be included in the total job count when construction lasts for at least 24 months.

⁵ While USCIS has recently indicated they will allow hard cost contingencies to be included for job creation calculations at the I-526 stage, this analysis takes a more conservative approach and excludes the estimated amount of contingency.

Table 9: Quarterly Construction Costs (YOE)

	2015 ⁶	2016	2017	2018	2019	2020	Total
Q1		\$70.28	\$61.17	\$68.13	\$86.94	\$78.07	\$364.59
Q2		\$109.01	\$94.88	\$105.68	\$134.84	\$121.08	\$565.49
Q3		\$94.88	\$105.68	\$134.84	\$121.08		\$456.48
Q4	\$70.28	\$61.17	\$68.13	\$86.94	\$78.07		\$364.59
Yearly Total	\$70.28	\$335.34	\$329.86	\$395.59	\$420.93	\$199.15	\$1,751.15

Reasonableness of Development Expenditures

This infrastructure Project is not common in the realm of EB-5 – it is a very large endeavor, and it is not a typical hotel, assisted living facility, shopping center, or apartment building, as is common of EB-5 projects. As such, there are not readily available benchmarks for comparison to the development costs. Even so, Project development plans were created by experienced professionals following guidelines, which can be examined for reasonableness.

As explained in detail in the “Project Uses of Capital” section of the business plan, development costs are calculated by the state using the Federal Highway Administration Guidelines and quantities calculated by design professionals. These costs include detailed analysis of a number of relevant factors. Please see the “Project Uses of Capital” section, Exhibit E, and Exhibit F in the business plan.

The following excerpt from the same section of the business plan provides a summary of the projection process.

“PTC does not create a traditional line item budget that breaks down expenditures in to component parts. PTC utilizes two in-depth public guidelines to estimate construction costs. Its main guidelines are “Pennsylvania Turnpike Design Consistency Guidelines” last updated in June 2015 which lays out roadway design and structural guidelines along with specification and cost estimating methodologies. PTC also supplements its own guidelines with that published by Pennsylvania Department of Transportation Publication 408 which provides construction specifications for PennDOT projects. PTC then utilizes its own proprietary software called “PTC Tab Wizard” which allows PTC and its partners to input information and guidelines regarding the project and estimate the final total cost. Please refer to Exhibit E, F and G for the complete methodology used to estimate these costs. Once costs are established, PTC then puts out public notice for bids on the projects in accordance with PTC Construction Services Procurement Procedure guidelines described below.”

⁶ Please note that PTC’s fiscal year runs July to June; therefore, FY2016 includes the third and fourth quarters of 2015.

Note on Legal Services Industry Clarification and Reasonableness of Amount Included/Excluded

The Project budget, as demonstrated in Exhibit H of the business plan, combines all expenditures on Finance, Insurance, Real Estate, & Legal services into one line item. Detail on the amounts allocated to each of these industry-types is not available. As such, this analysis only uses one industry to cover these expenditures and takes a conservative approach by only including half of their total.

For the projection of job creation, these expenditures are modeled under the legal services industry (RIMS II 541100); however, any portion of the total expenditures on this line item could also reasonably fall under any of the following industries:

- RIMS II 54100 – Insurance carriers (NAICS 5241),
- RIMS II 524200 – Insurance agencies, brokerages, and related activities (NAICS 5242),
- 531000 – Real estate (NAICS 5313), or
- 522A00 – Nondepository credit intermediation and related activities (NAICS 5222).

As the following table demonstrates, the RIMS II multipliers for Legal services in the impact area are in the middle of the range of these other potential multipliers.

Table 10: Comparable Multipliers for Commonwealth of Pennsylvania by Industry

NAICS	RIMS II	RIMS II Industry	Final-demand Employment Multiplier
5222	522A00	Nondepository credit intermediation & related activities	10.2175
5241	524100	Insurance carriers	13.3112
5242	524200	Insurance agencies, brokerages, & related activities	15.7170
2313	531000	Real estate	17.4436
5411	541100	Legal services	14.1304

In summary, the classification of the Finance, Insurance, Real Estate and Legal line item under the RIMS II 451100 – Legal services industry is a moderate and reasonable classification for the projection of job creation estimates.

This approach for modeling the economic impacts from these expenditures is reasonable.

IV. Discussion of RIMS II Methodology & Multipliers

General Discussion of the RIMS II Methodology

The economic impact estimates in this report are based on the Regional Input-Output Modeling System (RIMS II), a widely used regional input-output model developed by the U.S. Department of Commerce, Bureau of Economic Analysis. The RIMS II model is a standard tool used to estimate regional economic impacts. The economic impacts estimated using the RIMS II model are generally recognized as reasonable and plausible, assuming the data input into the model is accurate or based on reasonable assumptions. The RIMS II model is described in basic detail below.

Generally speaking, input-output modeling attempts to estimate the changes that occur in all industries based on a change in the demand for the output of an industry. An input-output model allows an analyst to identify the subsequent changes occurring in various industries within a regional economy in order to estimate the total impact on the economy. Total economic impact is the sum of three components: (1) direct, (2) indirect, and (3) induced impacts.

If the demand for the output of an industry, measured by industry sales or revenue, increases by \$1 million, total regional output increases by \$1 million. This initial change in output is called the change in direct economic output and is also referred to as the direct expenditure effect. The change in total economic output in the region resulting from the initial change does not stop with the change in direct economic output. Businesses in a variety of industries within the region will be called upon to increase their production to meet the needs of the industry where the initial increase in demand occurs. Furthermore, other suppliers must also increase production to meet the needs of the group of initial supplier firms to the industry. This increase in expenditures by regional suppliers is considered the indirect economic impact of the initial \$1 million in sales, and it is classified as indirect expenditures of the total economic impact or the change in indirect economic output.

The total economic impact of the \$1 million in sales includes one more component, which is the induced impact. All economic activity, whether direct or indirect, that results from the initial increase in demand of \$1 million requires workers, and these workers must be paid for their labor. This means that part of the direct and indirect expenditures is actually in the form of wages and salaries paid to workers in the various affected industries. These wages and salaries will in turn be spent, in part, on goods and services produced locally in the region. This spending is another piece of the regional economic impacts referred to as induced impacts and is classified as induced expenditures or the change in induced economic output.

Based on the initial direct impact, the RIMS II model can be used to estimate the direct, indirect, and induced impacts on economic output, value added, earnings, and employment in a given region. Economic output is gross output and is the sum of the intermediate inputs and final use. This is a duplicative total, in that goods and services will be counted multiple times if they are used in the production of other goods and services. Value added is defined as the value of gross output less intermediate inputs. Household earnings or earnings consist of wages and salaries, employer-provided benefits, and proprietors' income. Employment consists of a count of jobs that include both full-time and part-time workers.

The RIMS II model is based on regional multipliers, which are summary measures of economic impacts generated from changes in direct expenditures, earnings, or employment. Multipliers show the overall impact to a regional economy resulting from a change in demand in a particular industry. Multipliers can vary widely by region. Multipliers are higher for regions with a diverse industry mix. Industries that buy most of their materials from outside the state or region tend to have lower multipliers. Multipliers tend to be higher for industries located in larger areas because more of the spending by the industry stays within the area.

The RIMS II model generates six types of multipliers for more than 400 industrial sectors for any region in the United States. The multipliers include four "final-demand" multipliers and two "direct-effect" multipliers. Final-demand multipliers indicate the impact of changes in final demand for the output of a particular regional industry on total regional output, earnings, employment, and value added. Direct-effect multipliers indicate the impact of changes in regional earnings or employment within a particular industry on total employment or earnings within a region.

Final-demand output multipliers indicate the total regional output (direct, indirect, and induced expenditures) that results from an increase in direct expenditures for a good produced by a particular regional industry. For example, if an industry in a particular region is said to have a final-demand output multiplier of 2, this tells us that a \$1 increase in final demand for the good produced by that industry results in a \$2 increase in total output or expenditures within the regional economy. Final-demand earnings multipliers indicate the impact of an increase in final demand for the good of a particular regional industry on the total earned income of households within the region. Final-demand employment multipliers indicate the increase in total regional employment that results from a \$1 million increase in final demand for the good produced by a particular regional industry. Final-demand value-added multipliers indicate the increase in total regional value added that results from a \$1 million increase in final demand for the good produced by a particular regional industry. Direct-effect earnings multipliers indicate the impact of a \$1 change in earnings within a particular regional industry on total earnings in all industries within a region. Direct-effect employment multipliers

indicate the impact of a change in employment in a particular regional industry on total employment in all industries within a region.

Theoretically, changes in final demand drive the total change in economic output, earnings, and employment. However, these multiplier relationships can be used to estimate impacts in other ways if only limited information is known about a project. For example, the multiplier relationships can be used to estimate the increase in direct economic output based on a given level of employment in a specific industry.

Employment, Household Earnings, and Economic Output Created in the Regional Center

The economic activity directly created by the Project will generate additional economic impacts in the region. The direct activities will result in spin-off economic impacts in the form of indirect and induced economic output, employment, and household earnings. Indirect impacts will be created in new or existing area firms in the area that supply goods and services to the direct businesses. Induced impacts will be created in new or existing local businesses in the area, such as retail stores, gas stations, banks, restaurants, and service companies that may supply goods and services to direct and indirect workers and their families.

The geographic area impacted by the Project will be the impact area described in Section II, encompassing the Commonwealth of Pennsylvania. This analysis uses RIMS II multipliers for this specific impact area and for the stated industries, as shown in Table 11 below, specific to this Project.

Industries Impacted and RIMS II Multipliers Used In This Analysis

The table below lists the NAICS industries and corresponding RIMS II categories impacted by the Project.

Table 11: Project Industries

NAICS Industry	Corresponding RIMS II Industry
2373 Highway, Street, and Bridge Construction	230000 Construction
5413 Architectural, Engineering, and Related Svcs	541300 Architectural, engineering, & related svcs
5411 Legal Services	541100 Legal services
2211 Electric Power Generation, Transmission, and Distribution	2211A0 Electric power generation, transmission, and distribution
4238 Machinery, Equipment, and Supplies Merchant	420000 Wholesale trade

The following table shows the RIMS II multipliers for the impact area for these industries.

Table 12: RIMS II Multipliers Used in Analysis

230000 Construction	Type II
Final-demand Output (dollars)	2.4656
Final-demand Earnings (dollars)	0.7683
Final-demand Employment (number of jobs)	17.9417
Direct-effect Earnings (dollars)	2.0851
Direct-effect Employment (number of jobs)	2.3456
541300 Architectural, engineering, & related services	Type II
Final-demand Output (dollars)	2.1551
Final-demand Earnings (dollars)	0.6950
Final-demand Employment (number of jobs)	14.6116
Direct-effect Earnings (dollars)	1.9469
Direct-effect Employment (number of jobs)	2.7051
541100 Legal services	Type II
Final-demand Output (dollars)	2.1657
Final-demand Earnings (dollars)	0.8526
Final-demand Employment (number of jobs)	14.1304
Direct-effect Earnings (dollars)	1.6070
Direct-effect Employment (number of jobs)	2.8361
2211A0 Electric power generation, transmission, and distribution	Type II
Final-demand Output (dollars)	1.8527
Final-demand Earnings (dollars)	0.4571
Final-demand Employment (number of jobs)	7.8088
Direct-effect Earnings (dollars)	2.0376
Direct-effect Employment (number of jobs)	3.9010
420000 Wholesale trade	Type II
Final-demand Output (dollars)	1.9874
Final-demand Earnings (dollars)	0.5896
Final-demand Employment (number of jobs)	12.0169
Direct-effect Earnings (dollars)	1.9257
Direct-effect Employment (number of jobs)	2.5820

The Type II multipliers above show the direct, indirect, and induced impacts that result from economic activity in the specified industries and impact area.

In addition, the RIMS II multipliers include the distribution of the total impact across 20 major industry categories, which provides the information needed to identify the jobs, household earnings, and economic output generated in various industries.

Price Adjustments

The Project construction costs are presented in YOE dollars, which includes both contingencies and estimated annual inflation for each year of construction. As such, adjustments have been made to the project expenditures prior to using the RIMS II model.

Removal of Contingency Costs

According to the business plan, the development budget includes an estimated contingency of 7% of the estimated construction costs. To remove contingency from the expenditures, the development expenditures are deflated by 7% to find the original cost. For example, the original construction budget is estimated by dividing the final cost of \$1.41 billion by 1.07, yielding a pre-contingency budget of \$1.32 billion.

While USCIS has recently indicated they will allow hard cost contingencies to be included for job creation calculations at the I-526 stage, this analysis takes a more conservative approach and excludes the estimated amount of contingency.

Price Deflator: YOE Dollars to 2010 Dollars

The RIMS II multipliers obtained for this study are the most recent multipliers available. However, the multipliers assume final demand (economic output) in 2010 prices. Impact DataSource makes price index adjustments based on price data from the Bureau of Economic Analysis in order to use the 2010 multipliers and presents the results in 2010 dollars.

According to the Bureau of Economic Analysis (BEA) Price Indexes for Gross Domestic Product (Last Revised on: April 30, 2014), the gross domestic price index in 2010 was 101.215. The projected price indices and deflators for the years of construction are therefore as follows:

Table 13: Price Deflators

Year	Price Index ⁷	Price Deflator ⁸
2015	110.246	1.089
2016	112.145	1.108
2017	114.108	1.128
2018	116.105	1.147
2019	118.137	1.167
2020	120.204	1.188

Applying these individual deflators to the yearly costs yields an overall price deflator of 1.143.⁹ This factor is used to deflate the development expenditures discussed in Section III to 2010 dollars, so as to use the 2010 RIMS II multipliers.

⁷ The BEA provides price index data through 2013. Impact DataSource assumes a 1.75% annual price escalation for years beyond which price index data are available from the BEA, consistent with recent annual price increases observed. For example, the 2015 index was estimated by applying two years of 1.75% annual price escalation to the 2013 index value, which is 106.486. The resulting price index for 2015 is 110.246.

⁸ The price deflator is calculated by dividing the price index of the new year by the price index of 2010, which is 101.215. For example, the 2015 index is approximately $1.089 = \frac{110.246}{101.215}$.

⁹ Applying the individual deflators to their respective years yields the following annual costs, from 2015–2020, respectively, (in millions): \$64.52, \$302.58, \$292.51, \$344.77, \$360.54, and \$167.64. The total of these deflated costs is \$1.53 billion. Dividing the YOE grand total cost of \$1.75 billion by the deflated cost of \$1.53 billion yields an overall deflator of 1.143.

V. Separate Impacts from Development Expenditures

A detailed discussion of the inputs to the model for the calculation of impacts related to development activity is provided in Section III. Section III also addresses the inclusion of the direct job creation for the activities lasting longer than 2 years (hard construction; architecture and engineering; legal services; and electric utilities services).

The multipliers and price deflator are described in Section IV. The following table summarizes the removal of contingencies and the deflation of expenditures to 2010 dollars prior to implementing the RIMS II multipliers.

Table 14: Expenditures Deflated

Activity (RIMS II)	Projected Expenditures (\$2015-2020, millions)	Adjust for 7.0% Contingency	Price Deflator	Projected Expenditures (\$2010, millions)
Construction (230000)	\$1,409.7	\$1,317.5	1.143	\$1,153.0
Architectural, engineering, and related svcs (541300)	\$170.7	\$159.6	1.143	\$139.7
Legal services (541100)	\$24.1	\$22.5	1.143	\$19.7
Electric power generation, trans., & distn. (2211A0)	\$10.5	\$9.8	1.143	\$8.6
Wholesale trade (420000)	\$16.3	\$15.2	1.143	\$13.3
Total	\$1,631.2	\$1,524.5		\$1,334.2

The following table summarizes the direct, indirect, and induced job creation estimated from the Project's long-term development activity. These impacts will be combined with the Project's short-term development activity to represent the total impact from the Project; the combined impacts are discussed in Section VI.

Table 15: Total Job Creation from Development Activity Lasting 2+ Years

Activity (RIMS II)	A Projected Expenditures (\$2010, millions)	B Final-Demand Multiplier*	C Direct-Effect Multiplier	D Direct Jobs Created (F / C)	E Indirect & Induced Jobs Created (F - D)	F Total (A x B)
Construction (230000)	\$1,153.0	17.9417	2.3456	8,819.5	11,867.5	20,686.9
Architectural... (541300)	\$139.7	14.6116	2.7051	754.3	1,286.2	2,040.5
Legal services (541100)	\$19.7	14.1304	2.8361	98.1	180.2	278.3
Electric power... (2211A0)	\$8.6	7.8088	3.901	17.2	49.9	67.1
Total				9,689.1	13,383.7	23,072.8

*RIMS II Final Demand Employment Multiplier including direct, indirect, and induced impacts.

The indirect and induced job creation estimated from equipment- and machine-related expenditures is summarized in the table below. The method for disaggregating direct, indirect, and induced impacts from the total impact is described in Appendix A.

Table 16: Indirect & Induced Job Creation from Machine/Equipment Purchases-Related Activity

Activity (RIMS II)	Projected Expenditures (2010\$, Million)	Final- Demand Multiplier*	Direct Jobs Created	Indirect & Induced Jobs Created	Total
Wholesale trade (420000)*	\$13.3	7.3628	-	97.9	97.9

**RIMS II Final Demand Employment Multiplier including indirect & induced impacts only.*

The detailed industry impacts table are shown on the following pages.

Detailed Impacts from Hard Construction Expenditures

The price-adjusted hard construction expenditures of \$1.15 billion (in 2010 dollars) serve as the direct input in the impact model for job creation resulting from hard construction expenditures. Impact DataSource utilizes industry- and region-specific RIMS II multipliers to estimate the total number of jobs to be created as well as the associated economic output and household earnings generated by the hard construction expenditures associated with the Project.

Table 17: Increase in Employment, Economic Output, and Household Earnings from
Expenditures on Hard Construction (230000)
Direct, Indirect, & Induced Effects

NAICS Group	Industry Title	Jobs	Output	Earnings
11	Agriculture, Forestry, Fishing & Hunting	88.8	\$9,684,611	\$1,614,327
21	Mining, Quarrying, & Oil & Gas Extraction	94.1	\$16,832,776	\$3,920,508
22	Utilities	65.7	\$34,472,603	\$7,033,853
23	Construction	8,910.6	\$1,164,883,696	\$429,232,564
31-33	Manufacturing	1,740.9	\$425,546,409	\$83,137,833
42	Wholesale Trade	468.9	\$100,766,069	\$30,902,828
44-45	Retail Trade	2,050.1	\$146,422,091	\$49,236,969
48-49	Transportation & Warehousing	507.8	\$70,559,307	\$22,369,958
51	Information	236.0	\$70,213,428	\$13,952,396
52	Finance and Insurance	742.8	\$136,622,188	\$36,322,354
53	Real Estate and Rental & Leasing	794.8	\$179,395,885	\$12,914,615
54	Professional, Scientific, & Technical Services	926.1	\$147,459,728	\$61,690,347
55	Management of Companies & Enterprises	180.2	\$44,157,213	\$17,642,286
56	Administrative & Support & Waste Mgmt	889.9	\$46,578,366	\$19,256,613
61	Educational Services	166.4	\$13,373,986	\$5,419,526
62	Health Care & Social Assistance	1,164.0	\$114,370,641	\$52,350,314
71	Arts, Entertainment, & Recreation	203.5	\$11,875,177	\$4,266,435
721	Accommodation	107.0	\$8,877,560	\$2,536,799
722	Food services and drinking places	689.6	\$35,164,361	\$10,954,361
81	Other Services	551.4	\$65,601,709	\$19,948,468
	Households	108.5	\$0	\$1,153,091
	Total	20,686.9	\$2,842,857,803	\$885,856,445

Total may not sum due to rounding.

Impact DataSource calculations based on RIMS II relationships.

Detailed Impacts from Architectural and Engineering Expenditures

The price-adjusted architectural and engineering expenditures of \$139.7 million (in 2010 dollars) serve as the direct input in the impact model for job creation resulting from architectural and engineering expenditures. Impact DataSource utilizes industry- and region-specific RIMS II multipliers to estimate the total number of jobs to be created as well as the associated economic output and household earnings generated by the architectural and engineering expenditures associated with the Project.

Table 18: Increase in Employment, Economic Output, and Household Earnings from
Expenditures on Architectural and Engineering (541300)
Direct, Indirect, & Induced Effects

NAICS Group	Industry Title	Jobs	Output	Earnings
11	Agriculture, Forestry, Fishing & Hunting	7.3	\$726,243	\$125,693
21	Mining, Quarrying, & Oil & Gas Extraction	2.3	\$516,750	\$111,727
22	Utilities	6.0	\$3,114,467	\$642,433
23	Construction	11.3	\$1,480,419	\$544,671
31-33	Manufacturing	74.4	\$19,524,774	\$3,589,244
42	Wholesale Trade	30.7	\$6,606,022	\$2,025,060
44-45	Retail Trade	142.3	\$10,153,441	\$3,421,653
48-49	Transportation & Warehousing	46.0	\$5,642,353	\$1,955,230
51	Information	31.0	\$9,008,211	\$1,829,537
52	Finance and Insurance	98.2	\$18,882,328	\$4,985,837
53	Real Estate and Rental & Leasing	106.3	\$20,586,207	\$1,424,525
54	Professional, Scientific, & Technical Services	903.6	\$161,074,280	\$59,125,357
55	Management of Companies & Enterprises	20.7	\$5,069,738	\$2,025,060
56	Administrative & Support & Waste Mgmt	188.5	\$9,050,110	\$4,022,188
61	Educational Services	18.6	\$1,494,385	\$614,501
62	Health Care & Social Assistance	127.0	\$12,457,867	\$5,698,099
71	Arts, Entertainment, & Recreation	26.3	\$1,536,284	\$544,671
721	Accommodation	18.8	\$1,564,217	\$446,910
722	Food services and drinking places	112.2	\$5,712,184	\$1,773,673
81	Other Services	57.2	\$6,759,650	\$2,025,060
	Households	11.9	\$0	\$125,693
	Total	2,040.5	\$300,959,931	\$97,056,820

Total may not sum due to rounding.

Impact DataSource calculations based on RIMS II relationships.

Detailed Impacts from Legal Services Expenditures

The price-adjusted legal expenses of \$19.7 million (in 2010 dollars) serve as the direct input in the impact model for job creation resulting from legal services expenditures. Impact DataSource utilizes industry- and region-specific RIMS II multipliers to estimate the total number of jobs to be created as well as the associated economic output and household earnings generated by the legal services expenditures associated with the Project.

Table 19: Increase in Employment, Economic Output, and Household Earnings from
Expenditures on Legal Services (541100)
Direct, Indirect, & Induced Effects

NAICS Group	Industry Title	Jobs	Output	Earnings
11	Agriculture, Forestry, Fishing & Hunting	1.2	\$118,165	\$19,697
21	Mining, Quarrying, & Oil & Gas Extraction	0.3	\$68,930	\$13,788
22	Utilities	0.9	\$482,509	\$98,485
23	Construction	1.5	\$194,973	\$70,909
31-33	Manufacturing	9.7	\$2,625,243	\$464,851
42	Wholesale Trade	4.5	\$976,835	\$299,395
44-45	Retail Trade	24.0	\$1,717,338	\$577,124
48-49	Transportation & Warehousing	6.5	\$809,433	\$277,729
51	Information	5.3	\$1,549,937	\$313,183
52	Finance and Insurance	14.4	\$2,705,989	\$720,913
53	Real Estate and Rental & Leasing	21.8	\$3,728,121	\$267,880
54	Professional, Scientific, & Technical Services	108.9	\$21,271,754	\$11,163,861
55	Management of Companies & Enterprises	2.8	\$679,451	\$271,820
56	Administrative & Support & Waste Mgmt	19.5	\$1,104,847	\$437,275
61	Educational Services	3.1	\$252,086	\$102,425
62	Health Care & Social Assistance	21.9	\$2,152,581	\$984,853
71	Arts, Entertainment, & Recreation	4.3	\$248,147	\$88,637
721	Accommodation	2.3	\$193,004	\$55,152
722	Food services and drinking places	14.4	\$732,626	\$228,486
81	Other Services	8.7	\$1,039,856	\$313,183
	Households	2.1	\$0	\$21,667
	Total	278.3	\$42,651,826	\$16,791,313

Total may not sum due to rounding.

Impact DataSource calculations based on RIMS II relationships.

Detailed Impacts from Electric Utility Services

The price-adjusted expenditures of \$8.6 million (in 2010 dollars) serve as the direct input in the impact model for job creation resulting from expenditures on electric utilities. Impact DataSource utilizes industry- and region-specific RIMS II multipliers to estimate the total number of jobs to be created as well as the associated economic output and household earnings generated by the electric utilities expenditures associated with the Project.

Table 20: Increase in Employment, Economic Output, and Household Earnings from
Expenditures on Electric Utilities (2211A0)
Direct, Indirect, & Induced Effects

NAICS Group	Industry Title	Jobs	Output	Earnings
11	Agriculture, Forestry, Fishing & Hunting	0.3	\$30,934	\$5,158
21	Mining, Quarrying, & Oil & Gas Extraction	2.8	\$745,000	\$155,594
22	Utilities	17.5	\$8,731,338	\$1,956,249
23	Construction	2.2	\$287,860	\$106,595
31-33	Manufacturing	3.2	\$887,641	\$155,594
42	Wholesale Trade	1.4	\$299,031	\$91,121
44-45	Retail Trade	5.9	\$420,190	\$141,840
48-49	Transportation & Warehousing	2.9	\$625,559	\$153,875
51	Information	1.1	\$310,202	\$65,332
52	Finance and Insurance	3.8	\$695,161	\$183,962
53	Real Estate and Rental & Leasing	3.5	\$792,260	\$52,438
54	Professional, Scientific, & Technical Services	3.9	\$586,032	\$275,083
55	Management of Companies & Enterprises	0.7	\$161,545	\$64,473
56	Administrative & Support & Waste Mgmt	3.8	\$207,088	\$82,525
61	Educational Services	0.8	\$61,868	\$24,929
62	Health Care & Social Assistance	5.1	\$505,259	\$231,242
71	Arts, Entertainment, & Recreation	1.0	\$57,572	\$20,631
721	Accommodation	0.5	\$42,964	\$12,035
722	Food services and drinking places	4.4	\$221,695	\$68,771
81	Other Services	2.1	\$252,630	\$75,648
	Households	0.5	\$0	\$5,158
Total		67.1	\$15,921,830	\$3,928,250

Total may not sum due to rounding.

Impact DataSource calculations based on RIMS II relationships.

Detailed Impacts from Purchases of Equipment and Machinery

The price-adjusted expenditures of \$13.3 million (in 2010 dollars) serve as the direct input in the impact model for job creation resulting from expenditures on equipment- and machinery-related purchases. Impact DataSource utilizes industry- and region-specific RIMS II multipliers to estimate the total number of indirect and induced jobs to be created as well as the associated indirect and induced economic output and household earnings generated by the Project's purchases of equipment and machinery.

Table 21: Increase in Employment, Economic Output, and Household Earnings from
Expenditures on Equipment and Machinery (420000)

Indirect & Induced Effects Only

NAICS Group	Industry Title	Jobs	Output	Earnings
11	Agriculture, Forestry, Fishing & Hunting	0.6	\$61,142	\$10,631
21	Mining, Quarrying, & Oil & Gas Extraction	0.2	\$45,192	\$9,302
22	Utilities	0.6	\$295,079	\$61,126
23	Construction	0.8	\$107,664	\$39,865
31-33	Manufacturing	6.9	\$1,749,204	\$324,235
42	Wholesale Trade	4.2	\$901,186	\$275,069
44-45	Retail Trade	11.6	\$828,081	\$279,055
48-49	Transportation & Warehousing	7.4	\$849,348	\$312,276
51	Information	2.9	\$802,826	\$170,091
52	Finance and Insurance	6.8	\$1,303,928	\$345,497
53	Real Estate and Rental & Leasing	8.6	\$1,674,770	\$118,266
54	Professional, Scientific, & Technical Services	6.8	\$998,216	\$438,515
55	Management of Companies & Enterprises	3.0	\$741,684	\$296,330
56	Administrative & Support & Waste Mgmt	11.1	\$582,182	\$240,519
61	Educational Services	1.5	\$120,956	\$49,167
62	Health Care & Social Assistance	10.2	\$1,006,191	\$459,776
71	Arts, Entertainment, & Recreation	2.0	\$118,297	\$42,523
721	Accommodation	0.9	\$75,763	\$21,261
722	Food services and drinking places	6.3	\$319,004	\$99,663
81	Other Services	4.5	\$543,636	\$163,447
	Households	1.0	\$0	\$10,631
	Total	97.9	\$13,124,348	\$3,767,244

Total may not sum due to rounding.

Impact DataSource calculations based on RIMS II relationships.

VI. Combined Impacts of the Project

The table below combines the total job creation estimated from the development expenditures for the Project: (1) hard construction, (2) architectural and engineering, (3) legal services, (4) electric utility services, and (5) purchases of equipment and machinery. The detailed industry impact table shows the total permanent jobs, workers' earnings, and economic output or demand for additional services created from the Project.

Table 22: Increase in Employment, Economic Output, and Household Earnings
in Total

NAICS Group	Industry Title	Jobs	Output	Earnings
11	Agriculture, Forestry, Fishing & Hunting	98.1	10,621,096.3	1,775,505.8
21	Mining, Quarrying, & Oil & Gas Extraction	99.7	18,208,647.6	4,210,919.1
22	Utilities	90.7	47,095,994.8	9,792,145.9
23	Construction	8,926.4	1,166,954,612.4	429,994,604.7
31-33	Manufacturing	1,835.1	450,333,270.7	87,671,756.6
42	Wholesale Trade	509.8	109,549,142.0	33,593,473.2
44-45	Retail Trade	2,233.9	159,541,141.5	53,656,640.4
48-49	Transportation & Warehousing	570.6	78,485,999.7	25,069,067.0
51	Information	276.4	81,884,604.3	16,330,539.4
52	Finance and Insurance	865.9	160,209,594.1	42,558,562.0
53	Real Estate and Rental & Leasing	934.8	206,177,242.8	14,777,723.6
54	Professional, Scientific, & Technical Services	1,949.4	331,390,010.3	132,693,162.9
55	Management of Companies & Enterprises	207.4	50,809,631.6	20,299,968.0
56	Administrative & Support & Waste Mgmt	1,112.7	57,522,592.6	24,039,119.4
61	Educational Services	190.4	15,303,282.2	6,210,547.7
62	Health Care & Social Assistance	1,328.2	130,492,540.2	59,724,284.1
71	Arts, Entertainment, & Recreation	237.0	13,835,478.4	4,962,897.2
721	Accommodation	129.6	10,753,507.6	3,072,157.1
722	Food services and drinking places	826.8	42,149,869.2	13,124,953.0
81	Other Services	623.9	74,197,480.1	22,525,805.0
	Households	123.9	0.0	1,316,239.2
Total		23,170.7	\$3,215,515,738	\$1,007,400,071

Total may not sum due to rounding.

Impact DataSource calculations based on RIMS II relationships.

VII. Conduct of the Analysis

This analysis was conducted by Impact DataSource using information from DVRC, PTC, and the results of research conducted by Impact DataSource, and some estimates and assumptions.

Impact DataSource is a 20-year-old Austin, Texas economic consulting, research, and analysis firm. The company has conducted over 2,500 economic impact analyses of firms, projects, and activities in most industry groups and in Texas and 26 other states. Impact DataSource has completed economic analyses for several successful regional center projects under the USCIS EB-5 program.

In addition, Impact DataSource has prepared and customized over 50 economic impact models for its clients to perform their own analyses of economic development projects. These clients include the New Mexico Economic Development and the Metro Orlando (Florida) Economic Development Commission.

The New Mexico Department of Economic Development uses Impact DataSource's computer model to project the economic impact of new or expanding firms in the state and costs and benefits for the State of New Mexico and each local taxing district. The model also calculates the amount of eligible state and local incentives and calculates a rate of return and payback period for these incentives.

The following members of the Impact DataSource team performed this analysis:

Michael Kester, Lead EB-5 Economist, and
Maggie Mullane, Economist.

Michael Kester is Impact DataSource's lead EB-5 economist. Since joining the firm in 2012, Michael has drawn from his diverse consulting background in both the healthcare and compensation spaces to help expand Impact DataSource's EB-5 business. He continues to focus on providing EB-5 consulting, services and deliverables that reflect the evolving needs of EB-5 clients and also the changing requirements of the USCIS.

Michael previously worked in New York as an actuarial healthcare consultant for Deloitte where he provided in-depth financial and claims projections to his clients. Michael has also worked as a compensation analyst at the Texas Association of School Boards where he supported compensation consulting projects and analyzed key trends in survey data.

Maggie Mullane is an economist with Impact DataSource. In addition to her keen research and analytical skills, she offers dynamic insights to the study of economics and economic impact.

Targeting EB-5 projects, she provides consulting services and analytics that support the diversity of the clients, their ventures, and the fluid nature of the EB-5 program.

Before joining Impact DataSource in 2014, Maggie worked as an Economics Editor with Cactus Communications. She has also lead non-profit development and management teams all over the nation, helping coordinate and evaluate strategic fundraising and community programs. She has a Masters in Economic Analysis and Policy from Tulane University in New Orleans, LA and a Bachelor of Arts in Economics and Spanish from Austin College in Sherman, TX.

APPENDIX A

Indirect and Induced Impact Calculations

Disaggregation of Direct, Indirect, and Induced Effects from the Total Impact Using RIMS II

The following section provides an explanation and example of how to disaggregate (1) the direct effects and (2) the indirect and induced effects from the total impact estimated using RIMS II multipliers. This method is needed to accurately estimate the permanent jobs created as a result of the expenditures on equipment and machinery. As noted in Sections III and V, most of the development activities (hard construction, architecture and engineering, legal services, and electric utilities) are projected to last for more than 2 years; however, economic activities resulting from expenditures on equipment and machinery are not anticipated to last that long. Therefore, the disaggregation of direct, indirect, and induced effects is necessary to find the accurate impacts from the Project's expenditures on equipment and machinery.

According to guidance from the USCIS, while direct employment related to development activity may not be counted in the total job count if that activity lasts less than two years, indirect and induced jobs may be counted. The following clarification is provided in a letter to Senator John Cornyn from USCIS Chief James W. McCament on January 16, 2009:

"Indirect and induced jobs created as a result of construction jobs whether counted or not may be included in the job count. Even when the construction jobs may not be counted towards the job creation requirement, they do have indirect and induced impacts that are eligible to be included in the final job count because they are "continuous, permanent employment."

The theory goes that a temporary stimulus will spur additional indirect and induced activity that will be self-sustaining, and therefore the indirect and induced activity will be continuous, permanent employment. Government stimulus programs often employ this approach to spur overall demand in the economy by temporarily increasing government spending or by offering one-time tax rebates which will result in an ongoing increase in demand as new workers are employed and then re-spend earnings in the economy.

The multipliers generated from the RIMS II model provide the user with enough information to determine and isolate the direct, indirect, and induced portions comprising the total impact.

The following section steps through the indirect and induced calculation for the RIMS II Wholesale trade industry (420000) for the impact area described in Section II. The same steps may be utilized for the multipliers from other industries and impact areas studied in this report to isolate their direct and indirect/induced effects.

Indirect & Induced Employment

The following example shows one of several algebraically equivalent ways to determine the number of indirect and induced jobs created as a result of additional demand in an industry. The example uses the wholesale trade industry as a relevant example, but the procedure can be completed for any industry in the model. The Type II employment multipliers for the wholesale trade industry in this region are shown below. Recall that Type II multipliers include the direct, indirect, and induced effects.

420000 Wholesale trade	Type II
Final-demand Employment ¹⁰ (number of jobs)	12.0169
Direct-effect Employment ¹¹ (number of jobs)	2.5820

First, It is important to remember that the final-demand employment multiplier represents the total change in the number of jobs that occurs in all industries for each additional \$1 million of output delivered to final demand by the industry. In addition, the direct-effect employment multiplier represents the total change in the number of jobs in all industries for each additional job in the industry.

The Type II Final-demand Employment multiplier could also be presented as the product of the Type II Direct-effect Employment multiplier and the Number of Direct Jobs per \$1 million of final demand.

$$\begin{aligned}
 &\text{Type II Final demand Employment multiplier} \\
 &= (\text{Type II Direct effect Employment multiplier}) \\
 &\quad * (\text{Number of Direct Jobs per \$1 million of final demand})
 \end{aligned}$$

By solving for the *Number of Direct Jobs per \$1 million of final demand*, we determine the following relationship.

$$\begin{aligned}
 &\text{Number of Direct Jobs per \$1 million of final demand} \\
 &= \frac{\text{Type II Final demand Employment Multiplier}}{\text{Type II Direct effect Employment Multiplier}}
 \end{aligned}$$

By substituting the multiplier values, the *Number of Direct Jobs per \$1 million of final demand* in this instance is shown below.

¹⁰ Each final-demand employment entry represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand by the industry corresponding to the entry.

¹¹ Each direct-effect employment entry represents the total change in the number of jobs in all industries for each additional job in the industry corresponding to the entry.

$$\text{Number of Direct Jobs per \$1 million of final demand} = \frac{12.0169}{2.5820} = 4.6541$$

The Number of Direct Jobs per \$1 million of final demand can be used to determine the Number of Indirect & Induced Jobs per \$1 million of final demand. The following relationship is used to determine this value.

$$\begin{aligned} \text{Type II Final demand Employment multiplier} \\ &= \text{Number of Direct Jobs per \$1 million of final demand} \\ &+ \text{Number of Indirect \& Induced Jobs per \$1 million of final demand} \end{aligned}$$

Subtracting the Number of Direct Jobs per \$1 million of final demand from both sides of the equation we determine the Number of Indirect & Induced Jobs per \$1 million of final demand as shown below.

$$\begin{aligned} \text{Number of Indirect \& Induced Jobs per \$1 million of final demand} \\ &= \text{Type II Final demand Employment Multiplier} \\ &- \text{Number of Direct Jobs per \$1 million of final demand} \end{aligned}$$

$$\text{Number of Indirect \& Induced Jobs per \$1 million of final demand} = 12.0169 - 4.6541 = 7.3628$$

Therefore, \$1 million of additional output or final demand in the construction industry in this region will create 7.3628 indirect and induced jobs. This relationship, like other RIMS II multipliers, is linear and can be used to estimate the number of indirect and induced jobs created as a result of expenditures for construction industry final demand.

Indirect & Induced Household Earnings

Similar calculations shown above for employment can be followed to determine the earnings paid to indirect and induced workers.

420000 Wholesale trade	Type II
Final-demand Earnings ¹² (dollars)	0.5896
Direct-effect Earnings ¹³ (dollars)	1.9257

The Type II Final-demand Earnings multiplier could also be presented as the product of the Type II Direct-effect Earnings multiplier and the Direct Earnings per \$1 of final demand.

¹² Each final-demand earnings entry represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the entry corresponding to the entry.

¹³ Each direct-effect earnings entry represents the total change in the number of jobs in all industries for each additional job in the industry corresponding to the entry.

$$\begin{aligned} \text{Type II Final demand Earnings multiplier} \\ &= (\text{Type II Direct effect Earnings multiplier}) \\ &\quad * (\text{Direct Earnings per \$1 of final demand}) \end{aligned}$$

By solving for the *Direct Earnings per \$1 of final demand*, we determine the following relationship.

$$\text{Direct Earnings per \$1 of final demand} = \frac{\text{Type II Final demand Earnings Multiplier}}{\text{Type II Direct effect Earnings Multiplier}}$$

By substituting the multiplier values, the *Direct Earnings per \$1 of final demand* in this instance is shown below.

$$\text{Direct Earnings per \$1 of final demand} = \frac{0.5896}{1.9257} = 0.3062$$

The *Direct Earnings per \$1 of final demand* can be used to determine the *Indirect & Induced Earnings per \$1 of final demand*. The following relationship is used to determine this value.

$$\begin{aligned} \text{Type II Final demand Earnings multiplier} \\ &= \text{Direct Earnings per \$1 of final demand} \\ &\quad + \text{Indirect \& Induced Earnings per \$1 of final demand} \end{aligned}$$

Subtracting the *Direct Earnings per \$1 of final demand* from both sides of the equation we determine the *Indirect & Induced Earnings per \$1 of final demand* as shown below.

$$\begin{aligned} \text{Indirect \& Induced Earnings per \$1 of final demand} \\ &= \text{Type II Final Demand Earnings Multiplier} \\ &\quad - \text{Direct Earnings per \$1 of final demand} \end{aligned}$$

$$\text{Indirect \& Induced Earnings per \$1 of final demand} = 0.5896 - 0.3062 = 0.2834$$

As mentioned before, this relationship is linear and can be used to determine the number of indirect and induced household earnings created as a result of expenditures for construction industry final demand. Therefore, \$1 million of additional output or final demand in the construction industry in this region will create \$283,426 in earnings for indirect and induced workers.

Indirect & Induced Economic Output

The indirect and induced economic output generated can be obtained directly by subtracting 1, the direct effect, from the Type II Final-demand Output multiplier. Therefore, for each \$1 million of

additional output or final demand in the construction industry in this region, \$987,400 in indirect and induced economic output or demand will be created.

420000 Wholesale trade	Type II
Final-demand Output ¹⁴ (dollars)	1.9874

¹⁴ Each final-demand output entry represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

APPENDIX B

RIMS II Multipliers (Type II)

RIMS II Multipliers (2002/2010)

**Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.9557	0.3533	13.5003	0.8446	3.0413	2.2211
111200 Vegetable and melon farming	1.8426	0.3927	18.3950	0.9772	2.2985	1.5483
1113B0 Fruit and tree nut farming	1.8879	0.4550	21.4773	1.0228	2.1301	1.4608
111400 Greenhouse, nursery, and floriculture production	1.9383	0.5162	23.4674	1.1592	1.9339	1.4845
111910 Tobacco farming	2.1534	0.4215	14.6915	0.8561	3.3982	2.4968
111920 Cotton farming	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1119C0 All other crop farming, including sugarcane and sugar beet farming	2.0175	0.3989	14.1920	0.8962	2.8985	2.1210
1121A0 Cattle ranching and farming	1.8879	0.3216	12.3709	0.8267	2.7689	1.9655
112120 Dairy cattle and milk production	2.0320	0.3764	15.1170	0.8956	2.8135	1.7478
112A00 Animal production, except cattle and poultry and eggs	1.7734	0.3144	12.4363	0.9101	2.4432	1.7389
112300 Poultry and egg production	2.4403	0.4351	13.6692	0.8066	3.7456	2.4239
113A00 Forest nurseries, forest products, and timber tracts	1.7798	0.3412	10.1970	0.8202	3.0278	3.1143
113300 Logging	1.7591	0.4154	12.9615	0.7581	1.8200	1.7306
114100 Fishing	1.9974	0.6270	26.6583	1.1614	1.7876	1.3706
114200 Hunting and trapping	1.9097	0.3522	18.2299	0.9468	3.5988	1.5365
115000 Support activities for agriculture and forestry	2.2088	0.7727	34.3852	1.2431	1.7249	1.3248
211000 Oil and gas extraction	2.1105	0.4959	11.5866	1.1703	2.5237	2.4432
212100 Coal mining	2.1971	0.5378	10.8204	1.1836	2.5453	3.2890
212210 Iron ore mining	2.3595	0.5645	14.2505	1.1417	2.7717	2.3980
2122A0 Gold, silver, and other metal ore mining	2.0875	0.6083	14.2290	1.1631	1.9407	1.9657
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	2.1911	0.5844	14.1555	1.2282	2.3312	2.2792
212320 Sand, gravel, clay, and ceramic and refractory minerals mining and quarrying	2.2912	0.6246	15.6183	1.2331	2.3403	2.1680
212390 Other nonmetallic mineral mining and quarrying	2.1579	0.5428	14.3505	1.1809	2.4298	2.0864
213111 Drilling oil and gas wells	2.2578	0.5618	11.2433	1.1582	2.5687	3.3289
213112 Support activities for oil and gas operations	2.3909	0.6658	14.2429	1.2234	2.4249	2.9395
21311A Support activities for other mining	2.6222	0.6910	15.5443	1.2239	2.9202	3.1723
2211A0 Electric power generation, transmission, and distribution	1.8527	0.4571	7.8088	1.1633	2.0376	3.9010
221200 Natural gas distribution	1.9004	0.3453	6.8720	0.8126	3.0798	5.2766
221300 Water, sewage and other systems	2.0538	0.5842	11.8897	1.2728	2.1141	2.9456
230000 Construction	2.4656	0.7683	17.9417	1.3109	2.0851	2.3456
311111 Dog and cat food manufacturing	2.1134	0.3880	8.6719	0.8612	3.3926	3.8207
311119 Other animal food manufacturing	2.0921	0.3872	9.0436	0.6943	3.3853	3.5868
311210 Flour milling and malt manufacturing	2.1815	0.4307	9.5697	0.8118	3.7661	4.5354
311221 Wet corn milling	2.1868	0.4294	8.9090	0.7854	3.7545	6.5980
31122A Soybean and other oilseed processing	1.8458	0.3235	8.5788	0.4937	2.8287	2.7642

(Continued)

Region Definition: Pennsylvania

*Includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

2. Each entry in column 2 represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.--Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.--Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

2

Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
311225 Fats and oils refining and blending	1.9941	0.3553	7.8023	0.6111	3.1064	3.8044
311230 Breakfast cereal manufacturing	1.8711	0.3457	6.9149	0.9568	3.0222	4.1062
31131A Sugar cane mills and refining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311313 Beet sugar manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311320 Chocolate and confectionery manufacturing from cacao beans	2.3179	0.4471	10.0087	0.8519	3.9090	4.5256
311330 Confectionery manufacturing from purchased chocolate	2.2757	0.4536	10.6791	1.0090	3.5036	3.1926
311340 Nonchocolate confectionery manufacturing	2.2884	0.4873	10.6930	0.9728	3.2853	3.4457
311410 Frozen food manufacturing	2.3773	0.4765	11.6400	0.9287	3.7638	3.4601
311420 Fruit and vegetable canning, pickling, and drying	2.3780	0.4560	10.4227	0.9563	3.9870	4.0783
31151A Fluid milk and butter manufacturing	2.7864	0.5136	14.4229	1.0511	4.4906	5.7459
311513 Cheese manufacturing	3.1072	0.5626	15.5862	1.0474	4.9190	6.9743
311514 Dry, condensed, and evaporated dairy product manufacturing	2.6749	0.4957	13.3393	0.9860	4.3343	5.0559
311520 Ice cream and frozen dessert manufacturing	2.5757	0.4965	12.0099	1.0213	4.3413	4.4293
31161A Animal (except poultry) slaughtering, rendering, and processing	2.1762	0.3867	10.2996	0.6659	3.3809	3.3771
311615 Poultry processing	2.5979	0.5327	14.8504	0.9198	3.5380	2.8766
311700 Seafood product preparation and packaging	1.8914	0.3897	9.8400	0.6811	2.8073	2.5000
311810 Bread and bakery product manufacturing	2.4304	0.6570	16.5714	1.1430	2.5732	2.4300
311820 Cookie, cracker, and pasta manufacturing	2.2988	0.4796	11.1018	0.9862	3.5385	3.3895
311830 Tortilla manufacturing	2.3588	0.6029	15.5164	1.0765	2.6202	2.3151
311910 Snack food manufacturing	2.1851	0.4174	9.6979	0.9487	3.6492	3.8398
311920 Coffee and tea manufacturing	2.2250	0.4442	9.8480	0.8767	3.8838	4.1739
311930 Flavoring syrup and concentrate manufacturing	1.4599	0.2338	4.3272	0.9296	2.0444	2.9554
311940 Seasoning and dressing manufacturing	2.4564	0.4842	10.8846	0.9310	4.0554	4.4917
311990 All other food manufacturing	2.2668	0.4915	13.2734	0.9566	3.1832	2.6363
312110 Soft drink and ice manufacturing	2.3705	0.4409	9.7522	0.8263	4.0170	4.5802
312120 Breweries	2.2433	0.4142	8.9223	1.0492	3.7741	4.1471
312130 Wineries	2.1649	0.4563	15.2953	0.9084	3.5583	1.9548
312140 Distilleries	1.6126	0.2749	5.7047	1.0169	2.5050	2.9894
3122A0 Tobacco product manufacturing	1.5306	0.2432	5.1533	1.0383	2.2157	2.6453
313100 Fiber, yarn, and thread mills	1.8419	0.3888	10.5341	0.6800	2.3925	2.0466
313210 Broadwoven fabric mills	2.1798	0.5331	12.2877	0.9511	2.5096	2.6081
313220 Narrow fabric mills and schiffli machine embroidery	2.1564	0.6096	14.0769	1.0315	2.1404	2.2400
313230 Nonwoven fabric mills	2.2664	0.4700	11.1359	0.9617	3.0169	2.7723
313240 Knit fabric mills	2.1618	0.5124	12.8506	0.8921	2.6251	2.5182
313310 Textile and fabric finishing mills	2.2401	0.4913	11.3948	0.9634	3.0596	3.1596
313320 Fabric coating mills	2.4018	0.5523	12.1427	0.9973	2.8307	3.1334

(Continued)

Region Definition: Pennsylvania

*Includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

2. Each entry in column 2 represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.--Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.--Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

3

**Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
314110 Carpet and rug mills	1.7913	0.3155	7.7534	0.6993	2.7159	2.6613
314120 Curtain and linen mills	2.1074	0.4746	13.2525	0.9712	2.6047	2.1578
314910 Textile bag and canvas mills	2.3151	0.6623	18.3321	1.1356	2.1351	1.9152
314990 All other textile product mills	2.0691	0.5174	14.1285	0.9453	2.2289	2.0327
315100 Apparel knitting mills	2.1952	0.5638	16.3603	1.0459	2.4256	2.0187
315210 Cut and sew apparel contractors	2.3891	0.8613	27.4027	1.3751	1.8530	1.5745
315220 Men's and boys' cut and sew apparel manufacturing	2.1135	0.4602	12.5157	1.0521	2.9960	2.5939
315230 Women's and girls' cut and sew apparel manufacturing	2.2676	0.5037	12.6536	1.0322	3.3097	3.4219
315290 Other cut and sew apparel manufacturing	2.3062	0.6616	21.1812	1.1450	2.2467	1.7802
315900 Apparel accessories and other apparel manufacturing	2.4516	0.6799	18.5218	1.1332	2.3950	2.1184
316100 Leather and hide tanning and finishing	2.6834	0.5001	14.7416	0.8918	3.8405	2.8516
316200 Footwear manufacturing	2.2426	0.5830	17.1413	1.0597	2.2948	1.8965
316900 Other leather and allied product manufacturing	2.2895	0.5857	19.4710	1.1376	2.3861	1.7574
321100 Sawmills and wood preservation	1.9243	0.3814	10.4580	0.7026	2.6809	2.4760
32121A Veneer and plywood manufacturing	1.9324	0.4351	12.3615	0.8253	2.2683	2.0142
32121B Engineered wood member and truss manufacturing	2.3849	0.5932	15.1625	1.0584	2.4894	2.4359
321219 Reconstituted wood product manufacturing	2.1983	0.4475	10.3279	0.9447	2.9517	3.2310
321910 Wood windows and doors and millwork	2.3985	0.5740	15.2090	1.0305	2.6945	2.4577
321920 Wood container and pallet manufacturing	2.3431	0.5911	16.7177	1.0664	2.4360	2.0764
321991 Manufactured home (mobile home) manufacturing	2.4605	0.6033	15.6450	1.0576	2.7037	2.6032
321992 Prefabricated wood building manufacturing	2.4678	0.6113	16.1316	1.1012	2.6878	2.4744
321999 All other miscellaneous wood product manufacturing	2.3675	0.6104	16.5141	1.0747	2.4715	2.2886
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	2.0166	0.4144	8.0571	0.9690	2.8514	4.4211
322130 Paperboard mills	2.1063	0.4361	8.8488	0.9620	2.9858	4.4676
322210 Paperboard container manufacturing	2.3306	0.5298	11.2732	0.9877	2.7542	3.1421
32222A Coated and laminated paper, packaging paper and plastics film manufacturing	2.2148	0.4688	9.5314	1.0186	2.8703	3.5879
32222B All other paper bag and coated and treated paper manufacturing	2.4740	0.5583	11.8199	1.0367	2.9049	3.3653
322230 Stationery product manufacturing	2.3148	0.5388	12.5448	1.0300	2.6845	2.6482
322291 Sanitary paper product manufacturing	1.7718	0.3072	6.3495	0.9745	2.7356	3.3209
322299 All other converted paper product manufacturing	2.1966	0.5204	11.5939	1.0192	2.5344	2.7337
323110 Printing	2.3085	0.6428	15.4968	1.1901	2.2148	2.2829
323120 Support activities for printing	2.2945	0.7979	19.3014	1.3570	1.8514	1.9616
324110 Petroleum refineries	1.7295	0.2878	5.6661	0.4723	2.8681	4.7350
324121 Asphalt paving mixture and block manufacturing	2.2742	0.4966	10.3905	0.9163	2.8575	3.3220
324122 Asphalt shingle and coating materials manufacturing	2.3132	0.5321	11.3979	1.0402	2.8128	3.1255
324191 Petroleum lubricating oil and grease manufacturing	2.2595	0.4986	9.7718	0.8641	2.7493	3.8104

(Continued)

Region Definition: Pennsylvania

*Includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

2. Each entry in column 2 represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.--Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.--Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
324199 All other petroleum and coal products manufacturing	2.1479	0.4664	9.9266	0.8106	2.6486	3.2008
325110 Petrochemical manufacturing	2.2330	0.4068	7.8392	0.7603	3.7163	5.5894
325120 Industrial gas manufacturing	2.1635	0.4459	8.0766	1.0666	3.4949	5.5552
325130 Synthetic dye and pigment manufacturing	2.4402	0.5525	10.8250	1.0277	3.5503	4.8509
325181 Alkalies and chlorine manufacturing	2.5905	0.5970	10.8382	1.0974	3.7399	6.3343
325182 Carbon black manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325188 All other basic inorganic chemical manufacturing	2.4254	0.6246	12.0474	1.1058	2.6058	3.9129
325190 Other basic organic chemical manufacturing	2.3983	0.4774	9.0886	0.8582	3.8671	6.8021
325211 Plastics material and resin manufacturing	2.3777	0.4581	8.8155	0.8514	4.1853	6.3361
325212 Synthetic rubber manufacturing	2.3238	0.4698	9.0109	0.9206	3.7636	5.7113
325220 Artificial and synthetic fibers and filaments manufacturing	2.5080	0.5542	12.0400	0.9711	3.4263	3.2563
325310 Fertilizer manufacturing	2.3990	0.4838	10.3612	0.8967	4.0891	4.9643
325320 Pesticide and other agricultural chemical manufacturing	2.0785	0.4060	7.9043	1.0151	3.7091	4.6284
325411 Medicinal and botanical manufacturing	1.9352	0.3749	7.1642	1.0006	3.3971	4.2752
325412 Pharmaceutical preparation manufacturing	1.9174	0.3768	6.5277	1.0217	3.3887	6.4611
325413 In-vitro diagnostic substance manufacturing	2.5896	0.7083	12.5764	1.2724	2.8924	4.5628
325414 Biological product (except diagnostic) manufacturing	2.3635	0.5931	10.1532	1.2037	3.0075	5.4399
325510 Paint and coating manufacturing	2.4828	0.5167	10.0717	1.0201	3.9317	5.3144
325520 Adhesive manufacturing	2.4552	0.5518	10.8668	1.0192	3.4324	4.6358
325610 Soap and cleaning compound manufacturing	2.1418	0.4098	8.4605	1.0450	3.7438	4.3619
325820 Toilet preparation manufacturing	2.0934	0.4179	9.8269	1.0588	3.8175	3.1729
325910 Printing ink manufacturing	2.6060	0.5808	11.5750	1.0211	3.8235	4.2667
3259A0 All other chemical product and preparation manufacturing	2.5224	0.5925	11.4778	1.0950	3.2970	4.2161
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	2.3379	0.4857	10.5025	1.0032	2.9998	3.2733
326121 Unlaminated plastics profile shape manufacturing	2.3062	0.5317	11.6396	1.0797	2.5626	2.7641
326122 Plastics pipe and pipe fitting manufacturing	2.3694	0.4529	9.6993	0.9448	3.3438	3.4864
326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	2.4247	0.5662	12.6534	1.1017	2.7544	2.8483
326140 Polystyrene foam product manufacturing	2.2052	0.4660	10.3850	0.9985	2.7685	3.0228
326150 Urethane and other foam product (except polystyrene) manufacturing	2.2748	0.4813	10.8231	0.9803	2.9941	2.9895
326160 Plastics bottle manufacturing	2.2610	0.4492	9.7722	0.9778	3.0141	3.1667
32619A Other plastics product manufacturing	2.4063	0.5803	13.5610	1.1177	2.6586	2.6540
326210 Tire manufacturing	2.1798	0.5407	13.0251	0.9996	2.3999	2.4154
326220 Rubber and plastics hoses and belting manufacturing	2.1218	0.5041	10.9705	0.9977	2.4173	2.7015
326290 Other rubber product manufacturing	2.3135	0.5757	12.4479	1.0820	2.5533	2.9336

(Continued)

Region Definition: Pennsylvania

*Includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

2. Each entry in column 2 represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.—Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.—Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

5

**Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
32711A Pottery, ceramics, and plumbing fixture manufacturing	2.4135	0.7205	17.2632	1.2758	2.1548	2.1393
32712A Brick, tile, and other structural clay product manufacturing	2.1072	0.5650	13.6075	1.2016	2.1279	2.1034
32712B Clay and nonclay refractory manufacturing	2.5021	0.6331	13.1712	1.1705	2.7681	3.4459
327211 Flat glass manufacturing	2.1657	0.5138	10.9085	1.1305	2.5569	3.0224
327212 Other pressed and blown glass and glassware manufacturing	2.2635	0.6093	13.7713	1.1865	2.2769	2.4172
327213 Glass container manufacturing	2.2208	0.5242	10.5022	1.1504	2.6373	3.5167
327215 Glass product manufacturing made of purchased glass	2.3784	0.6039	13.7951	1.1573	2.6630	2.7828
327310 Cement manufacturing	2.1117	0.4314	8.8837	1.0964	3.1106	4.2143
327320 Ready-mix concrete manufacturing	2.4604	0.5829	13.8445	1.1474	2.9607	2.9722
327330 Concrete pipe, brick, and block manufacturing	2.3302	0.5953	14.1047	1.1909	2.4729	2.5170
327390 Other concrete product manufacturing	2.4156	0.6633	15.7355	1.2390	2.3540	2.4297
3274A0 Lime and gypsum product manufacturing	2.0804	0.4438	9.5560	1.0014	2.7974	3.3403
327910 Abrasive product manufacturing	2.0124	0.5093	11.3274	1.1116	2.2455	2.4660
327991 Cut stone and stone product manufacturing	2.4414	0.7537	19.9545	1.2927	2.1912	2.0257
327992 Ground or treated mineral and earth manufacturing	1.9490	0.4149	8.4079	1.0947	2.6891	3.8879
327993 Mineral wool manufacturing	2.1632	0.5115	11.1395	1.1093	2.6630	3.1251
327999 Miscellaneous nonmetallic mineral products	2.4147	0.5660	12.5106	1.1550	2.8770	3.2144
331110 Iron and steel mills and ferroalloy manufacturing	2.3854	0.5179	13.0284	1.0179	3.4048	3.0136
331200 Steel product manufacturing from purchased steel	2.5928	0.5732	15.9297	1.0597	3.4981	2.7236
33131A Alumina refining and primary aluminum production	2.2504	0.4647	13.8419	0.9705	3.2089	2.1819
331314 Secondary smelting and alloying of aluminum	2.2480	0.4402	12.1827	0.8068	3.8431	2.7192
33131B Aluminum product manufacturing from purchased aluminum	2.2233	0.4295	11.5847	0.8557	3.3367	2.8425
331411 Primary smelting and refining of copper	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331419 Primary smelting and refining of nonferrous metal (except copper and aluminum)	2.0020	0.4557	13.1839	0.8408	2.5077	2.0203
331420 Copper rolling, drawing, extruding and alloying	2.2360	0.4470	11.9705	0.8372	3.2618	2.7417
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding and alloying	2.2077	0.5135	13.7852	0.9921	2.6738	2.3252
331510 Ferrous metal foundries	2.2774	0.8731	20.3512	1.2051	2.1210	1.7564
331520 Nonferrous metal foundries	2.3762	0.6639	20.9515	1.1326	2.3355	1.8223
33211A All other forging, stamping, and sintering	2.5676	0.6539	15.0983	1.1645	2.7406	3.3314
332114 Custom roll forming	2.5730	0.5721	13.2258	1.0809	3.2934	4.1353
33211B Crown and closure manufacturing and metal stamping	2.5520	0.6821	15.3859	1.1842	2.4615	3.0067
33221A Cutlery, utensil, pot, and pan manufacturing	2.0104	0.4391	11.1105	1.1089	2.5029	2.4346
33221B Handtool manufacturing	2.3032	0.6212	13.5650	1.1958	2.2967	2.8449

(Continued)

Region Definition: Pennsylvania

*Includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

2. Each entry in column 2 represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.—Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

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RIMS II Multipliers (2002/2010)

6

Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
332310 Plate work and fabricated structural product manufacturing	2.4970	0.6356	14.3452	1.1709	2.7154	3.4227
332320 Ornamental and architectural metal products manufacturing	2.5470	0.6626	15.3018	1.1922	2.5076	2.9933
332410 Power boiler and heat exchanger manufacturing	2.4728	0.6558	14.1685	1.2075	2.4886	3.2170
332420 Metal tank (heavy gauge) manufacturing	2.5229	0.6732	14.9165	1.2142	2.5068	3.0917
332430 Metal can, box, and other metal container (light gauge) manufacturing	2.5796	0.4881	10.9707	1.0366	4.2164	5.7717
33299A Ammunition manufacturing	2.1259	0.5665	12.1222	1.1998	2.1720	2.6484
33299B Arms, ordnance, and accessories manufacturing	2.1166	0.5647	12.4155	1.1965	2.2083	2.6302
332500 Hardware manufacturing	2.3042	0.5719	13.0028	1.1536	2.6031	3.0682
332600 Spring and wire product manufacturing	2.3834	0.6175	13.9959	1.1922	2.4476	2.8619
332710 Machine shops	2.4721	0.7731	17.7473	1.3127	2.1342	2.4493
332720 Turned product and screw, nut, and bolt manufacturing	2.3952	0.6837	14.7700	1.2428	2.2494	2.8086
332800 Coating, engraving, heat treating and allied activities	2.4266	0.6340	14.3094	1.1886	2.4343	2.7408
33291A Valve and fittings other than plumbing	2.3079	0.5974	13.2619	1.1912	2.5154	3.2096
332913 Plumbing fixture fitting and trim manufacturing	2.2854	0.4988	10.9843	1.1001	3.1805	4.4167
332991 Ball and roller bearing manufacturing	2.2254	0.5623	10.9737	1.1609	2.4711	3.8801
332996 Fabricated pipe and pipe fitting manufacturing	2.4782	0.6441	14.4163	1.2035	2.5662	3.1083
33299C Other fabricated metal manufacturing	2.3781	0.6071	13.4027	1.1752	2.4689	3.0153
333111 Farm machinery and equipment manufacturing	2.3067	0.5188	10.8328	1.0658	3.1092	4.4805
333112 Lawn and garden equipment manufacturing	2.2059	0.4386	9.8558	0.9103	3.7683	4.3980
333120 Construction machinery manufacturing	2.3334	0.5190	11.0185	1.0162	3.2433	4.4170
333130 Mining and oil and gas field machinery manufacturing	2.5391	0.6824	13.7213	1.1648	2.6350	4.0577
33329A Other industrial machinery manufacturing	2.5452	0.7356	15.2013	1.2363	2.4149	3.1455
333220 Plastics and rubber industry machinery manufacturing	2.5157	0.7183	15.0005	1.2120	2.4477	3.1926
333295 Semiconductor machinery manufacturing	2.3748	0.6783	11.5108	1.1171	2.3783	5.1878
33331A Vending, commercial, industrial, and office machinery manufacturing	2.5856	0.6473	13.1151	1.1455	2.9970	4.6803
333314 Optical instrument and lens manufacturing	2.4580	0.7353	14.5214	1.2136	2.2457	3.1764
333315 Photographic and photocopying equipment manufacturing	2.1184	0.5308	10.2477	1.1136	2.2894	3.1034
333319 Other commercial and service industry machinery manufacturing	2.3309	0.5815	11.7911	1.1243	2.6554	3.6411
33341A Air purification and ventilation equipment manufacturing	2.4627	0.6470	13.0020	1.1732	2.4991	3.4862
333414 Heating equipment (except warm air furnaces) manufacturing	2.4395	0.6165	13.6713	1.1685	2.7503	3.2476
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	2.3452	0.5387	11.3015	1.0995	2.9653	4.0356
333511 Industrial mold manufacturing	2.5344	0.8440	17.5971	1.3640	2.0180	2.5597

(Continued)

Region Definition: Pennsylvania

*includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

2. Each entry in column 2 represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.—Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.—Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

7

**Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
33351A Metal cutting and forming machine tool manufacturing	2.5435	0.7765	16.7055	1.2790	2.2663	2.6777
333514 Special tool, die, jig, and fixture manufacturing	2.5455	0.8449	17.8563	1.3602	2.0456	2.5144
333515 Cutting tool and machine tool accessory manufacturing	2.3816	0.7435	15.2403	1.3001	2.0724	2.6452
33351B Rolling mill and other metalworking machinery manufacturing	2.4676	0.7372	14.6257	1.2333	2.2895	3.1192
333611 Turbine and turbine generator set units manufacturing	1.9009	0.3697	8.0194	1.0818	3.2579	5.8668
333612 Speed changer, industrial high-speed drive, and gear manufacturing	2.3728	0.6952	13.9983	1.2182	2.2570	3.2024
333613 Mechanical power transmission equipment manufacturing	2.4376	0.6784	14.6106	1.2072	2.4478	3.1309
333618 Other engine equipment manufacturing	2.3805	0.5044	10.7290	0.9903	3.8259	6.0129
333911 Pump and pumping equipment manufacturing	2.4207	0.6263	12.8905	1.1604	2.7043	3.9146
333912 Air and gas compressor manufacturing	2.5868	0.6652	13.3076	1.1575	2.9423	4.7869
333920 Material handling equipment manufacturing	2.5449	0.6736	13.7406	1.1550	2.6847	3.7614
333991 Power-driven handtool manufacturing	2.2264	0.4700	10.0788	1.0717	3.3877	4.8966
33399A Other general purpose machinery manufacturing	2.4471	0.6778	13.6423	1.1930	2.4235	3.3860
333993 Packaging machinery manufacturing	2.5092	0.7359	14.7723	1.2266	2.3826	3.2365
333994 industrial process furnace and oven manufacturing	2.3639	0.7293	15.0330	1.2389	2.1356	2.6942
33399B Fluid power process machinery	2.4602	0.6883	14.3233	1.2266	2.4609	3.2186
334111 Electronic computer manufacturing	1.8478	0.3567	6.7093	0.7783	3.1629	4.7396
334112 Computer storage device manufacturing	2.1656	0.5413	9.7046	0.9936	2.6829	4.5476
33411A Computer terminals and other computer peripheral equipment manufacturing	2.4271	0.6322	13.7145	1.1079	2.7480	2.9984
334210 Telephone apparatus manufacturing	2.0183	0.4436	9.4204	0.9312	2.8768	3.3243
334220 Broadcast and wireless communications equipment	2.2038	0.5363	11.8064	0.9293	2.9180	3.2462
334290 Other communications equipment manufacturing	2.3206	0.6142	12.2026	1.1064	2.6437	3.4678
334300 Audio and video equipment manufacturing	2.2640	0.4815	10.3682	0.9307	3.7903	4.3614
334411 Electron tube manufacturing	2.4935	0.6111	13.9068	1.0765	2.9661	3.1474
334412 Bare printed circuit board manufacturing	2.3608	0.6493	17.4823	1.1100	2.3902	2.0773
334413 Semiconductor and related device manufacturing	2.0926	0.4887	10.1154	1.1064	2.8098	3.3829
33441A Electronic capacitor, resistor, coil, transformer, and other inductor manufacturing	2.4879	0.7318	16.9830	1.2555	2.2905	2.3306
334417 Electronic connector manufacturing	2.5624	0.7235	15.8201	1.2199	2.5571	2.8095
334418 Printed circuit assembly (electronic assembly) manufacturing	2.1186	0.4748	11.5546	0.8696	2.9128	2.5830
334419 Other electronic component manufacturing	2.4876	0.7214	17.9283	1.2044	2.4214	2.2071
334510 Electromedical and electrotherapeutic apparatus manufacturing	2.3015	0.5827	12.3375	1.1146	2.7002	3.0519
334511 Search, detection, and navigation instruments manufacturing	2.4034	0.7223	14.7667	1.2221	2.3166	2.8207

(Continued)

Region Definition: Pennsylvania

*Includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

2. Each entry in column 2 represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.—Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.—Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

8

**Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
334512 Automatic environmental control manufacturing	2.3345	0.6188	15.8082	1.1583	2.5953	2.2358
334513 Industrial process variable instruments manufacturing	2.4679	0.7012	15.1296	1.1891	2.4437	2.8546
334514 Totalizing fluid meters and counting devices manufacturing	2.3323	0.5420	11.8827	0.9670	3.2793	3.8662
334515 Electricity and signal testing Instruments manufacturing	2.1929	0.7028	15.2631	1.1501	1.8736	2.2035
334516 Analytical laboratory instrument manufacturing	2.4398	0.6776	14.9487	1.1661	2.5660	2.7088
334517 Irradiation apparatus manufacturing	2.1776	0.5196	10.2126	1.0354	2.8147	3.8439
33451A Watch, clock, and other measuring and controlling device manufacturing	2.4219	0.7005	15.7460	1.1802	2.3894	2.5296
33461A Software, audio, and video media reproducing	2.3673	0.6064	13.1893	1.1138	2.6567	2.8768
334613 Magnetic and optical recording media manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335110 Electric lamp bulb and part manufacturing	2.1134	0.5202	11.5229	1.1872	2.3951	2.5945
335120 Lighting fixture manufacturing	2.2797	0.5499	12.7047	1.1226	2.6873	2.8765
335210 Small electrical appliance manufacturing	2.1953	0.4799	10.0658	1.0802	2.9103	3.6497
335221 Household cooking appliance manufacturing	2.5121	0.5281	12.8423	1.0839	4.0135	3.6145
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	2.3841	0.5856	13.1036	1.1305	2.6157	3.0068
335312 Motor and generator manufacturing	2.2625	0.5664	11.9378	1.1031	2.4727	3.1220
335313 Switchgear and switchboard apparatus manufacturing	2.1492	0.5282	10.7283	1.1391	2.4581	3.1197
335314 Relay and industrial control manufacturing	2.2226	0.5908	11.5616	1.1566	2.3554	3.0984
335911 Storage battery manufacturing	2.2987	0.5698	12.4566	1.0423	2.6070	3.2473
335912 Primary battery manufacturing	1.9932	0.3842	8.5134	1.0717	3.1520	3.6444
335920 Communication and energy wire and cable manufacturing	2.4505	0.5352	11.8715	1.0320	3.0611	3.6548
335930 Wiring device manufacturing	2.1730	0.5323	10.8038	1.1413	2.4560	3.3692
335991 Carbon and graphite product manufacturing	2.2878	0.5719	12.2909	1.1414	2.4606	2.7875
335999 All other miscellaneous electrical equipment and component manufacturing	2.2600	0.6207	13.7652	1.1239	2.3723	2.6878
336111 Automobile manufacturing	1.9288	0.3517	7.7630	0.7238	3.2271	4.0919
336112 Light truck and utility vehicle manufacturing	1.9855	0.3651	10.8026	0.7075	3.3493	2.3154
336120 Heavy duty truck manufacturing	2.2033	0.4193	11.1599	0.7423	3.8466	2.7750
336211 Motor vehicle body manufacturing	2.3188	0.5260	13.1991	1.0729	2.9727	2.6623
336212 Truck trailer manufacturing	2.4656	0.5760	16.2049	1.0070	2.9945	2.3432
336213 Motor home manufacturing	2.4091	0.4912	12.7184	0.9453	3.6863	3.0084
336214 Travel trailer and camper manufacturing	2.4603	0.5851	16.5045	1.0125	2.9068	2.2783

(Continued)

Region Definition: Pennsylvania

*includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

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3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.--Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.--Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

9

**Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
336300 Motor vehicle parts manufacturing	2.4466	0.5756	15.5883	1.0646	3.1732	2.5798
336411 Aircraft manufacturing	1.9192	0.4332	8.3245	0.8560	2.5027	3.5786
336412 Aircraft engine and engine parts manufacturing	2.0219	0.4976	10.7531	0.9543	2.4689	2.9075
336413 Other aircraft parts and auxiliary equipment manufacturing	2.4383	0.6929	15.2392	1.2263	2.4182	2.7437
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	2.2847	0.7708	13.8540	1.2734	1.9354	2.8521
336500 Railroad rolling stock manufacturing	2.2815	0.5204	11.0203	1.0603	2.9637	3.4661
336611 Ship building and repairing	2.4032	0.6962	15.5890	1.2200	2.2683	2.5928
336612 Boat building	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336991 Motorcycle, bicycle, and parts manufacturing	2.3109	0.5029	11.7390	1.0256	3.2559	3.4545
336992 Military armored vehicle, tank, and tank component manufacturing	2.4562	0.6085	12.5117	1.1783	2.9323	3.9663
336999 All other transportation equipment manufacturing	2.2660	0.4443	11.6354	0.9667	4.0760	3.2396
337110 Wood kitchen cabinet and countertop manufacturing	2.4733	0.6593	15.1802	1.1238	2.5528	3.0341
337121 Upholstered household furniture manufacturing	2.3224	0.5895	13.9884	1.0804	2.3989	2.5224
337122 Nonupholstered wood household furniture manufacturing	2.1980	0.5743	13.7681	1.1342	2.2096	2.3415
33712A Metal and other household furniture (except wood) manufacturing	2.3880	0.5687	12.0995	1.0844	2.7085	3.6366
337127 Institutional furniture manufacturing	2.3516	0.6128	13.6401	1.1567	2.4176	2.9431
33721A Wood television, radio, and sewing machine cabinet manufacturing	1.9989	0.4676	10.7184	1.0830	2.2619	2.6142
337212 Office furniture and custom architectural woodwork and millwork manufacturing	2.2413	0.5772	12.0919	1.1544	2.3295	3.1494
337215 Showcase, partition, shelving, and locker manufacturing	2.5000	0.6668	14.2402	1.1747	2.3997	3.1324
337910 Mattress manufacturing	2.4240	0.5324	11.8389	1.1069	3.3329	4.1490
337920 Blind and shade manufacturing	2.5093	0.6406	14.3696	1.1340	2.5346	2.9400
33911A Laboratory apparatus and surgical appliance and supplies manufacturing	2.1861	0.6012	11.9367	1.2021	2.1804	3.0267
339112 Surgical and medical instrument manufacturing	2.1839	0.6237	11.3139	1.2338	2.1034	3.3433
339114 Dental equipment and supplies manufacturing	2.2044	0.6379	13.0366	1.1868	2.0818	2.7094
339115 Ophthalmic goods manufacturing	2.0815	0.5778	12.7586	1.1898	2.0893	2.3315
339116 Dental laboratories	2.3849	0.9211	21.2886	1.4409	1.7429	1.8791
339910 Jewelry and silverware manufacturing	2.1826	0.5656	12.0798	0.9871	2.3201	3.0124
339920 Sporting and athletic goods manufacturing	2.3509	0.6114	13.0431	1.1441	2.4835	3.1758
339930 Doll, toy, and game manufacturing	2.1649	0.5147	10.1547	1.0884	2.3798	3.3691
339940 Office supplies (except paper) manufacturing	2.1163	0.5660	11.8905	1.1436	2.1008	2.5434
339950 Sign manufacturing	2.5631	0.7245	15.7570	1.2296	2.3591	2.8423
339991 Gasket, packing, and sealing device manufacturing	2.4237	0.7393	14.0648	1.2367	2.1177	2.9618

(Continued)

Region Definition: Pennsylvania

*Includes Government enterprises.

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3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.--Multipliers are based on the 2002 Benchmark input-output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.--Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

10

Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
339992 Musical instrument manufacturing	2.3028	0.7152	15.6380	1.2468	2.0285	2.3434
33999A All other miscellaneous manufacturing	2.3887	0.6841	14.4320	1.2218	2.1834	2.7186
339994 Broom, brush, and mop manufacturing	2.2151	0.6174	13.0202	1.1738	2.1677	2.7617
420000 Wholesale trade	1.9874	0.5896	12.0169	1.2572	1.9257	2.5820
4A0000 Retail trade	2.0265	0.6205	21.8311	1.2596	1.8437	1.5590
481000 Air transportation	2.0459	0.5379	12.5991	1.0122	2.1119	2.4835
482000 Rail transportation	2.1181	0.4908	10.2017	1.1100	2.8279	4.1578
483000 Water transportation	2.0347	0.4121	9.7311	0.8943	3.7391	5.3581
484000 Truck transportation	2.3118	0.6747	16.7818	1.2114	2.3335	2.6394
485A00 Transit and ground passenger transportation	2.4741	0.7125	23.6534	1.1330	2.3322	1.7504
486000 Pipeline transportation	2.4715	0.6250	13.0602	1.0714	3.0714	5.8507
48A000 Scenic and sightseeing transportation and support activities for transportation	2.3210	0.7846	20.2590	1.3257	2.0053	2.1248
492000 Couriers and messengers	2.0574	0.5872	17.4508	1.1871	2.0872	1.8859
493000 Warehousing and storage	2.2389	0.7656	20.6171	1.3507	1.8486	1.9127
511110 Newspaper publishers	2.1161	0.6154	16.9396	1.2189	2.0836	1.9197
511120 Periodical publishers	2.3275	0.5905	13.3867	1.2055	2.8597	3.6823
511130 Book publishers	2.1039	0.5040	11.5925	1.1821	2.8436	3.4616
5111A0 Directory, mailing list, and other publishers	2.1734	0.4911	11.7335	1.1646	3.2930	3.8364
511200 Software publishers	2.0401	0.6234	11.9564	1.2536	1.9605	3.4706
512100 Motion picture and video industries	1.7432	0.4170	13.3962	1.0856	2.0076	1.7618
512200 Sound recording industries	2.0731	0.4931	13.0341	0.9756	2.5845	2.6357
515100 Radio and television broadcasting	2.2268	0.7124	12.7665	1.1554	2.0277	3.3559
515200 Cable and other subscription programming	2.1258	0.6627	11.2400	1.1081	1.9484	3.8159
51A000 Internet and other information services	2.0124	0.5720	13.4009	1.2255	1.9957	2.3425
517000 Telecommunications	1.9163	0.4037	8.3426	1.0824	2.5204	3.7138
52A000 Monetary authorities and depository credit intermediation	1.8084	0.4635	10.6287	1.1763	2.0193	2.4821
522A00 Nondepository credit intermediation and related activities	1.9440	0.4931	10.2175	1.1895	2.2029	3.1845
523000 Securities, commodity contracts, investments, and related activities	2.2620	0.8134	23.8081	1.3146	1.8008	1.7072
524100 Insurance carriers	2.2663	0.6337	13.3112	1.2680	2.4140	3.2276
524200 Insurance agencies, brokerages, and related activities	2.2369	0.6780	15.7170	1.3128	2.1366	2.7772
525000 Funds, trusts, and other financial vehicles	2.3226	0.5600	16.3519	0.9717	4.2640	3.7722
531000 Real estate	1.5244	0.2756	17.4436	1.1047	2.0777	1.3140
S00800 Owner-occupied dwellings	1.4856	0.1325	3.5147	0.9893	0.0000	0.0000
532100 Automotive equipment rental and leasing	2.0540	0.5076	10.3274	1.1991	2.4827	3.7822
532A00 General and consumer goods rental except video tapes and discs	2.3668	0.7554	15.3268	1.3416	2.1015	2.7342

(Continued)

Region Definition: Pennsylvania

*Includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

2. Each entry in column 2 represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.--Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.--Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

11

**Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
532230 Video tape and disc rental	2.3772	0.6917	20.0720	1.4056	2.3073	1.8893
532400 Commercial and industrial machinery and equipment rental and leasing	2.2097	0.5867	10.9686	1.2415	2.5413	5.0401
533000 Lessors of nonfinancial intangible assets	1.4444	0.2363	4.8147	1.0809	2.1149	3.4509
541100 Legal services	2.1657	0.8526	14.1304	1.4341	1.6070	2.8361
541200 Accounting, tax preparation, bookkeeping, and payroll services	2.0086	0.7045	17.4486	1.3481	1.6828	1.8266
541300 Architectural, engineering, and related services	2.1551	0.6950	14.6116	1.3073	1.9469	2.7051
541400 Specialized design services	1.9921	0.6249	18.1085	1.2853	1.8103	1.7681
541511 Custom computer programming services	2.1839	0.8541	16.3801	1.4040	1.6699	2.5525
541512 Computer systems design services	2.3082	0.8213	15.9897	1.3492	1.8503	2.8449
54151A Other computer related services, including facilities management	2.0184	0.7121	13.8864	1.3087	1.6758	2.3879
541610 Management, scientific, and technical consulting services	2.1021	0.7107	15.9181	1.3320	1.7998	2.2268
5416A0 Environmental and other technical consulting services	2.0382	0.6573	17.0614	1.3022	1.8380	1.9546
541700 Scientific research and development services	2.2862	0.7683	14.2242	1.3267	1.9351	3.4076
541800 Advertising and related services	2.0784	0.6894	15.6283	1.2873	1.7857	2.1528
5419A0 All other miscellaneous professional, scientific, and technical services	2.2696	0.9558	19.1466	1.4856	1.5916	2.0901
541920 Photographic services	2.3607	0.8742	33.1420	1.4025	1.7582	1.4688
541940 Veterinary services	2.3919	0.7919	21.4846	1.3222	1.8641	1.8096
550000 Management of companies and enterprises	2.1915	0.7377	12.9221	1.3297	1.8513	3.1657
561300 Employment services	2.1382	0.9092	39.0683	1.4911	1.5473	1.2997
561500 Travel arrangement and reservation services	2.1549	0.6617	20.5271	1.2688	1.8678	1.7672
561100 Office administrative services	2.2912	0.8386	19.0722	1.3943	1.8085	2.2377
561200 Facilities support services	2.2068	0.7146	20.4389	1.3145	1.9853	1.9461
561400 Business support services	2.0886	0.6583	21.8020	1.2795	1.9234	1.6904
561600 Investigation and security services	2.2129	0.8438	33.9522	1.4157	1.6775	1.3750
561700 Services to buildings and dwellings	2.1848	0.6738	28.2785	1.2183	1.9403	1.4525
561900 Other support services	2.0048	0.5472	20.5050	1.2187	2.1002	1.6450
562000 Waste management and remediation services	2.0781	0.5463	12.4844	1.1811	2.2569	2.5971
611100 Elementary and secondary schools	2.2218	0.7658	25.2294	1.3108	1.7258	1.6466
611A00 Junior colleges, colleges, universities, and professional schools	2.3320	0.7853	21.2563	1.3291	1.8040	1.8525
611B00 Other educational services	2.0794	0.5903	20.6556	1.2324	2.0719	1.6955
621A00 Offices of physicians, dentists, and other health practitioners	2.2970	0.8750	17.6067	1.4175	1.7151	2.2918
621B00 Medical and diagnostic labs and outpatient and other ambulatory care services	2.3525	0.8420	20.1340	1.3928	1.8666	2.0963
621600 Home health care services	2.2799	0.9323	25.6732	1.4654	1.6241	1.6358

(Continued)

Region Definition: Pennsylvania

*Includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

2. Each entry in column 2 represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

3. Each entry in column 3 represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to final demand by the industry corresponding to the entry. Because the employment multipliers are based on 2010 data, the output delivered to final demand should be in 2010 dollars.

4. Each entry in column 4 represents the total dollar change in value added that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

5. Each entry in column 5 represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the industry corresponding to the entry.

6. Each entry in column 6 represents the total change in number of jobs in all industries for each additional job in the industry corresponding to the entry.

NOTE.--Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.--Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

RIMS II Multipliers (2002/2010)

12

**Table 1.5 Total Multipliers for Output, Earnings, Employment, and Value Added by Detailed Industry
State of Pennsylvania (Type II)**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
622000 Hospitals	2.2768	0.7584	17.9542	1.3172	1.8641	2.2071
623000 Nursing and residential care facilities	2.2400	0.8249	26.0801	1.3864	1.6944	1.5736
624A00 Individual and family services	2.2766	0.7826	30.5355	1.3321	1.8182	1.4816
624200 Community food, housing, and other relief services, including rehabilitation services	2.2517	0.7218	24.2608	1.2815	1.9156	1.7171
624400 Child day care services	2.0900	0.6221	27.4153	1.2281	1.9288	1.4598
711100 Performing arts companies	2.0570	0.6263	32.5244	1.2011	1.9552	1.3800
711200 Spectator sports	2.2986	0.8171	17.7943	1.3991	1.8757	2.2810
711A00 Promoters of performing arts and sports and agents for public figures	2.1812	0.5755	33.1925	1.1531	2.4193	1.4430
711500 Independent artists, writers, and performers	1.8367	0.5021	22.8698	1.1987	1.9749	1.4764
712000 Museums, historical sites, zoos, and parks	2.2477	0.7850	25.9955	1.3544	1.7628	1.6201
713A00 Amusement parks, arcades, and gambling industries	2.0325	0.6626	23.7888	1.3021	1.7848	1.4761
713B00 Other amusement and recreation industries	2.0900	0.6368	26.1976	1.2589	1.8991	1.4655
713940 Fitness and recreational sports centers	2.1714	0.6494	35.7471	1.2590	1.9868	1.3324
713950 Bowling centers	2.0761	0.6008	29.5845	1.2474	1.9474	1.3517
7211A0 Hotels and motels, including casino hotels	2.0320	0.5891	19.8656	1.2509	1.9990	1.6319
721A00 Other accommodations	2.0423	0.5096	18.0845	1.1839	2.4234	1.7875
722000 Food services and drinking places	2.2444	0.6435	28.3189	1.2177	2.0686	1.4419
8111A0 Automotive repair and maintenance, except car washes	2.1202	0.6272	16.4765	1.1968	1.9747	2.0613
811192 Car washes	2.1168	0.6416	25.3550	1.2412	1.8295	1.4832
811200 Electronic and precision equipment repair and maintenance	2.0367	0.6573	14.3181	1.2774	1.8218	2.3012
811300 Commercial and industrial machinery and equipment repair and maintenance	1.9945	0.6175	13.1008	1.2728	1.8212	2.2686
811400 Personal and household goods repair and maintenance	1.9487	0.4851	12.9093	1.1416	2.2140	2.2339
812100 Personal care services	2.0898	0.6567	19.5743	1.2940	1.8292	1.7559
812200 Death care services	2.4704	0.7813	16.5830	1.3206	2.1878	2.7550
812300 Dry-cleaning and laundry services	1.8785	0.6021	14.0250	1.2855	1.6772	1.8241
812900 Other personal services	1.8519	0.3683	10.4626	1.0790	3.0608	3.2310
813100 Religious organizations	2.3702	0.7888	25.4319	1.2551	2.0172	1.8003
813A00 Grantmaking, giving, and social advocacy organizations	2.3481	0.6841	18.3648	1.2100	2.3245	2.5574
813B00 Civic, social, professional, and similar organizations	2.3819	0.6767	24.4432	1.2171	2.2867	1.7652
491000 Postal service	2.1608	0.8178	18.7680	1.4648	1.5345	1.9000
S00A00 Other government enterprises	2.3820	0.6442	14.1410	1.2025	2.4618	3.2752
H00000 Households	1.4040	0.3807	10.7254	0.8234	0.0000	0.0000

Region Definition: Pennsylvania

*Includes Government enterprises.

1. Each entry in column 1 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the industry corresponding to the entry.

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NOTE.--Multipliers are based on the 2002 Benchmark Input-Output Table for the Nation and 2010 regional data. Industry List A identifies the industries corresponding to the entries.

SOURCE.--Regional Input-Output Modeling System (RIMS II), Regional Product Division, Bureau of Economic Analysis.

APPENDIX C

Demographics of Impacted Area

Demographics of Impacted Area

The following two tables summarize population for the impact area. The first shows the U.S. Census Bureau population counts for 2000, 2010, and 2013 for the counties included in the impact area. In addition, there are counts of the area's projected population for 2019, as well as population by race/ethnicity, provided by Esri Business Analyst.

Impact Area Population	2000	2010	2013
Pennsylvania, PA	12,280,548	12,702,379	12,773,801
Total	12,280,548	12,702,379	12,773,801

Source: US Census Bureau

Impact Area Population	
2000 Population	12,281,054
2010 Population	12,702,379
2015 Population	12,840,278
2020 Population	12,992,578
2000-2010 Annual Rate	0.34%
2010-2015 Annual Rate	0.21%
2015-2020 Annual Rate	0.24%
2015 Male Population	48.90%
2015 Female Population	51.10%
2015 Median Age	41.0

Source: An Esri Executive Summary for

In the identified area, the current year population is 12,840,278. In 2010, the Census count in the area was 12,702,379. The rate of change since 2010 was 0.21% annually. The five-year projection for the population in the area is 12,992,578 representing a change of 0.24% annually from 2013 to 2018. Currently, the population is 48.90% male and 51.10% female.

The median age in the area is 41.0, compared to U.S. median age of 37.3.

Race and Ethnicity	
2015 White Alone	80.4%
2015 Black Alone	11.1%
2015 American Indian/Alaska Native Alone	0.2%
2015 Asian Alone	3.2%
2015 Pacific Islander Alone	0.0%
2015 Other Race	2.8%

2015 Two or More Races	2.2%
2015 Hispanic Origin (Any Race)	6.8%

Persons of Hispanic origin represent 6.8% of the population in the identified area compared to 17.5% of the U.S. population. Persons of Hispanic Origin may be of any race.

Households	
2000 Households	4,777,003
2010 Households	5,018,904
2015 Total Households	5,101,362
2020 Total Households	5,170,785
2000-2010 Annual Rate	0.50%
2010-2015 Annual Rate	0.31%
2015-2020 Annual Rate	0.27%
2015 Average Household Size	2.43

The household count in this area has changed from 5,018,904 in 2010 to 5,101,362 in the current year, a change of 0.31% annually. The five-year projection of households is 5,170,785, a change of 0.27% annually from the current year total. Average household size is currently 2.43.

Next are tables that present household information, including income and distribution of housing unit types.

Median Household Income	
2015 Median Household Income	\$53,104
2020 Median Household Income	\$60,761
2015-2020 Annual Rate	2.73%
Average Household Income	
2015 Average Household Income	\$72,887
2020 Average Household Income	\$83,098
2015-2020 Annual Rate	2.66%
Per Capita Income	
2015 Per Capita Income	\$29,168
2020 Per Capita Income	\$33,283
2015-2020 Annual Rate	2.67%

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Data Note: Income is expressed in current dollars

Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2013 and 2018. Esri converted Census 2000 data into 2010 geography.

Current median household income is \$53,104 in the area, compared to \$52,076 for all U.S. households. Median household income is projected to be \$60,761 in five years, compared to \$59,599 for all U.S. households.

Current average household income is \$72,887 in the area, compared to \$72,809 for all U.S. households. Average household income is projected to be \$83,098 in five years, compared to \$83,937 for all U.S. households.

Current per capita income is \$29,168 in the area, compared to the U.S. per capita income of \$27,871. The per capita income is projected to be \$33,283 in five years, compared to \$32,168 for all U.S. households.

Housing	
2000 Total Housing Units	5,249,750
2000 Owner Occupied Housing Units	3,406,337
2000 Renter Occupied Housing Units	1,370,666
2000 Vacant Housing Units	472,747
2010 Total Housing Units	5,567,315
2010 Owner Occupied Housing Units	3,491,722
2010 Renter Occupied Housing Units	1,527,182
2010 Vacant Housing Units	548,411
2015 Total Housing Units	5,672,970
2015 Owner Occupied Housing Units	3,437,717
2015 Renter Occupied Housing Units	1,663,645
2015 Vacant Housing Units	571,608
2020 Total Housing Units	5,760,111
2020 Owner Occupied Housing Units	3,476,179
2020 Renter Occupied Housing Units	1,694,606
2020 Vacant Housing Units	589,326

Currently, 60.6% of the 5,672,970 housing units in the area are owner-occupied; 29.3% are renter-occupied; and 10.1% are vacant. Currently, in the U.S., 56.0% of housing units are owner-occupied, 32.4% are renter-occupied, and 11.6% are vacant. In 2010, there were 5,567,315 housing units in the area - 62.7% owner-occupied, 27.4% renter-occupied, and 9.9% vacant.

The following tables present civilian employment age 16+ years by occupation and industry.

By Occupation	Count	Percent
Total	5,914,876	100.0%
Management	540,434	9.1%
Business and financial operations	274,411	4.6%
Computer and mathematical	139,195	2.4%
Architecture and engineering	104,447	1.8%
Life, physical, and social science	58,366	1.0%
Community and social services	117,325	2.0%
Legal	67,206	1.1%
Education, training, and library	356,167	6.0%
Arts, design, entertainment, sports, and media	93,209	1.6%
Healthcare practitioner, technologists, and technicians	393,233	6.6%
Healthcare support	167,376	2.8%
Protective service	120,277	2.0%
Food preparation and serving related	332,907	5.6%
Building and grounds cleaning and maintenance	210,001	3.6%
Personal care and service	198,596	3.4%
Sales and related	611,300	10.3%
Office and administrative support	840,296	14.2%
Farming, fishing, and forestry	24,149	0.4%
Construction and extraction	272,314	4.6%
Installation, maintenance, and repair	196,538	3.3%
Production	384,414	6.5%
Transportation and material moving	412,715	7.0%
Total	5,914,876	100.0%

Total	Count	Percent
Total	5,914,876	100.0%
Agriculture, forestry, fishing and hunting	52,761	0.9%
Mining, quarrying, and oil and gas extraction	28,801	0.5%
Construction	339,203	5.7%
Manufacturing	732,754	12.4%
Wholesale trade	166,569	2.8%
Retail trade	696,381	11.8%
Transportation and warehousing	244,200	4.1%
Utilities	55,935	0.9%

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Information	105,649	1.8%
Finance and insurance	294,572	5.0%
Real estate and rental and leasing	87,323	1.5%
Professional, scientific, and technical services	355,238	6.0%
Management of companies and enterprises	5,263	0.1%
Administrative and support and waste management services	213,360	3.6%
Educational services	573,029	9.7%
Health care and social assistance	958,878	16.2%
Arts, entertainment, and recreation	104,599	1.8%
Accommodation and food services	377,569	6.4%
Other services, except public administration	276,018	4.7%
Public administration	246,774	4.2%
Total	5,914,876	100.0%

Source: U.S. Census Bureau, 2008-2012 American Community Survey

Exhibit D

FORM OF GENERAL CERTIFICATE

PENNSYLVANIA TURNPIKE COMMISSION

The undersigned officer of the Pennsylvania Turnpike Commission (the "Commission"), hereby certifies that on this _____, 2016 that pursuant to Section 7.1(a)(iii) of the Loan Agreement dated August 4, 2016 (the "Loan Agreement") between Commission and DVRC Pennsylvania Turnpike II Limited Partnership (the "Lender"), that he is the Chief Financial Officer and further certifies, to the best of his knowledge and belief after reasonable investigation, do hereby certify that:

1. The Commission is a duly constituted instrumentality of the Commonwealth of Pennsylvania.
2. The Loan Agreement and the other documents and certificates executed and delivered in connection therewith, have been duly authorized, executed, acknowledged and delivered by the Commission. The signatures of said officers thereon are their respective signatures.
3. The Loan Agreement has been executed and delivered in accordance with a resolution adopted by the Commission on May 17, 2016, attached hereto as Exhibit "A", which resolution is in full force and effect on the date hereof and has not been amended, modified or repealed since the date of adoption.
4. The Loan Agreement constitutes the legal, valid and binding obligations of the Commission enforceable against the Commission in accordance with its terms, except that such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws heretofore or hereafter enacted affecting creditors' rights generally to the extent constitutionally applicable and to the application of general equitable principles and the exercise of judicial discretion in appropriate cases whether such enforcement is sought in proceedings in equity or at law.

[signature page follows]

IN WITNESS WHEREOF, I have hereunto set my hand as Chief Financial Officer of the Commission as of the date first above written.

Name: Nikolaus Grieshaber
Title: Chief Financial Officer

Exhibit "A"

Resolution

Exhibit D

PENNSYLVANIA TURNPIKE COMMISSION AGENDA ITEM

Date: May 17, 2016
To: THE PENNSYLVANIA TURNPIKE COMMISSION
From: Rick Dreher, Assistant CFO-Finance
Subject: Turnpike Promissory Notes
Funding Source: Operating/Capital Funding WBS#
Strategic Plan Objective: Commission-wide No. V Financial
Department No. V.D.1



It is recommended that the Commission authorize and approve the following:
Authorizing the approval of the issuance of one or more Pennsylvania Turnpike Commission's Promissory Notes, in an aggregate principal amount not to exceed \$800,000,000 to finance the costs of a portion of Commission's 10 year Capital Plan; authorizing the execution, delivery and distribution of the following: (1) a loan agreement, (2) one or more promissory notes, and (3) any other necessary or appropriate documents or certificates; declaring the Pennsylvania Turnpike Commission's official intent that it be reimbursed from note proceeds for certain expenditures paid prior to the issuance of such notes; authorizing the taking of further action; repealing inconsistent resolutions; authorizing the appointment of legal counsel; and declaring that this resolution shall be liberally construed.

☐ Validation Memo attached (if necessary)

☐ Sole Source Request attached (if necessary)


Rick Dreher
Assistant CFO-Finance


Nikolaus Grieshaber
Chief Financial Officer

CONCUR:


Mark P. Compton
Chief Executive Officer

PENNSYLVANIA TURNPIKE COMMISSION

RESOLUTION

May 17, 2016

AUTHORIZING THE ISSUANCE OF ONE OR MORE TAXABLE OR TAX-EXEMPT PROMISSORY NOTES OF THE PENNSYLVANIA TURNPIKE COMMISSION, IN AN AGGREGATE PRINCIPAL AMOUNT NOT TO EXCEED \$800,000,000, TO FINANCE THE COSTS OF THE PROJECTS IDENTIFIED IN THE PENNSYLVANIA TURNPIKE COMMISSION'S CURRENT TEN YEAR CAPITAL PROGRAM; AUTHORIZING THE EXECUTION, DELIVERY AND DISTRIBUTION OF THE FOLLOWING: (1) A LOAN AGREEMENT, (2) ONE OR MORE PROMISSORY NOTES, AND (3) ANY OTHER NECESSARY OR APPROPRIATE DOCUMENTS OR CERTIFICATES; DECLARING THE PENNSYLVANIA TURNPIKE COMMISSION'S OFFICIAL INTENT THAT IT BE REIMBURSED FROM NOTE PROCEEDS FOR CERTAIN EXPENDITURES PAID PRIOR TO THE ISSUANCE OF SUCH NOTES; AUTHORIZING THE TAKING OF FURTHER ACTION; REPEALING INCONSISTENT RESOLUTIONS; AUTHORIZING APPOINTMENT OF LEGAL COUNSEL; AND DECLARING THAT THIS RESOLUTION SHALL BE LIBERALLY CONSTRUED.

WHEREAS, the Pennsylvania Turnpike Commission (the "Commission"), by virtue of an Act of the General Assembly of Pennsylvania approved July 18, 2007, No. 2007-44 ("Act 44"), is authorized and empowered (1) to construct, operate and maintain turnpike extensions and turnpike improvements at such specific locations and according to such schedule as shall be deemed feasible and approved by the commission, all as identified in Act 44; (2) to provide, by resolution, at one time or from time to time, for the issuance of turnpike revenue or other bonds, notes or other obligations of the Commission for the purpose of paying the costs of the turnpikes as defined in Act 44; and (3) to pay the principal of and interest on such bonds, notes or other obligations solely from the revenues of the Commission or from such funds as may be available to the Commission for that purpose; and

WHEREAS, the Commission intends to undertake the projects identified in the Commission's current ten year capital program (collectively, the "Project"); and

WHEREAS, the Commission has determined to enter into a loan agreement (the "Loan Agreement") with DVRC Pennsylvania Turnpike, LP (the "Lender") that has been created to permit foreign investors to invest in, among other things, transportation projects in eligible counties and obtain lawful U.S. residence under the "Immigrant Investor Program" which is currently administered by the U.S. Citizenship and Immigration Services; and

WHEREAS, pursuant to the Loan Agreement, the Commission may borrow up to \$800,000,000 in separate tranches and issue to the Lender, from time to time, its Pennsylvania Turnpike Commission Turnpike Promissory Notes (or similar designation), taxable or tax-

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exempt (collectively, the "Notes") in an aggregate principal amount not to exceed \$800,000,000 to finance the costs of the Project; and

WHEREAS, the Commission has entered into that certain Amended and Restated Trust Indenture originally dated as of July 1, 1986 and amended and restated as of March 1, 2001, by and between U.S. Bank National Association, as successor trustee (the "Trustee") and the Commission (as amended and supplemented, the "Indenture"); and

WHEREAS, the Loan Agreement provides that when any of the Notes is intended to be issued to the Lender by the Commission, the Commission shall request the Trustee to authenticate such Note(s) as Additional Bonds under and pursuant to the conditions set forth in the Indenture, particularly Section 210 thereof, and at such time to enter into a supplemental indenture with respect to each such Note (a "Supplemental Indenture" and collectively with respect to all the Notes, the "Supplemental Indentures"), and

WHEREAS, the Commission wishes to make a declaration of an official intent that the Commission be reimbursed from proceeds of the Notes for certain expenditures that may be paid prior to the issuance of the Notes; and

WHEREAS, all terms not otherwise defined in this Resolution shall have the same meanings given to them in the Indenture.

NOW THEREFORE, BE IT RESOLVED by the Commission and it is hereby resolved as follows:

SECTION 1. The Commission hereby authorizes entering into the Loan Agreement and the issuance of one or more of its Notes, taxable or tax-exempt, in a single issuance or from time to time, in an aggregate principal amount not to exceed \$800,000,000, with the final principal amount of each Note to be determined by the Chairman, the Chief Executive Officer, or the Chief Financial Officer of the Commission (each, an "Authorized Officer"). Each Note shall bear the designation "Pennsylvania Turnpike Commission Turnpike Promissory Note", with the appropriate tranche designation for such Note, or similar designation or designations, and shall be in fully registered form, be dated, bear a fixed rate of interest not to exceed 2%, be in such amounts and mature at such times (not to exceed 5 years from the date of issuance), be subject to redemption, not be subject to prepayment except for failed VISA applications and failure to meet certain job requirements as set forth in the Loan Agreement, and be subject to such other terms as shall be further provided in the Loan Agreement, the Notes, the Indenture and this Resolution. The Authorized Officers, or any one of them, are hereby authorized to determine the final terms of the Loan Agreement and the Notes, in accordance with the terms of this Resolution, such determination to be evidenced by the execution of the Notes.

SECTION 2. The Project, with such additions and deletions as the Authorized Officers, or any of them, may approve, is hereby authorized and approved and all actions in connection therewith heretofore taken by the Commission and by any officers acting on behalf of the Commission are hereby ratified and approved.

SECTION 3. The Loan Agreement and form of Notes shall be approved by an Authorized Officer with such changes as are acceptable to such Authorizing Officer, such

approval to be evidenced by the execution of such Loan Agreement. The execution of the Loan Agreement with the original or facsimile signature of the Chairman, or Vice Chairman in the absence of the Chairman, of the Commission with an original or a facsimile of the official seal of the Commission and the attestation thereof by the Secretary/Treasurer or the Assistant Secretary/Assistant Treasurer of the Commission is hereby authorized.

SECTION 4. The Commission hereby declares that it desires to enter into the Supplemental Indentures with the Trustee in order to provide for the issuance of the Notes as Additional Bonds in accordance with the provisions set forth in Section 1 hereof. Upon execution, the Authorized Officers, or any one of them, are hereby authorized and directed to deliver the Notes to the Trustee for authentication, and to execute and deliver instructions to deliver the Notes when so authenticated, on behalf of the Commission, to or upon the order of the Lender thereof against receipt of the loan proceeds for such Note, all in accordance with and subject to the requirements of this Resolution and the Indenture, particularly Section 210 thereof. Such Notes as Additional Bonds shall be secured on a parity basis with the bonds outstanding under the Indenture. The form, terms and conditions of the Supplemental Indenture shall be such as the Authorized Officers, or any one of them shall approve. The Authorized Officers are hereby authorized to execute the Supplemental Indentures on behalf of the Commission, and to cause the corporate seal of the Commission to be affixed thereto, duly attested by the Secretary/Treasurer or Assistant Secretary/Assistant Treasurer of the Commission and to acknowledge the same on behalf of the Commission and to deliver the Supplemental Indentures to the Trustee.

SECTION 5. The Commission hereby authorizes the Chairman, Chief Executive Officer and Chief Financial Officer of the Commission to select and appoint bond counsel for the issuance of the Notes.

SECTION 6. The Authorized Officers, or any one of them, are hereby authorized to execute, deliver and file any and all such other certificates, instruments and documents and to take any and all such other action as may be required or as he may deem appropriate, to carry out and consummate the transactions to be carried out and consummated by the Commission as contemplated by this Resolution, the Loan Agreement, the Notes, the Indenture and the Supplemental Indentures. The Authorized Officers, or any one of them, may cause the corporate seal of the Commission to be affixed to any of the certificates, instruments, documents or agreements authorized hereby and the Secretary/Treasurer or Assistant Secretary/Assistant Treasurer of the Commission is hereby authorized to duly attest to the signature of the Chairman or the Chief Financial Officer thereon.


SECTION 7. Pursuant to Treasury Regulation §1.150-2 as promulgated under the Internal Revenue Code of 1986, as amended, it is hereby declared to be the official intent of the Commission, that the Commission be reimbursed from the proceeds of the Notes, authorized hereby in a maximum principal amount of \$800,000,000, for expenditures for the Project paid from the General Reserve Fund or other available funds of the Commission on or after the date which is sixty (60) days prior to the effective date of this Resolution (except for certain preliminary expenditures which are not subject to such time limitation as set forth in Treasury Regulation §1.150-2).

SECTION 8. All actions previously taken in furtherance of the purposes of this Resolution are hereby ratified and approved.

SECTION 9. All prior resolutions or parts thereof inconsistent herewith are hereby repealed.

SECTION 10. This Resolution shall be liberally construed so the Commission may fulfill its financing and other responsibilities in the current fiscal year pursuant to Act 44.


SECTION 11. This Resolution shall take effect immediately.


Sean F. Logan,
Chairman
Pennsylvania Turnpike Commission

The foregoing Resolution is hereby approved as to form and legality on this 17th day of May, 2016.


Chief Counsel
Pennsylvania Turnpike Commission

The undersigned hereby certifies that he/she is the duly appointed and acting (Assistant) Secretary/(Assistant) Treasurer of the Commission and that the foregoing Resolution was adopted by the Commission at a duly called and convened meeting at which a quorum was present and acting throughout on May 17, 2016.


~~(Assistant) Secretary~~ / (Assistant) Treasurer
Pennsylvania Turnpike Commission

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Exhibit D-1

FORM OF GENERAL CERTIFICATE

PENNSYLVANIA TURNPIKE COMMISSION

The undersigned officer of the Pennsylvania Turnpike Commission (the "Commission"), hereby certifies that on this _____, 2016 that pursuant to Section 7.1(b)(v) of the Loan Agreement dated August 4, 2016 (the "Loan Agreement") between Commission and DVRC Pennsylvania Turnpike II Limited Partnership (the "Lender"), that he is the _____ and further certifies, to the best of his knowledge and belief after reasonable investigation, do hereby certify that:

1. The Commission is a duly constituted instrumentality of the Commonwealth of Pennsylvania.

2. Supplemental Trust Indenture No. __, the Tranche __ Promissory Note issued pursuant to Supplemental Trust Indenture No. __ (collectively, the "Documents") and the other documents and certificates executed and delivered in connection therewith, have been duly authorized, executed, acknowledged and delivered by the Commission. The signatures of said officers thereon are their respective genuine signatures.

3. The Documents have been executed and delivered in accordance with a resolution adopted by the Commission on May 17, 2016 and _____, which resolutions are in full force and effect on the date hereof and have not been amended, modified or repealed since the date of adoption.

4. The Documents constitute the legal, valid and binding obligations of the Commission enforceable against the Commission in accordance with its terms, except that such enforceability is subject to bankruptcy, insolvency, reorganization, moratorium and other similar laws heretofore or hereafter enacted affecting creditors' rights generally to the extent constitutionally applicable and to the application of general equitable principles and the exercise of judicial discretion in appropriate cases whether such enforcement is sought in proceedings in equity or at law.

[signature page follows]

IN WITNESS WHEREOF, I have hereunto set my hand as [_____] of the
Commission as of the date first above written.

Name:

Title:

Exhibit D-1

Exhibit E

FORM OF OFFICER'S CERTIFICATE

PENNSYLVANIA TURNPIKE COMMISSION

This Certificate is furnished pursuant to [Section 7.1(a)] [Section 7.1(b)] of that certain Loan Agreement, dated as of August 4, 2016 (the "Loan Agreement"), by and between PENNSYLVANIA TURNPIKE COMMISSION, an instrumentality of the Commonwealth of Pennsylvania created by the State legislature (the "Commission"), and DVRC PENNSYLVANIA TURNPIKE II LIMITED PARTNERSHIP, a Pennsylvania limited partnership. Capitalized terms used herein, unless otherwise defined herein, shall have the meanings ascribed thereto in the Loan Agreement.

In connection therewith, the undersigned does hereby certify on behalf of the Commission in his capacity as an officer thereof, and not in any personal capacity, as follows:

1. [As of the date hereof]¹ [At the time of and immediately after giving effect to the initial advance of the Tranche [1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16] Loan under the Loan Agreement]², no Event of Default or Potential Event of Default shall have occurred and be continuing;

2. The representations and warranties of the Commission set forth in the Loan Agreement and the Loan Documents to which the Commission is a party are true and correct [in all material respects]³ on and as of the date hereof; and

3. As of the date hereof, Commission has obtained all permits and approvals required at the present stage of the Project, together with all other licenses, permits, approvals, consents and authorizations required by any Governmental Authority at the present stage of the Project (such authorizations shall include, without limitation, any authorization required by any Governmental Authority claiming jurisdiction over building, riparian and/or environmental matters).

[signature page follows]

¹ Use this language if executing on the Effective Date.

² Use this language if executing on the relevant Close-Out Date.

³ Delete this language if executing on the Effective Date.

IN WITNESS WHEREOF, the undersigned has executed this Officer's Certificate as of the date first above written.

Name:

Title: [officer]

Exhibit F

PROJECT COMPLETION SCHEDULE

See attached.

Exhibit G

PROJECT SCHEDULE

Refer to Exhibit F.