



Delaware River  
Joint Toll Bridge  
Commission

Preserving Our Past, Enhancing Our Future

# 2008 TOLL-SUPPORTED BRIDGE INSPECTION REPORT

FEBRUARY 2009



## TOLL BRIDGES

Trenton-Morrisville	Portland-Columbia
New Hope-Lambertville	Delaware Water Gap
Interstate 78	Milford-Montague
Easton-Phillipsburg	

## TOLL-SUPPORTED BRIDGES

Lower Trenton	Uhlerstown-Frenchtown
Calhoun Street	Upper Black Eddy-Milford
Scudder Falls	Riegelsville
Washington Crossing	Northampton Street
New Hope-Lambertville	Riverton-Belvidere
Centre Bridge-Stockton	Portland-Columbia
Lumberville-Raven Rock	

Prepared by

**Tran** Systems

TranSystems | Lichtenstein





February 10, 2009

Mr. Frank G. McCartney  
Executive Director  
Delaware River Joint Toll Bridge Commission  
110 Wood Street  
Morrisville, PA 19067

**RE: DRJTBC Contract No. C-07-02B; Capital Project 0710A  
General Engineering Consultant – 2008 Annual Inspections  
2008 Toll-Supported Bridge Inspections – Annual Inspection Report  
Our Project Number 708080010**

Dear Mr. McCartney:

It is with great pleasure that we are submitting the Consulting Engineer's Seventy-First Annual Inspection Report (2008 Toll Supported Bridge Inspection Bridge Inspections) for the Commission's following facilities:

- A. The Thirteen (13) Toll-Supported (Non-Toll) Bridges
- B. The Seven (7) Toll Bridges
- C. The Thirty-Six (36) approach bridges and roadways serving the above bridges
- D. The Commission's buildings and grounds
- E. The Commission's vehicles and equipment

This Annual Inspection Report summarizes our findings and recommendations based upon the 2008 inspection of the Toll-Supported Facilities. An update of the 2007 inspections of the Toll Facilities was completed to indicate any material changes in the conclusion and recommendation report sections. All facilities are in operating condition.

The Twelfth Annual Maintenance Report which defines activities to be undertaken by the Commission's maintenance staff is published separately.

The report identifies certain ongoing capital projects and their estimated costs for 2009 and 2010. The estimated expenditure for capital projects in 2009 is \$141,190,000. In addition, an estimated expenditure of \$1,402,000 is recommended for new vehicle and equipment purchases in 2009. Therefore, the total amount of ongoing capital projects and vehicle and equipment expenditures in 2009 is estimated to be \$142,592,000. The estimated expenditure for ongoing capital projects and vehicle and equipment expenditures for 2010 is \$165,431,000.





I, William Clark, P.E., do hereby certify to the best of my knowledge, information, and belief that the information contained in the accompanying inspection report has been prepared in accordance with accepted engineering practice. This inspection and report conform to applicable requirements, criteria, guidelines, and standards as stated in the "Bridge Inspectors Reference Manual", FHWA NHI 03-001 – 2002, "Inspection of Fracture Critical Bridge Members" – 1986, as published by FHWA and the AASHTO "Manual for Condition Evaluation of Bridges" – 1994, including all Interims and is true and correct at the time of the inspection. This report has been reviewed using appropriate Quality Assurance guidelines in accordance with generally accepted engineering practice.

It has been a pleasure to serve the Commission. Please contact us if you require any additional information.

Very truly yours,

**TranSystems|Lichtenstein**

A handwritten signature in black ink, appearing to read "William Clark".

William Clark, P.E.  
Project Manager/Associate



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# **DELAWARE RIVER JOINT TOLL BRIDGE COMMISSION**

## **MEMBERS OF THE COMMISSION**

### **NEW JERSEY**

HONORABLE DAVID R. DEGEROLAMO  
**Chairman**

HONORABLE DONALD HART

HONORABLE HARRY ZIKAS, JR.

HONORABLE WILLIAM J. HODAS

VACANT

### **PENNSYLVANIA**

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**Vice Chairman**

HONORABLE MELISSA HELLER

HONORABLE JAMES L. BROUGHAL, ESQ.

HONORABLE BERNARD A. GRIGGS, JR.

HONORABLE JOHN PREVOZNIK, ESQ.  
**Secretary - Treasurer**

# **DELAWARE RIVER JOINT TOLL BRIDGE COMMISSION**

## **PROFESSIONAL ASSOCIATES**

### **CONSULTING ENGINEERS**

TRANSYSTEMS|LICHTENSTEIN  
Paramus, New Jersey

### **LEGAL COUNSEL**

FOX ROTHSCHILD, LLP  
Philadelphia, Pennsylvania

FLORIO, PERRUCCI, STEINHARDT & FADER  
Phillipsburg, New Jersey

### **LABOR COUNSEL**

STRADLEY, RONON, STEVENS & YOUNG  
Philadelphia, Pennsylvania

WOLFF & SAMSON  
West Orange, New Jersey

### **AUDITORS**

MERCADIEN  
Princeton, New Jersey

### **FINANCIAL ADVISOR**

VACANT

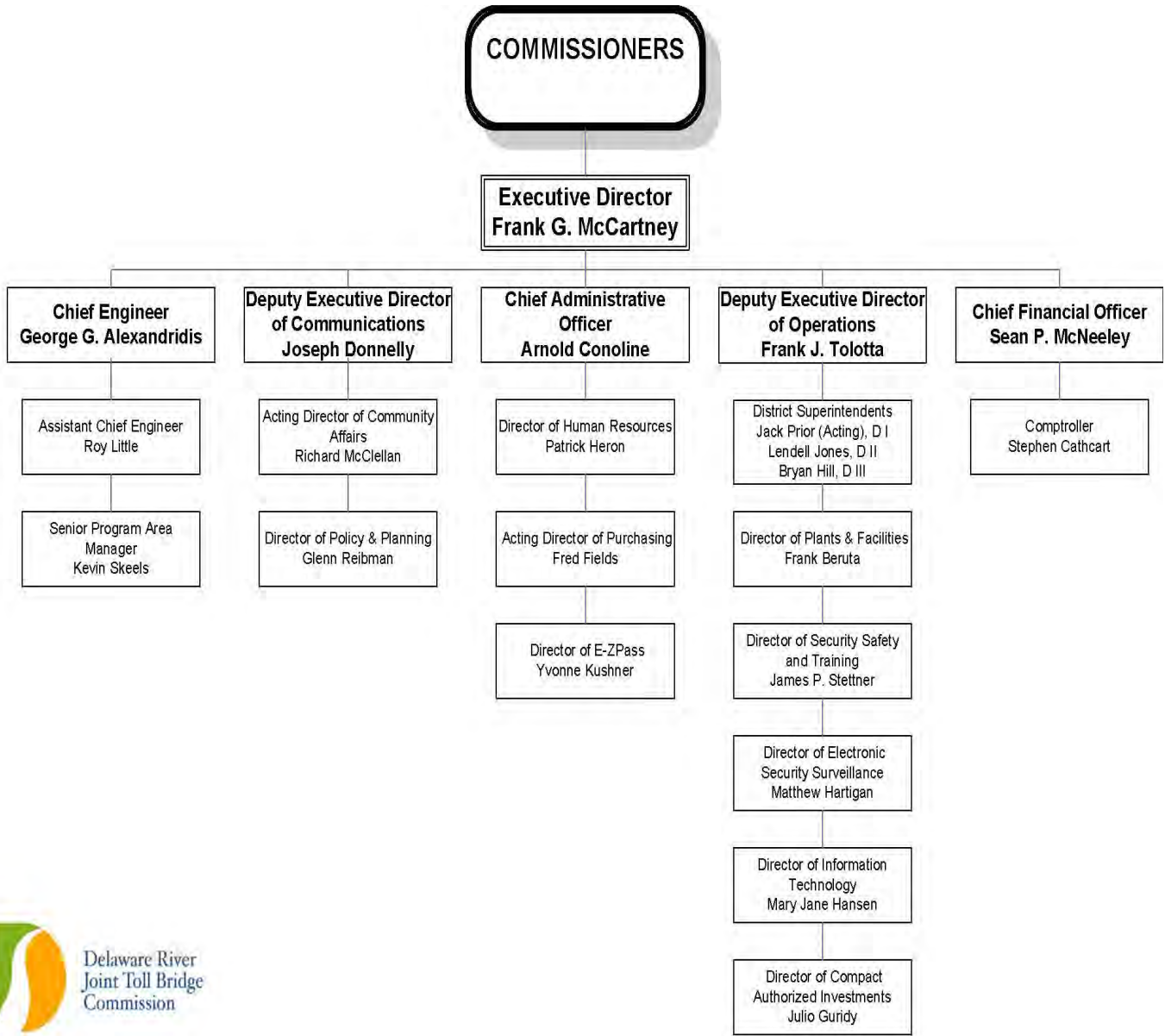
### **COMMUNICATIONS CONSULTANT**

BELLEVUE COMMUNICATIONS  
Philadelphia, Pennsylvania

### **INVESTMENT MANAGEMENT**

COMMERCE CAPITAL MARKETS  
Philadelphia, Pennsylvania

**COMMISSION STAFF**





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## INTRODUCTION

In accordance with Federal Highway Administration (FHWA) regulations, all bridges must be inspected at least once every two (2) years, more often if warranted, due to condition. Under the Commission's 2003 Bond Resolution, all bridges and toll facilities are to be inspected once every two (2) years. The Commission will inspect its Toll-Supported Bridges in even years (2008, 2010, etc.) and the Toll Bridges in odd years (2009, 2011, etc.). The associated facilities and grounds will be inspected in the year the bridge is inspected.

This Seventy-first Annual Inspection Report of bridges and facilities owned and operated by the Delaware River Joint Toll Bridge Commission contains the findings of the 2008 inspections of the Toll-Supported Bridges. This year's inspections consisted of thirteen (13) Toll-Supported Bridges and any accompanying facilities and approach structures. The conclusions and recommendations concerning the Toll Bridges are based on the 2007 inspections. Any changes to the 2007 conclusions or recommendations for the Toll Bridges are indicated by text that is ***bold and italicized***. The inspection findings shown for the Toll Bridges is for informational purposes.

Commission District foremen and maintenance personnel provided our inspection crew with support services and access equipment necessary for performing the inspections. Several maintenance personnel also assisted in providing a valuable 'walk through' of the bridges, prior to beginning the inspections, highlighting the major areas of concern and any previous work done on the structure.

The equipment used to access the majority of the bridges (underdeck) consisted of various length ladders, Commission owned lift trucks, an under-bridge unit called The Bridgemaster and rigging.

The following report highlights the significant findings observed during the inspections, including recommended measures of repairing or improving noted deficiencies, either by Commission maintenance forces or by a future contract. This report, however, does not discuss routine preventative maintenance items regularly performed by Maintenance forces. Any maintenance force level deficiencies which have been identified during the annual inspection can be found in the *Twelfth Annual Maintenance Report*, published under a separate cover, which has been prepared to expedite communication of repair work to the maintenance staff. In general these maintenance tasks include, but are not limited to, the following:

- Removal of accumulated debris from the deck, deck joints, inlets, catch basins, and drainage pipes
- Annual cleaning of structures (bridge flushing)
- Monitoring and repair of lighting and electrical work
- Removal of vegetation from substructures
- Removal of graffiti from bridges and retaining walls
- Patching concrete spalls and asphalt potholes
- Sealing roadway and bridge deck cracks
- Localized cleaning and painting of rusted steel/bearings
- Deck joint rehabilitation
- Guide rail repairs
- Miscellaneous steel repairs



A consistent numbering system was used to identify the bridge spans. Span numbering generally begins at the westernmost location of the bridge and increases to the east. However, a specific numbering system was not utilized for the individual structural members. The locations for individual members (stringers, floorbeams, etc.) are referenced by their relationship to known fixed points, such as bridge fascias and piers.

**Several capital improvement projects were completed beyond the past two years. Among these projects are the following:**

<b>Projects Completed 2001 - 2008 ( &gt; \$25,000)</b>	<b>Program Cost</b>
E-ZPass Implementation	\$ 18,023,146
Centre Bridge - Stockton TSB Rehabilitation	\$ 9,730,805
New Hope - Lambertville TB Plaza & Bridge Rehab	\$ 9,671,373
Riverton - Belvidere TSB Rehabilitation	\$ 9,288,815
New Hope - Lambertville TSB Rehabilitation	\$ 7,700,991
Northampton Street Bridge Rehabilitation	\$ 7,364,066
New Hope - Lambertville TB Administration Building Additions & Renovations	\$ 5,950,610
Uhlerstown-Frenchtown Rehabilitation	\$ 5,779,187
Power Upgrades - All facilities+Struct Wiring+Telephone	\$ 4,760,754
Cleaning & Painting of the LT TSB & Sign Replacement	\$ 4,567,205
Easton - Phillipsburg TB Sign Struct Replacements, Repair & Signage Upgrades	\$ 2,778,496
Easton - Phillipsburg TB Sidewalk Replacement	\$ 1,705,247
Scudder Falls TSB Deck Joint Replacement	\$ 1,446,418
High Priority Structural Steel Repairs at the SFTSB	\$ 968,625
I-78 Expansion Dam Replacement	\$ 867,788
District 3 Roof Replacements	\$ 781,634
Milford - Montague TB Water Supply Upgrade	\$ 754,195
Emergency and Priority Repair Contract (all Bridges) -T/TS 389	\$ 749,233
New Hope - Lambertville TB Terne Roof Replacement	\$ 685,101
Northerly Corridor Congestion Mitigation Study	\$ 647,376
Easton - Phillipsburg TB Replace Roof System on Admin Bldg and Garage	\$ 599,782
I-80 NJ Repaving (NJDOT)	\$ 581,442
RGL End Floorbeam Bearings	\$ 565,563
Southerly Crossing Corridor Study	\$ 544,643
Easton - Phillipsburg Pavement of Bridge Approaches (PennDOT)	\$ 517,090
I-78 Salt Storage Bldg	\$ 485,681
Substructure & Scour Remediation	\$ 482,299
Calhoun Street TSB Interim Repair Contract (Structural Steel Repairs)	\$ 445,913
Washington Crossing TSB Deck Joint Replacement @ Pier 1,2,4 & 5	\$ 407,885
Emergency and Priority Repair Contract (all Bridges) -I-80/NHTSB	\$ 367,116
Portland - Columbia TSB Handicap Accessible Ramp	\$ 305,656
Portland - Columbia TSB Deck Repairs and Drainage Modifications	\$ 290,998
I-80 NJ Service Road Repair & Repaving	\$ 239,885

Replace Overhead Sign (by NJDOT)	\$	230,309
Northampton Street TSB Inspection/Access Cable/Lifeline	\$	222,044
Alternative Analysis Study - Additional Capacity at Calhoun Street	\$	200,343
Furnishings and Equipment for Addition and Renovation	\$	200,000
Wide Area Network (WAN)	\$	192,957
I-78 Roadway Restriping	\$	184,898
Emergency Management Studies (Phase 1 & 2)	\$	184,000
Riegelsville TSB Pier Apron Repair	\$	166,755
NHLTSB Emergency Sidewalk Repair	\$	156,083
I-95/Scudder Falls TSB Bridge Lighting Upgrade	\$	126,131
Elevator Upgrade	\$	106,455
I-95/Scudder Falls TSB Guiderail Replacement (By NJDOT)	\$	103,000
DWG Impact Attenuators Design (see 438, Constr. Cost included in 440)	\$	66,788
Trenton - Morrisville Admin Building Space Plan	\$	56,544
Milford - Montague TB Impact Attenuators Design, see 438 (Constr. cost incl. in 430)	\$	33,394
Portland Columbia TB Impact Attenuators Design, see 438 (Constr. cost incl. in 441)	\$	28,257
<b>Total =</b>	<b>\$</b>	<b>102,312,976</b>

**The capital improvement projects shown below are underway and are either being developed, studied, designed, or constructed:**

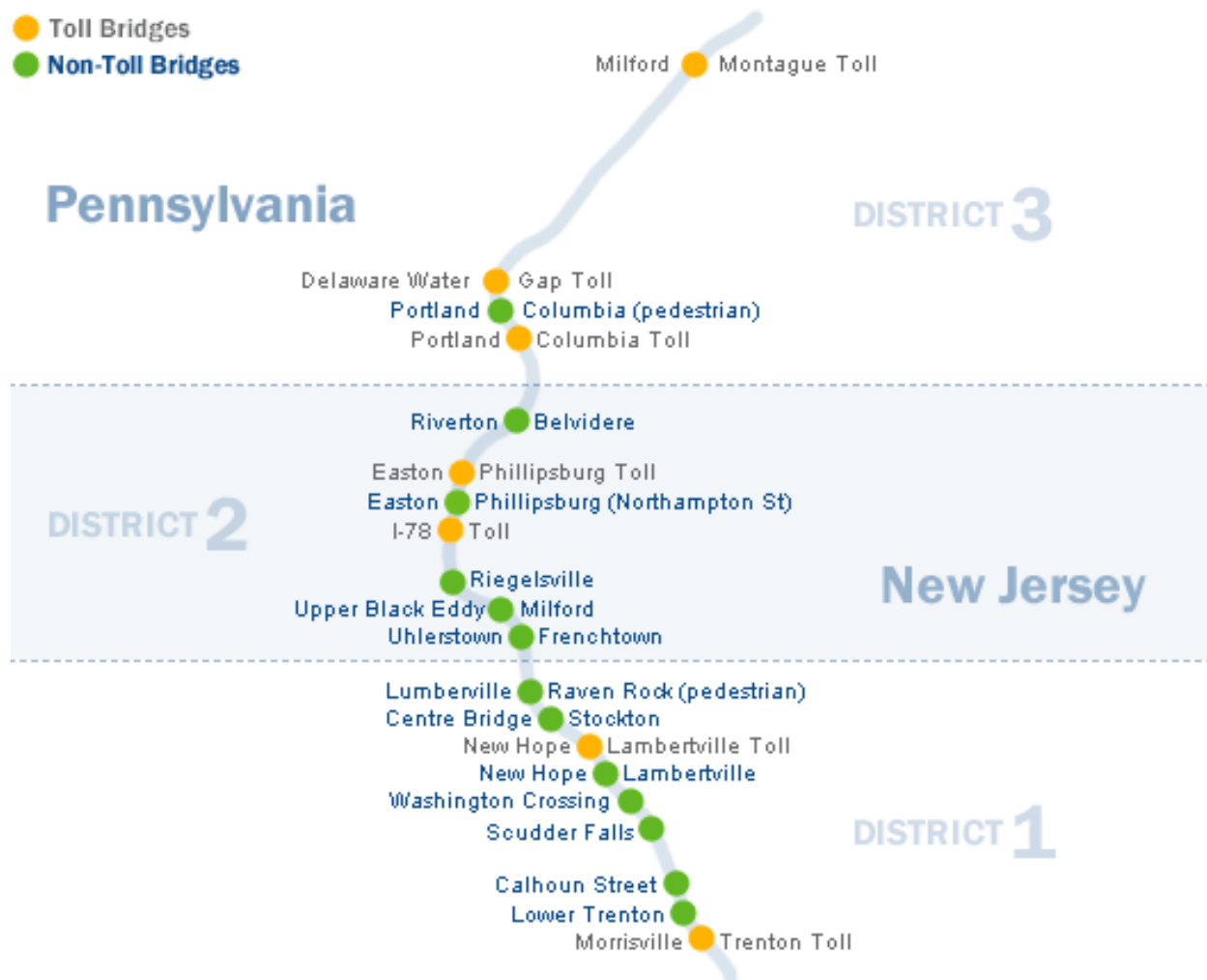
<b>Projects Underway ( &gt; \$25,000)</b>	<b>Program Cost</b>
I-95/Scudder Falls Improvement Project (Design, CM/CI, Construction)	\$ 309,061,539
Trenton - Morrisville TB Rehab + One Aux. NB Lane	\$ 102,383,648
I-78 Roadway Rehabilitation	\$ 57,623,806
I-80/Delaware Water Gap Toll Bridge Open Road Tolling	\$ 39,175,455
Electronic Surveillance Detection System	\$ 22,697,087
Milford - Montague TB Rehabilitation	\$ 19,078,000
I-78 Open Road Tolling (ORT) Lanes	\$ 15,927,690
Calhoun Street TSB Rehabilitation	\$ 13,216,900
Upper Black Eddy - Milford TSB Rehabilitation	\$ 12,570,288
In-Lane System Integrator	\$ 8,041,296
Riegelsville TSB Rehabilitation	\$ 6,954,151
District 1, 2 & 3 Substructure & Scour Remediation	\$ 6,818,997
I-80/Delaware Water Gap Toll Bridge Bearing Remediation and Deck Study	\$ 12,522,440
New Hope - Lambertville TB - Floorbeam Bracket Improvements	\$ 5,671,000
Phase 1 Rehabilitation & Concept Study for the Washington Crossing TSB	\$ 3,429,152
Financial Management System	\$ 2,521,919
Riverton - Belvidere TSB Water Street Repaving & Improvements	\$ 1,302,261
Portland - Columbia TB Locust Street Improvements	\$ 1,098,695
Customer Service Center / Violations Processing Center	\$ 996,725

Trenton - Morrisville TB Buildings Roof Replacement	\$	730,620
Phase 1 DWG Toll Bridge ORT Study	\$	500,000
Trenton - Morrisville TB Elevator Modernization	\$	456,440
NJDEP & PADEP Municipal Stormwater Regulation Compliance at Toll Facilities	\$	286,000
2008 Long Term Traffic Projections	\$	249,999
System Wide IT and Telephone Upgrade	\$	242,000
Portland - Columbia Pedestrian Bridge, PA Approach Vehicle Access	\$	94,154
<b>Total =</b>		<b>\$ 643,650,262</b>

In 2000 the Commission adopted a “fix it right” philosophy for its Capital Program as compared to the previous “fix what’s broken” approach. The “fix it right” approach is based on the premise that whenever a project requires a bridge closure for implementation, that project must be designed so that no additional repair projects requiring a closure will be necessary for a subsequent period of at least 15 years. The estimated costs of the recommended improvements included in this report account for all costs of design, construction, construction management and inspection, and contract administration, are consistent with the Commission’s “fix it right” approach. It is also noted that the general findings and estimated repair costs developed from the 2006 Underwater Inspection Report, have been included in this report.

The format of the cost sheets for the Seventy-first Annual Inspection Report reflects the estimated cost of recommended improvements funded by the General Reserve in 2009 and 2010. Cost sheets for the Toll Bridges have been updated to reflect anticipated costs in 2009 and 2010. In addition the cost sheets provide the total program cost of the projects (Design, CMCI and Construction). The total in each section does not include the cost of completed projects.

The following report will summarize significant findings, recommendations, and associated estimated costs at the end of each section for each structure. Following the main reports are the recommendations for equipment and vehicle inspections and their associated repair/replacement costs. Finally, the Schedule of Insurance is provided towards the end of this report.

**KEY SHEET**





***COMMISSION INITIATIVES  
AND SYSTEM-WIDE PROJECTS***

## *Commission Initiatives and System-Wide Projects*

In addition to addressing the findings of the 2008 annual inspection, the Commission has instituted in its Capital Program a number of "Commission Initiatives and System-Wide Projects". These initiatives increase the safety and security of patrons, increase the Commission's responsiveness to emergencies, identify needed future capacity improvements, and allow for increased control of projects and equipment.

The following is a partial listing of Commission Initiatives and System-Wide Projects that have begun or will begin in the near future:

<b>Project Description</b>	<b>* Program Cost</b>	<b>General Reserve Fund</b>	
		<b>2009</b>	<b>2010</b>
<b><u>Compact Authorized Investments</u></b>	<i>\$40,000,000</i>	\$14,160,000	\$2,069,000
<b><u>Compact Authorized Investment Consultants</u></b>	<i>\$2,000,000</i>	\$400,000	\$253,000
In order to maintain and enhance the bridge infrastructure the Commission has programmed projects to include Compact Authorized Expenditures for host community transportation infrastructure improvements. These expenditures will be geared toward improving throughout at the Commission's facilities. This initiative is currently ongoing.			
<b><u>Capitalized Engineering Department Labor</u></b>	<i>\$10,188,000</i>	\$720,000	\$745,000
This Commission initiative will track the in-house engineering department's efforts on all capital projects. The total programmed amount is shown as well as the expected expenditures in 2009 and 2010.			
<b><u>Capitalized Capital Prgm Mgmt Consultant Expenditures</u></b>	<i>\$22,758,000</i>	\$1,500,000	\$1,551,000
The Capital Program Management Consultant has enabled the Commission to continue to move the Capital Program forward by managing design, construction and construction management contracts associated with the capital program. Additional project managers have been provided under this contract and this cost is being tracked as a capital expense.			

*\* Note: The Program Cost includes the costs from 2001 to 2018*

## Commission Initiatives and System-Wide Projects

Project Description	* Program Cost	General Reserve Fund 2009	2010
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### **Electronic Surveillance Detection System**

\$22,698,000

\$7,747,000

\$0

This project involves the planning, design, installation and maintenance of an electronic surveillance and detection system to provide for the security of the Commission's bridges, roadways, toll plazas, and support facilities. The program will also include upgrades to the Commission's existing radio communications system. A consulting firm will be responsible for program management including the administration, planning, development, and coordination of the implementation of an electronic system designed to deter and detect impacts of threats to Commission assets. The project is currently underway.

### **System Wide IT and Telephone Upgrade**

\$320,000

\$70,000

\$0

This project involves the installation and maintenance of improvements, including switches and routers, to the Commission's Information Technology (IT) and Telephone systems in order to enhance the quality, security and reliability of the facility and inter-facility communications.

### **Stormwater Compliance @ Toll Facilities**

\$286,000

\$138,000

\$0

On April 1, 2004 the Commission was issued the New Jersey Pollutant Discharge Elimination System (NJPDES) Permit Number NJG0153052 Authorization to Discharge (Authorization) as a R12 – Highway Agency Storm water General Permit. This initiative will continue to provide for the compliance program bringing the Commission into conformance with the New Jersey permit. Although the Commonwealth of Pennsylvania has not yet adopted a formal permit process, the Commission will address and comply with the policies set forth by the Commonwealth of Pennsylvania Department of Environmental Protection's (PADEP) Phase II Storm water Program. The project is ongoing.

\* Note: The Program Cost includes the costs from 2001 to 2018

## Commission Initiatives and System-Wide Projects

Project Description	* Program Cost	General Reserve Fund	
		2009	2010
<b><u>In-Lane System Integration DBM (CAPITAL COSTS ONLY)</u></b>			
	\$8,042,000	\$5,052,000	\$1,624,000
<p>The existing toll lanes are comprised of automatic lanes, manual/attended lanes and dedicated Electronic Toll Collection (ETC) lanes. The current toll collection system has no Violation Enforcement System (VES) and all enforcement is performed via manual means, toll gates.</p> <p>As part of the toll collection system expansion, the Commission will implement a three (3) lane Open Road Tolling (ORT) system at the I-78 Toll Bridge and also equip the existing conventional lanes with VES. In addition to the installation of the ORT and VES at the I-78 Toll Bridge, the Commission intends to install VES at the remaining six (6) toll bridges. Included in this project is the design, build and maintenance of the ORT, VES and the maintenance of the existing ETC system.</p>			
<b><u>Customer Service Center / Violation Processing Center (CSC/VPC) DBOM (CAPITAL COSTS ONLY)</u></b>			
	\$997,000	\$893,000	\$0
<p>As part of the Commission's toll collection system expansion, the Commission plans to implement an ORT system and to equip numerous conventional lanes with VES. This project includes the CSC/VPC design, development, installation, integration and testing. This project also includes the replacement of the existing CSC with a new CSC that also provides violation processing capability. The CSC/VPC System shall interface with the existing ETC system, the ORT system and the VES system to obtain transaction data and violation images to post transactions and pursue toll evaders.</p>			
<b><u>Financial Management System</u></b>			
	\$2,522,000	\$1,750,000	\$672,000
<p>The Commission proposes to address the increasing scale of expenditures and complexity of the Capital Improvement Program and improve enterprise resource management by upgrading from the existing accounting system and implementing a comprehensive financial management system. The Commission will assess needs and implement a solution that addresses some or all of the following areas: accounting, general ledger, accounts payable, project accounting, capital program tracking and analysis, budgeting, cash management, and purchasing.</p>			

\* Note: The Program Cost includes the costs from 2001 to 2018

## Commission Initiatives and System-Wide Projects

Project Description	* Program Cost	General Reserve Fund	
		2009	2010
<b><u>District 1, 2 &amp; 3 Substructure &amp; Scour Remediation</u></b> Professional engineering services are required to perform the Substructure & Scour Remediation Repairs for the Commission's bridges. The Consultant will be responsible for preparing a Concept Study, providing preliminary, final and post design services and compiling construction documents. The need for the proposed scour remediation and substructure repair work stems from the findings of the 2005 Underwater Inspection, and the more recent assessment of substructure damage as a result of the flood experienced in 2006.	\$6,819,000	\$1,246,000	\$4,923,000
<b><u>ITS Improvement @ (DWG, E-P, I-78, T-M, S-F) - ROM</u></b> The Commission proposes to implement Intelligent Transportation System (ITS) improvements to monitor real-time traffic conditions and disseminate traveler information at the Trenton-Morrisville, Easton-Phillipsburg, I-78 and Delaware Water Gap Toll Bridge Facility and the I-95 Scudder Falls Toll supported Bridge. Dissemination of information could improve travel time and safety during recurring and non-recurring congestion. ITS efforts could include deploying incident detection/management devices using roadway sensors for vehicle and incident detection. Incident verification/management using CCTV can be accomplished by deploying cameras at each facility. Dissemination of real-time traveler information can be accomplished through kiosks at major traffic generators / rest stops / visitor centers, as well as DMS/HAR installed along the roadway prior to major decision points that will allow motorists to use alternative routes.	\$4,260,000	\$0	\$447,000
<b><u>Fire Protection Systems All Communications / IT Rooms</u></b> The Commission has planned the design and installation of fire protection/suppression systems in the communication equipment rooms at all of the Commission's Administration Buildings.	\$457,000	\$255,000	\$202,000

\* Note: The Program Cost includes the costs from 2001 to 2018



## Commission Initiatives and System-Wide Projects

Project Description	* Program Cost	General Reserve Fund	
		2009	2010
<b><u>Asset Management System (Incl Maint Mgmt Track, BMS)</u></b>			
	\$611,000	\$300,000	\$311,000
<p>The Commission will develop a system to track the Commission's assets and provide the ability to show how, when, and why resources were committed by the Commission. The purpose of a Bridge Management System (BMS) is to provide a centralized location for pertinent information related to each bridge including providing a link between inspection, maintenance, design and construction data. A BMS should satisfy the FHWA requirements for the proper safety inspection and evaluation of highway bridges. Critical components of a BMS include monitoring the existing condition of the Commissions Bridges; maintain current records of structural capacity, anticipated fatigue life, seismic vulnerability, scour vulnerability and the functional assessment of each bridge. A BMS will help to better manage the Capital Program and plan for maintenance and rehabilitation costs each year.</p>			
<b><u>Update General Information Documents</u></b>	\$50,000	\$50,000	\$0
<p>The Commission will update its current General Information Documents. These two (2) documents entitled "General Information on Toll Bridges" and "General Information on Non-Toll Bridges" were last revised in June of 1996 and March of 1995, respectively. The goals of this Commission Initiative are to update the content of documents with current information, update the presentation of documents with graphics and color and produce electronic versions of the documents.</p>			
<b><u>2008 Long Term Traffic Projections</u></b>	\$250,000	\$50,000	\$0
<p>A 10 year investment grade traffic and revenue study, including the effects of deploying ORT at the I-78 and I-80/DWG Toll Bridges.</p>			

\* Note: The Program Cost includes the costs from 2001 to 2018

## Commission Initiatives and System-Wide Projects

Project Description	* Program Cost	General Reserve Fund	
		2009	2010
<b><u>Portland - Columbia TB Sewer Force Main Conn. &amp; Pk Lot Paving (inc. in 441A)</u></b>	\$0	\$0	\$0
This project has been incorporated into Contract 441 Locust Street Improvements.			
<b><u>District 1 Bridge Repairs</u></b>	\$5,613,000	\$300,000	\$2,275,000
Various improvements to be down throughout District 1 that may not be large enough to warrant their own contract or that have been removed from current projects. The Commission should be prepared to package miscellaneous bridge and facility repair items for one (1) district into one (1) construction contract. This will allow the Commission to receive a competitive price completing various minor miscellaneous items. It is envisioned that one (1) contract will be completed each year and each district should be placed on a three (3) year cycle. Expenditures are expected to occur from 2010 to 2017.			
<b><u>District 2 Bridge Repairs</u></b>	\$5,802,000	\$0	\$311,000
Various improvements to be down throughout District 2 that may not be large enough to warrant their own contract or that have been removed from current projects. The Commission should be prepared to package miscellaneous bridge and facility repair items for one (1) district into one (1) construction contract. This will allow the Commission to receive a competitive price completing various minor miscellaneous items. It is envisioned that one (1) contract will be completed each year and each district should be placed on a three (3) year cycle. Expenditures are expected to occur from 2010 to 2017.			

\* Note: The Program Cost includes the costs from 2001 to 2018

## Commission Initiatives and System-Wide Projects

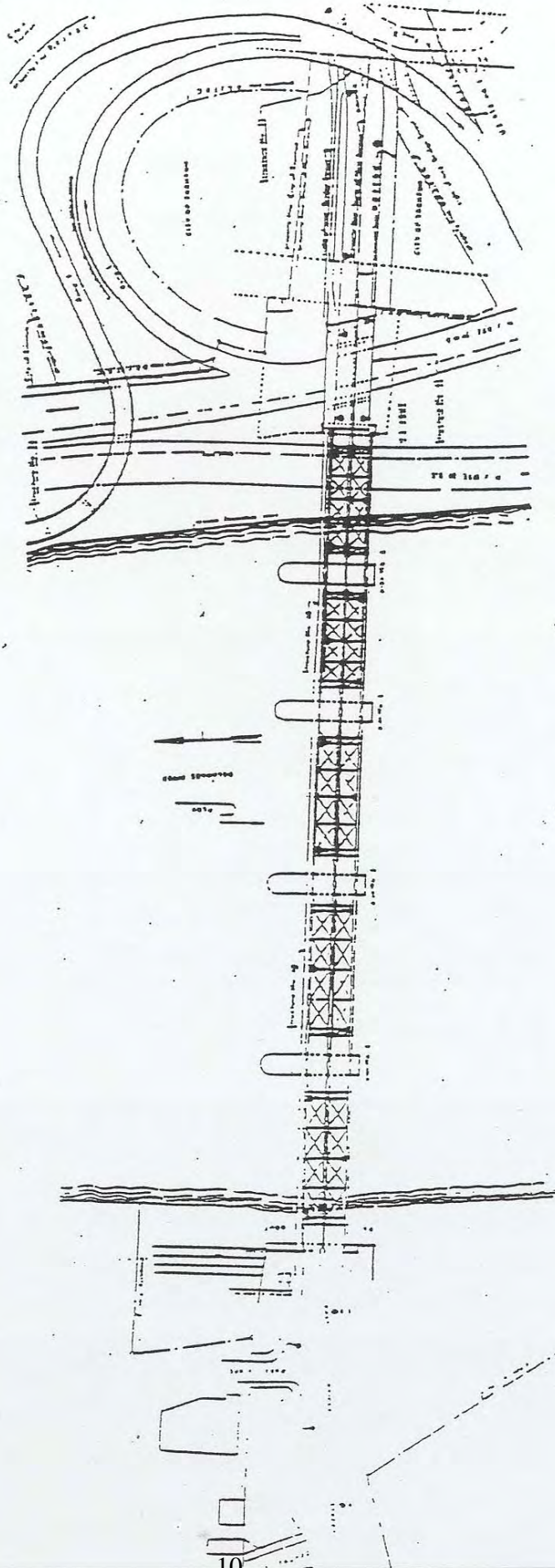
Project Description	* Program Cost	General Reserve Fund	
		2009	2010
<b><u>District 3 Bridge Repairs</u></b>	\$5,905,000	\$0	\$0
Various improvements to be down throughout District 3 that may not be large enough to warrant their own contract or that have been removed from current projects. The Commission should be prepared to package miscellaneous bridge and facility repair items for one (1) district into one (1) construction contract. This will allow the Commission to receive a competitive price completing various minor miscellaneous items. It is envisioned that one (1) contract will be completed each year and each district should be placed on a three (3) year cycle. Expenditures are expected to occur from 2010 to 2017.			
<b><u>District 3 Maintenance Deicing Study and Implementation</u></b>	\$1,189,000	\$75,000	\$1,114,000
The 69th Annual Inspection Report prepared by Schoor DePalma Associates, recommended a study to be performed to determine the District's deicing requirements. The study will include determining salt storage capacity, location, alternatives for deicing materials and additional deicing needs. It is anticipated that this study will be accomplished through a Task Order Assignment.			
	* Program Cost	2009	2010
<b>Total for all of the above Commission Initiatives and System-wide Projects:</b>	<b>\$140,767,000</b>	<b>\$34,706,000</b>	<b>\$16,497,000</b>

\* Note: The Program Cost includes the costs from 2001 to 2018

***LOWER TRENTON***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 40)***

STATE OF NEW JERSEY  
COUNTY OF MERCER  
CITY OF TRENTON

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
BOROUGH OF MORRISVILLE



LOWER TRENTON TOLL SUPPORTED BRIDGE



## **GENERAL**

### **LOWER TRENTON TOLL-SUPPORTED BRIDGE**

(5 span, subdivided warren truss)

The Lower Trenton Toll-Supported Bridge (Structure No. 40), also known as the “Trenton Makes” Bridge, carries Bridge Street traffic from Trenton, New Jersey to Morrisville, Pennsylvania; one of three bridges connecting these two towns.

The structure is a five span subdivided Warren Truss built in 1928, with a total length of approximately 1,022 feet. The roadway consists of two lanes, one lane in each direction separated by a center truss. The curb to curb width of each lane is 19 feet, 4 ½ inches. The substructure, originally built in 1804, widened and raised in 1874, consists of stone masonry.

The structure is currently posted for a 5 ton weight limit restriction and a 25 mph speed limit. The structure is also posted for a 10 foot vertical clearance.

The downriver truss displays the “Trenton Makes the World Takes” sign which is mounted to the truss members; hence, the nickname “The Trenton Makes Bridge”. The original sign was erected in 1935 and replaced in 1981. A new sign was installed in 2005.

The structure was cleaned and painted under Contract No. TS-398A in 2005. The officer's shelter located on the Pennsylvania side of the bridge was replaced in 2006.

The east approach bridge is NJDOT owned and was not part of the inspection.

### **LOWER TRENTON TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the northwest approach corner of the Lower Trenton Toll-Supported Bridge is a Commission owned Pennsylvania officer shelter.

## **SIGNIFICANT FINDINGS**

### **LOWER TRENTON TOLL-SUPPORTED BRIDGE**

(5 span, subdivided warren truss)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall satisfactory condition due to minor deterioration of structural elements.

The deck, approach roadway (Pennsylvania) and superstructure are in good condition.

The substructure is in satisfactory condition. The abutments and piers exhibit numerous areas of cracked and missing mortar. A few piers also exhibit loose and missing stones in isolated areas. Heavy scaling with exposed rebar is present at the Pier 4 concrete apron.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in fair condition due to undermining of the aprons at Piers 2 and 4.

#### LOWER TRENTON TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania officer shelter is in overall good condition. There are two small holes (1" diameter each) in the back siding. The concrete foundation exhibits minor spalls. The light standard adjacent to the shelter was reported to be not functioning. There are minor areas of loose and missing mortar at the retaining wall adjacent to the shelter. The shelter and bridge lighting electrical cabinet door does not properly close.

### CONCLUSIONS

#### LOWER TRENTON TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall satisfactory condition due to minor deterioration of structural elements. The areas of missing and split stone masonry, hollow concrete and spalls throughout the substructure should be repaired with concrete. Riprap should be installed around Piers 1, 3, 4 and the northwest retaining wall. Areas of missing and deteriorated mortar in the stone masonry joints throughout the substructure should be repointed. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

#### LOWER TRENTON TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania officer shelter is in overall good condition. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

## Lower Trenton Toll-Supported Bridge

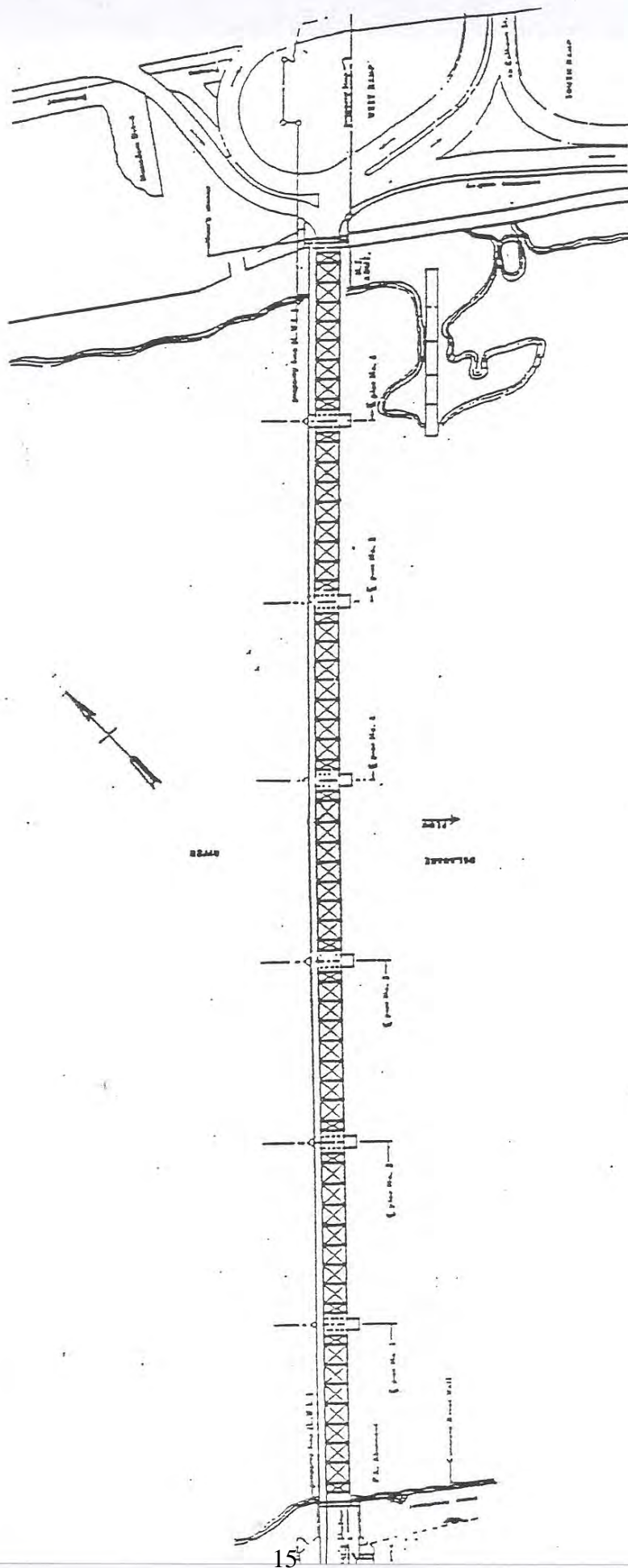
### ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
In 1997 this bridge was rehabilitated. In 2005, cleaning and painting were performed and the "TRENTON MAKES" sign was replaced.				
BRIDGES SUB TOTAL		\$0	\$0	\$0
<b><u>Facilities and Grounds</u></b>				
LTTSB	Miscellaneous Projects (less than \$100k each)	\$176,000	\$10,000	\$11,000
FACILITIES AND GROUNDS SUB TOTAL		\$176,000	\$10,000	\$11,000
TOTAL COST		\$176,000	\$10,000	\$11,000



***CALHOUN STREET***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 60)***

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
BOROUGH OF MORRISVILLE



# CALHOUN STREET TOLL SUPPORTED BRIDGE

## **GENERAL**

### **CALHOUN STREET TOLL-SUPPORTED BRIDGE**

(7 span, wrought iron phoenix truss)

The Calhoun Street Toll-Supported Bridge (Structure No. 60) is one of three bridges constructed to connect Trenton, New Jersey and Morrisville, Pennsylvania. The truss was built in 1884 and the stone masonry substructure was built in 1859.

The structure is a seven span, wrought iron, pin connected Phoenix Pratt Truss with a total length of approximately 1,274 feet. The open steel grid deck provides a curb to curb width of 18 feet, 4 inches. A timber plank sidewalk is supported by the upriver truss on steel cantilever brackets.

The structure is currently posted for a 3 ton weight limit restriction and a 15 mph speed limit. The structure is also posted for an 8 foot vertical clearance.

A structural analysis of the structure was performed under Contract No. C-447A. The primary objective of this study was to understand the structural integrity of the bridge and determine the remaining useful life of the structure and the most economical and constructible structural remediation strategies. Findings are detailed in the "Concept Study Report" dated August 2008. The major work items recommended include; the complete replacement of the bridge roadway floor system and sidewalk, repair of truss members including heat straightening of damaged truss members. Also recommended is the replacement of the truss bearings, cleaning and painting, replacement of the bridge lighting systems and improvements to the approach roadways and sidewalks.

### **CALHOUN STREET TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the southwest and southeast approach corners of the Calhoun Street Toll-Supported Bridge are Commission owned Pennsylvania and New Jersey officer shelters.

## **SIGNIFICANT FINDINGS**

### **CALHOUN STREET TOLL-SUPPORTED BRIDGE**

(7 span, wrought iron phoenix truss)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall poor condition due to the superstructure and substructure.

The deck is in satisfactory condition. Several welds connecting the steel bars in the open steel grid deck have cracked and several bars were noted to be loose. Areas of moderate rust are present throughout the perimeter of the steel grid deck.

The approach roadway is in good condition.

The superstructure is in poor condition. The roadway stringers that are presumed to no longer carry load are deteriorating with extensive material losses noted at the webs, bottom flanges and connections to the floorbeams. In numerous locations, the lower portion of the stringer web is completely perforated and/or the bottom flange exhibits extensive width and thickness losses. Several of the bottom flanges throughout the floorsystem are detached from the stringer webs and are hanging. In 1998 under Contract No. 345 alternating lines of stringers were removed and replaced. It has been previously determined that the bridge can safely carry the posted load of 3 tons with these 1998 stringers carrying the vehicular loading. It has been determined previously that the bridge can safely support the posted vehicular loading of 3 tons. The roadway stringers carrying live load located adjacent to the heavily deteriorated members were found to be in generally satisfactory physical condition. The end floorbeams exhibit web holes and flange losses. The majority of the end floorbeams have been temporarily supported with timber blocking that bears on the pier caps. Numerous diagonal and vertical truss members were damaged by traffic impact prior to the installation of the existing bridge vehicular railings. The resulting damage consists of bent inboard and outboard members and some loose members that do not appear to be in tension. Many of the damaged members have been supplemented with wire cables wrapped around the top and bottom panel points. Supplementary rods have been installed at several locations. Several holes occurring on the north end of the upper chord sway bracing in all spans were found in the Phoenix members.

The substructure is in poor condition. There are widespread areas of large spalls with exposed rebar, delaminations, scaling and efflorescence noted at the vertical and horizontal surfaces of the concrete pier caps. The concrete caps at Piers 4, 5 and 6 appear to exhibit greater deterioration than the other piers. The stone masonry portions of the piers are generally in satisfactory condition with occasional fine cracks in the mortar joints.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in satisfactory condition with minor deterioration to the concrete and exposed pier footings.

#### CALHOUN STREET TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania officer shelter is in overall satisfactory condition. There is a wide crack at the east side of the concrete foundation. There is a missing access cover at the base of the light standard at the east side of the shelter.

The New Jersey officer shelter is in overall good condition. There is a disconnected hanging wire and utility conduit in the basement.

#### CONCLUSIONS

##### CALHOUN STREET TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.



The structure is in overall poor condition due to the superstructure and substructure. A comprehensive rehabilitation should be performed on the structure. The rehabilitation should include cleaning and painting the above deck superstructure, floorsystem and sidewalk replacement, bearing replacement, steel and substructure repairs. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has selected an engineering consultant to perform the above recommended rehabilitation under Contract No. C-447B and it is anticipated that the project will begin in 2009.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

#### CALHOUN STREET TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania officer shelter is in overall satisfactory condition. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The New Jersey officer shelter is in overall good condition. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

# Calhoun Street Toll-Supported Bridge

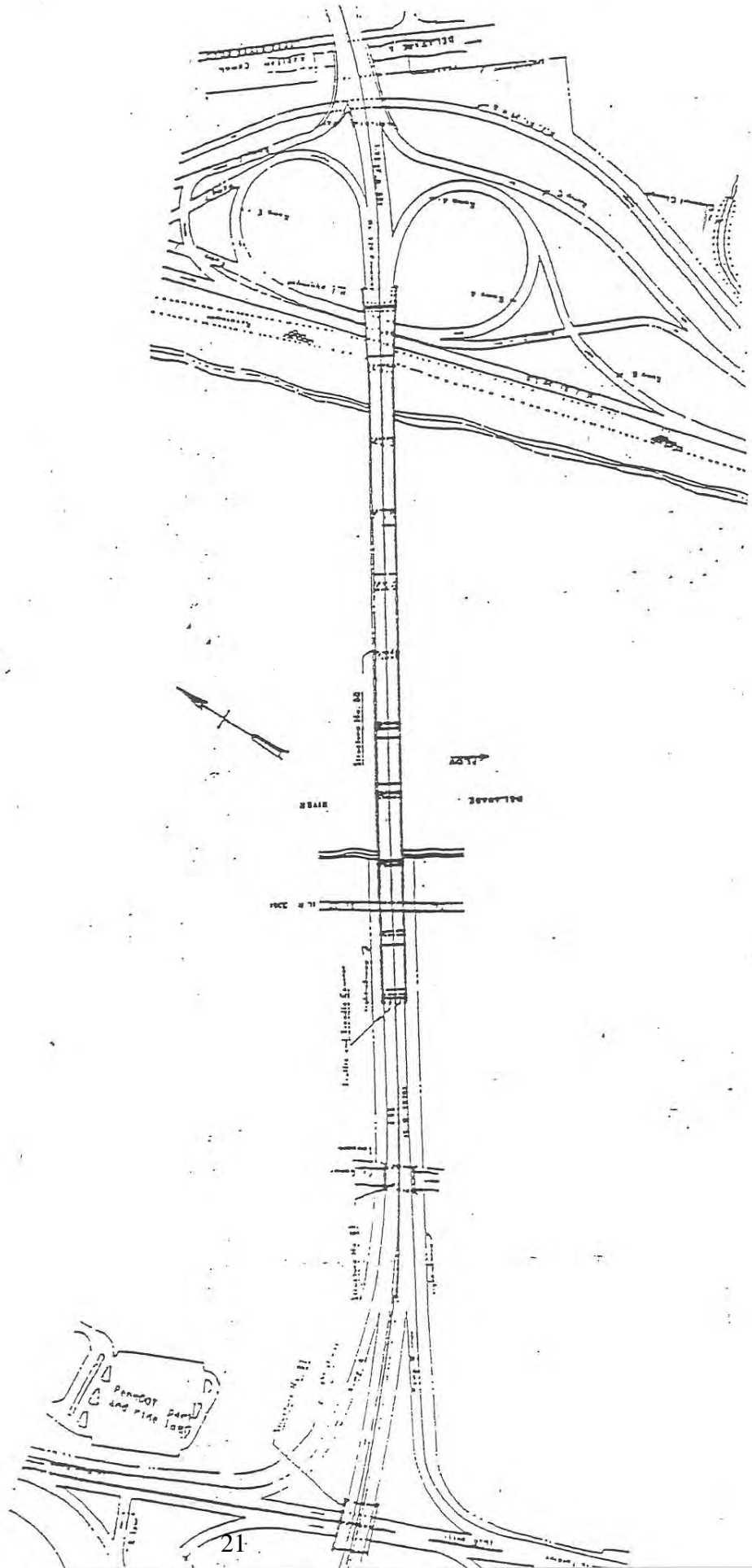
## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
447	CS TSB Rehabilitation Contract (Design / Construction)	\$13,217,000	\$578,000	\$12,596,000
	<b>BRIDGES SUB TOTAL</b>	<b>\$13,217,000</b>	<b>\$578,000</b>	<b>\$12,596,000</b>
<b><u>Facilities and Grounds</u></b>				
CSTSB	Miscellaneous Projects (less than \$100k each)	\$151,000	\$10,000	\$11,000
	<b>FACILITIES AND GROUNDS SUB TOTAL</b>	<b>\$151,000</b>	<b>\$10,000</b>	<b>\$11,000</b>
	<b>TOTAL COST</b>	<b>\$13,368,000</b>	<b>\$588,000</b>	<b>\$12,607,000</b>

***SCUDDER FALLS***  
***TOLL-SUPPORTED BRIDGES***  
***(Structure Nos. 80, 81 & 82)***

STATE OF NEW JERSEY  
COUNTY OF MERCER  
TOWNSHIP OF EWING

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
TOWNSHIP OF LOWER MAKEFIELD



SCUDDER FALLS TOLL SUPPORTED BRIDGE

## **GENERAL**

### **SCUDDER FALLS TOLL-SUPPORTED BRIDGE**

(10 span, riveted steel plate girder)

The Scudder Falls Toll-Supported Bridge (Structure No. 80) carries Interstate 95 over the Delaware River from Lower Makefield Township, Pennsylvania to Ewing Township, New Jersey.

The main river bridge is a ten span, riveted plate girder structure consisting of two span continuous deck girders and alternating cantilever spans. Built by the Commission in 1959 and opened to traffic on June 22, 1961, the bridge carries two dual roadways each having a curb to curb width of 27 feet with a concrete median barrier, and flanked by an upstream and downstream safety walk. The total length of the bridge is 1,740 feet. The substructure units are reinforced concrete, with stone facing on the piers.

The posted speed limit on the bridge approach roadways is 55 mph. The Commission's jurisdiction at this crossing also includes two Pennsylvania approach overpasses, one at the Pennsylvania Canal and the other at Taylorsville Road.

The Commission is moving forward with plans to improve the Scudder Falls Bridge based on conclusions contained in its Southerly Crossings Corridor Study. That study found that congestion and safety problems on the bridge were a result of its narrow configuration, the proximity of adjoining interchanges, and ramps merging onto I-95. The bridge carries more than 57,500 vehicles per day and operates at the worst level of service (LOS F) during peak rush hours. Over the next 25 years, traffic volumes are expected to increase an additional 35 percent. In cooperation with the New Jersey and Pennsylvania Departments of Transportation, the Commission is completing a preliminary engineering plan and an environmental assessment to select a preferred alternative that will improve safety and relieve anticipated congestion on the bridge and an approximate 4 mile stretch of I-95, from Route 332 in Bucks County, Pennsylvania to Bear Tavern Road in Mercer County, New Jersey. The assessment includes environmental studies, alternatives to improve safety and congestion, and preliminary engineering design. The Commission has communicated with the public regarding this project via public meetings, newsletters, and a website to reflect the current status.

### **PENNSYLVANIA CANAL OVERPASS**

(1 span, simply supported, steel multi-stringer)

The Pennsylvania Canal Overpass (Structure No. 81) carries Interstate Route 95 over the Pennsylvania Canal in Lower Makefield Township, Pennsylvania. The structure is an approach bridge to the main Scudder Falls Toll-Supported Bridge that crosses the Delaware River.

The Pennsylvania Canal Overpass is a simple span, concrete deck, multi-stringer structure founded on reinforced concrete abutments on footings, which are supported by steel bearing piles. Opened to traffic on June 22, 1961, the bridge carries two dual roadways each with a curb to curb width of 27 feet with a concrete median barrier, and flanked by an upriver and downriver safety walk. The total span length of the bridge is 61 feet, 4 inches.

### **TAYLORSVILLE ROAD OVERPASS**

(3 span, steel multi-stringer)

Taylorsville Road Overpass (Structure No. 82) carries Interstate 95 over Taylorsville Road in Lower Makefield Township, Pennsylvania and provides access to the main Scudder Falls Toll-Supported Bridge over the Delaware River. The bridge was built in 1959 and opened to traffic on June 22, 1961.

The structure is a three span, concrete deck, multi-stringer structure founded on reinforced concrete abutments and piers on footings that are supported by cast in place concrete piles. The bridge carries two dual roadways each with a curb to curb width of 27 feet with a concrete median barrier. The bridge is flanked by a north and south safety walk. The total span length of the bridge is 134 feet.

### **SIGNIFICANT FINDINGS**

#### **SCUDDER FALLS TOLL-SUPPORTED BRIDGE**

(10 span, riveted steel plate girder)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall satisfactory condition due to minor deterioration of structural elements.

The deck is in good condition.

The approach roadways and associated ramps are in satisfactory condition. Deteriorated asphalt was noted in numerous locations more prevalent adjacent to the concrete headers. The approach roadways and ramps exhibit several small potholes and spalls.

The superstructure is in satisfactory condition. Several stringers exhibit horizontal cracks in the web. The 1st floorbeam to the east of Pier 5 exhibits a crack in the south tie plate. Sheared anchor bolts are present in the north tie plate at the 2<sup>nd</sup> floorbeam in Span 9.

The substructure is in good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in good condition with only minor spalls and minor exposure of the Pier 3 footing.

#### **PENNSYLVANIA CANAL OVERPASS**

(1 span, simply supported, steel multi-stringer)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall satisfactory condition due to minor deterioration of structural elements.

The deck is in good condition.

The approach roadway is in good condition.

The superstructure is in satisfactory condition. Heavy laminar rust is typical at the stringer ends and bearings with minor material losses.

The substructure is in good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in good condition with only fine random cracks throughout.

#### **TAYLORSVILLE ROAD OVERPASS**

(3 span, steel multi-stringer)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall fair condition due to minor deterioration of primary structural elements.

The deck is in good condition.

The approach roadway is in good condition.

The superstructure is in fair condition. Stringers exhibit moderate to heavy laminar rust at the bottom flange and lower web. Stringer 14 exhibits moderate impact damage over the right northbound lane. Heavy laminar rust is typical at the bearings with heavy debris accumulation surrounding the bearing seats.

The substructure is in satisfactory condition. The east abutment backwall exhibits a spall with exposed rebar at the north end. Medium vertical cracks are typical throughout. Several previous concrete patches have failed at Pier 2.

#### **CONCLUSIONS**

##### **SCUDDER FALLS TOLL-SUPPORTED BRIDGE**

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall satisfactory condition due to minor deterioration of structural elements. Under Contract 393, Interstate 95/Scudder Falls Toll-Supported Bridge Improvement

Project, the main river bridge and its approach roadways and bridges are expected to be replaced by 2013. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

#### PENNSYLVANIA CANAL OVERPASS

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall satisfactory condition due to minor deterioration of structural elements. Under Contract 393, Interstate 95/Scudder Falls Toll-Supported Bridge Improvement Project, the main river bridge and its approach roadways and bridges are expected to be replaced by 2013. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

#### TAYLORSVILLE ROAD OVERPASS

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall fair condition due to minor deterioration of primary structural elements. Under Contract 393, Interstate 95/Scudder Falls Toll-Supported Bridge Improvement Project, the main river bridge and its approach roadways and bridges are expected to be replaced by 2013. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.



# Scudder Falls Toll-Supported Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
393A	I-95 / SF Improvement Project (Design, CM/CI, Construction)	\$308,660,000	\$17,139,000	\$79,879,000
<b>BRIDGES SUB TOTAL</b>		<b>\$308,660,000</b>	<b>\$17,139,000</b>	<b>\$79,879,000</b>
<b><u>Facilities and Grounds</u></b>				
SFTSB	Miscellaneous Projects (less than \$100k each)	\$176,000	\$10,000	\$11,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$176,000</b>	<b>\$10,000</b>	<b>\$11,000</b>
<b>TOTAL COST</b>		<b>\$308,836,000</b>	<b>\$17,149,000</b>	<b>\$79,890,000</b>



***WASHINGTON CROSSING***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 100)***

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
TOWNSHIP OF UPPER MAKEFIELD  
WASHINGTON CROSSING



## **GENERAL**

### **WASHINGTON CROSSING TOLL-SUPPORTED BRIDGE**

(6 span, double warren truss)

The Washington Crossing Toll-Supported Bridge (Structure No. 100) connects Mercer County Route 546 in Hopewell Township, New Jersey with PA Route 532 (George Washington Memorial Boulevard) in the Township of Taylorsville in Upper Makefield, Pennsylvania.

The structure is a six span double Warren Truss, with a total length of approximately 877 feet. The steel superstructure was built in 1904. The substructures, composed of rubble stone faced masonry, are from the original construction in 1831. The open steel grid deck provides a curb to curb width of 15 feet. The downstream side of the truss supports a cantilevered, wood planked sidewalk.

The structure is currently posted for a 3 ton weight limit restriction and a 15 mph speed limit. The structure is also posted for an 8 foot vertical clearance.

The deck joint support system was repaired under Contract No. TS-428A in 2005. This Contract consisted of repairing and replacing riser beams. High priority substructure repairs were also completed under this contract during 2005 due to post flood damage.

### **WASHINGTON CROSSING TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the southeast approach corner of the Washington Crossing Toll-Supported Bridge is a Commission owned New Jersey officer shelter.

## **SIGNIFICANT FINDINGS**

### **WASHINGTON CROSSING TOLL-SUPPORTED BRIDGE**

(6 span, double warren truss)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall poor condition due to the superstructure and substructure.

The deck is in good condition.

The approach roadway is in satisfactory condition. The pavement adjacent to the west abutment deck joint exhibits moderate surface wear and spalled areas. Medium transverse cracks are present throughout the roadways.

The superstructure is in poor condition. The lower chord exhibits impact damage at the north truss from panel points L2 to L4 in Span 3, L1 to L4 in Span 5 and L1 to L3 in Span 6. The south tie rod at Span 2, the south tie rod at Span 3, the north tie rod at Span 4, the north tie rod at Span 5 and the north tie rod at Span 6 have been removed. The west abutment truss bearing

appears over expanded and is in contact with the backwall. Light to moderate rust with minor section losses is typical throughout the floorsystem.

The substructure is in poor condition. The Pennsylvania abutment backwall is rotating causing the existing tooth deck joint to close completely and the concrete transition parapets to deteriorate at the base. Several wide diagonal cracks were noted at the north and south ends of the west abutment backwall from this movement and rotation.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were noted to be in satisfactory condition due to minor deterioration and undermining of the pier aprons and loss of pointing and cracks in the west abutment and wingwalls.

#### WASHINGTON CROSSING TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The New Jersey officer shelter is in overall good condition.

### CONCLUSIONS

#### WASHINGTON CROSSING TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall poor condition due to the superstructure and substructure. An in-depth inspection and rating contract leading to a comprehensive rehabilitation is recommended. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has selected an engineering consultant to perform Phase 1 of the above recommended rehabilitation under Contract C-442A. Phase 2 is programmed to be started in 2012.

#### WASHINGTON CROSSING TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The New Jersey officer shelter is in overall good condition.

# Washington Crossing Toll-Supported Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
442A	Phase 1 Rehabilitation & Concept Study for the Washington Crossing TSB	\$3,430,000	\$1,300,000	\$1,967,000
442B	Washington Crossing TSB Phase 2 Rehabilitation (2012)	\$9,402,000	\$0	\$0
<b>BRIDGES SUB TOTAL</b>		<b>\$12,832,000</b>	<b>\$1,300,000</b>	<b>\$1,967,000</b>
<b><u>Facilities and Grounds</u></b>				
WCTSB	Miscellaneous Projects (less than \$100k each)	\$127,000	\$10,000	\$11,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$127,000</b>	<b>\$10,000</b>	<b>\$11,000</b>
<b>TOTAL COST</b>		<b>\$12,959,000</b>	<b>\$1,310,000</b>	<b>\$1,978,000</b>

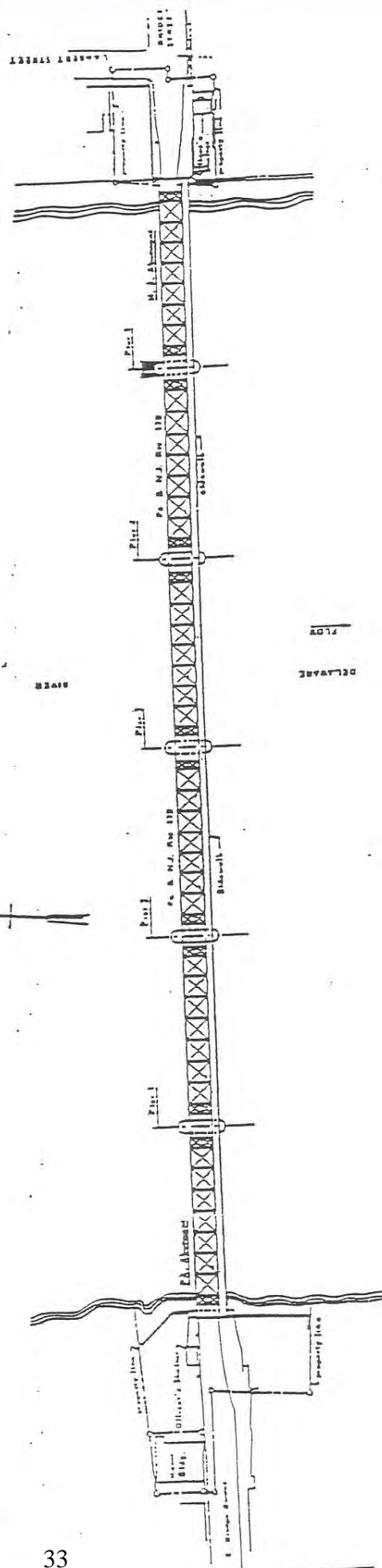




***NEW HOPE-LAMBERTVILLE***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 120)***

STATE OF NEW JERSEY  
COUNTY OF HUNTERDON  
CITY OF LAMBERTVILLE

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF DUCKS  
BOROUGH OF NEW HOPE



NEW HOPE - LAMBERTVILLE TOLL SUPPORTED BRIDGE

## **GENERAL**

### **NEW HOPE-LAMBERTVILLE TOLL-SUPPORTED BRIDGE**

(6 span, pin connected pratt truss)

The New Hope-Lambertville Toll-Supported Bridge (Structure No. 120) connects Bridge Street in New Hope, Pennsylvania to Lambertville, New Jersey.

The structure, constructed in 1904, is a six span pin connected Pratt Truss with a total length of approximately 1,046 feet. The open steel grid deck provides a curb to curb width of 20 feet 7 inches. A timber plank sidewalk, installed in 1982, is supported on the downstream side by steel cantilever brackets. Abutments, wingwalls and piers are ashlar faced masonry; the piers are stone filled. All substructure units are from original construction in 1814.

The structure is currently posted for a 4 ton weight limit restriction and a 15 mph speed limit.

The bridge was rehabilitated under Contract No. TS-370A in 2004.

### **NEW HOPE-LAMBERTVILLE TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the northwest and southeast approach corners of the New Hope-Lambertville Toll-Supported Bridge are Commission owned Pennsylvania and New Jersey officer shelters. At the Pennsylvania side of the bridge is a Commission owned former firehouse that primarily functions as a storage facility for the Commission.

## **SIGNIFICANT FINDINGS**

### **NEW HOPE-LAMBERTVILLE TOLL-SUPPORTED BRIDGE**

(6 span, pin connected pratt truss)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall satisfactory condition due to minor deterioration of structural elements.

The deck and approach roadway are in good condition.

The superstructure is in satisfactory condition. Several north truss lower chord members in Span 5 exhibit impact damage. Many truss member's exhibit minor section losses that have been arrested by paint.

The substructure is in good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in satisfactory condition, exhibiting minor deterioration including undermining of the pier aprons.

#### NEW HOPE-LAMBERTVILLE TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania and New Jersey officer shelters are in overall good condition.

The former firehouse is in overall good condition. A detailed inspection of the former firehouse was not performed due to the facility being used for the storage of items from the New Hope – Lambertville Toll Bridge Administration Building Renovations and Addition, which was undergoing construction during the time of the inspection.

#### CONCLUSIONS

##### NEW HOPE-LAMBERTVILLE TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall satisfactory condition due to minor deterioration of structural elements. Riprap should be installed around the concrete aprons at all piers. Sections of the damaged concrete apron should be repaired. Cracks in the concrete aprons should be sealed. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

Priority repairs to Pier 2 were completed in 2007 under Contract No. DB-0457B

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

#### NEW HOPE-LAMBERTVILLE TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania and New Jersey officer shelters are in overall good condition.

The former firehouse is in overall good condition.

# New Hope-Lambertville Toll-Supported Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

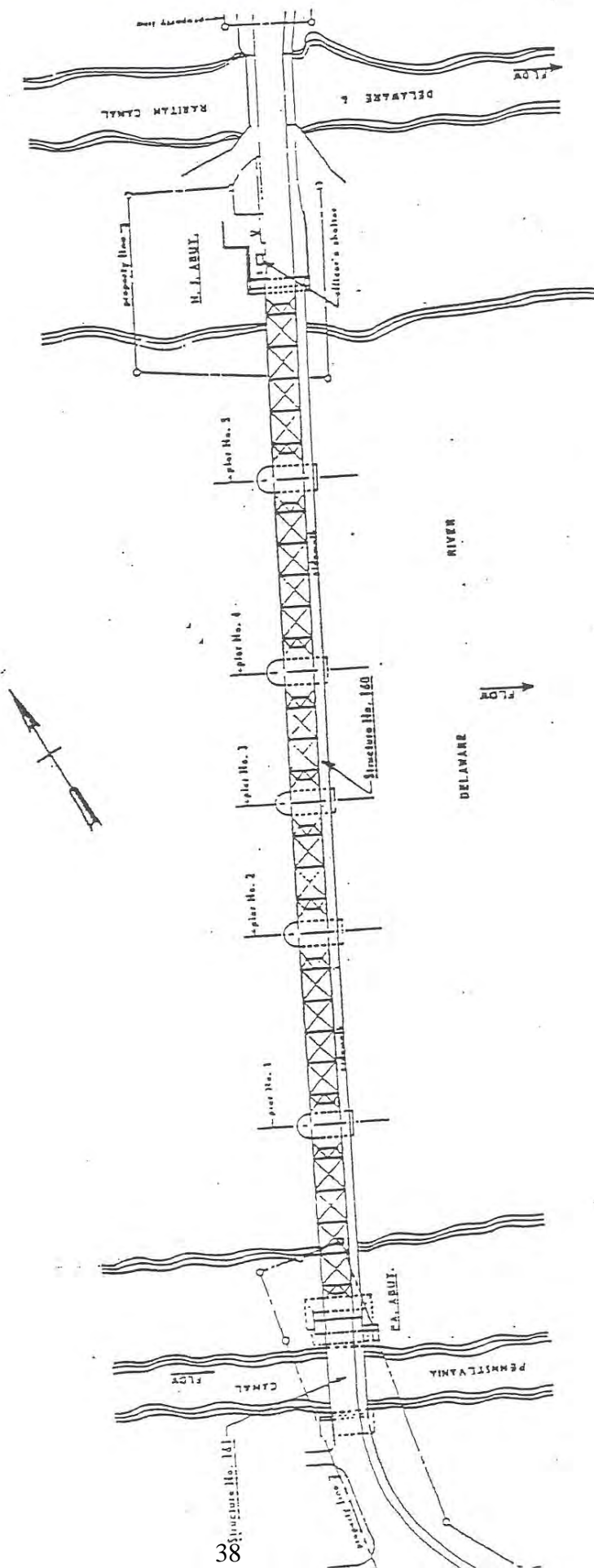
Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
The bridge was rehabilitated in 2004				
<b>BRIDGES SUB TOTAL</b>		<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b><u>Facilities and Grounds</u></b>				
NHLTSB	Miscellaneous Projects (less than \$100k each)	\$137,000	\$20,000	\$11,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$137,000</b>	<b>\$20,000</b>	<b>\$11,000</b>
<b>TOTAL COST</b>		<b>\$137,000</b>	<b>\$20,000</b>	<b>\$11,000</b>



***CENTRE BRIDGE-STOCKTON***  
***TOLL-SUPPORTED BRIDGES***  
***(Structure Nos. 160 & 161)***

STATE OF NEW JERSEY  
COUNTY OF HUNTERDON  
TOWNSHIP OF DELAWARE  
BOROUGH OF STOCKTON

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUICKS  
TOWNSHIP OF SOLEBURY  
CENTRE BRIDGE



CENTRE BRIDGE - STOCKTON TOLL SUPPORTED BRIDGE



## **GENERAL**

### **CENTRE BRIDGE-STOCKTON TOLL-SUPPORTED BRIDGE**

(6 span, riveted steel warren truss)

The Centre Bridge-Stockton Toll-Supported Bridge (Structure No. 160) connects PA Route 32 in Solebury Township, Pennsylvania to NJ Route 29 in Stockton, New Jersey.

The bridge, opened to traffic in 1927, is a six span, riveted steel Warren Truss structure, with a total length of approximately 825 feet. The open steel grid deck, provides a curb to curb width of 19 feet, 11 ½ inches. In addition, a six foot timber plank sidewalk, is supported on the downriver truss on steel cantilever brackets. The piers and abutments originally constructed in 1814 from random ashlar masonry are stone filled and rest upon timber crib foundations. In 1926 portions of the piers were encased with reinforced concrete.

The structure is currently posted for a 5 ton weight limit restriction and a 25 mph speed limit. The structure is also posted for a 12 feet vertical clearance.

A comprehensive rehabilitation of the Centre Bridge-Stockton Toll-Supported Bridge was completed in 2007 under Contract No. TS-429A.

### **CENTRE BRIDGE-STOCKTON TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the northeast approach corner of the Centre Bridge-Stockton Toll-Supported Bridge is a Commission owned New Jersey officer shelter.

### **PENNSYLVANIA CANAL OVERPASS**

(1 span, prestressed concrete adjacent box beams)

The Pennsylvania Canal Overpass (Structure No. 161) carries traffic over the Pennsylvania Canal in Solebury Township, PA. The structure is an approach bridge to the main Centre Bridge-Stockton Toll-Supported Bridge that crosses the Delaware River.

The Pennsylvania Canal Overpass is a simple span, prestressed concrete adjacent box beam structure. The curb to curb width is 19 feet, 11 ½ inches and the span length is 63 feet.

A comprehensive rehabilitation of the Pennsylvania Canal Overpass was completed in 2007 under Contract TS-429A.

## **SIGNIFICANT FINDINGS**

### **CENTRE BRIDGE-STOCKTON TOLL-SUPPORTED BRIDGE**

(6 span, riveted steel warren truss)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall good condition.

The deck, approach roadway, superstructure and substructure are in good condition.

An underwater inspection was performed in 2006 under Contract NO. C-467D. The substructure units below the waterline were found to be in fair condition due breastwall deterioration but this condition was repaired under Contract No. TS-429A.

#### CENTRE BRIDGE-STOCKTON TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The New Jersey officer shelter is in overall good condition. There is a small spall at the rear of the retaining wall.

#### PENNSYLVANIA CANAL OVERPASS

(1 span, prestressed concrete adjacent box beams)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall good condition.

The deck, approach roadway and substructure are in good condition.

The superstructure is in very good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in good condition with only minor spalls and cracks.

#### CONCLUSIONS

##### CENTRE BRIDGE-STOCKTON TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall good condition. Riprap should be installed at the east face of Pier 1, the entire perimeter of Piers 2 and 3 and at the north and east faces of Piers 4 and 5. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

CENTRE BRIDGE-STOCKTON TOLL-SUPPORTED BRIDGE FACILITIES AND  
GROUNDS

The New Jersey officer shelter is in overall good condition. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

PENNSYLVANIA CANAL OVERPASS

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall good condition. Unsound concrete should be removed from the north and south ends of the east and west abutment breastwalls and patch. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

# Centre Bridge-Stockton Toll-Supported Bridge

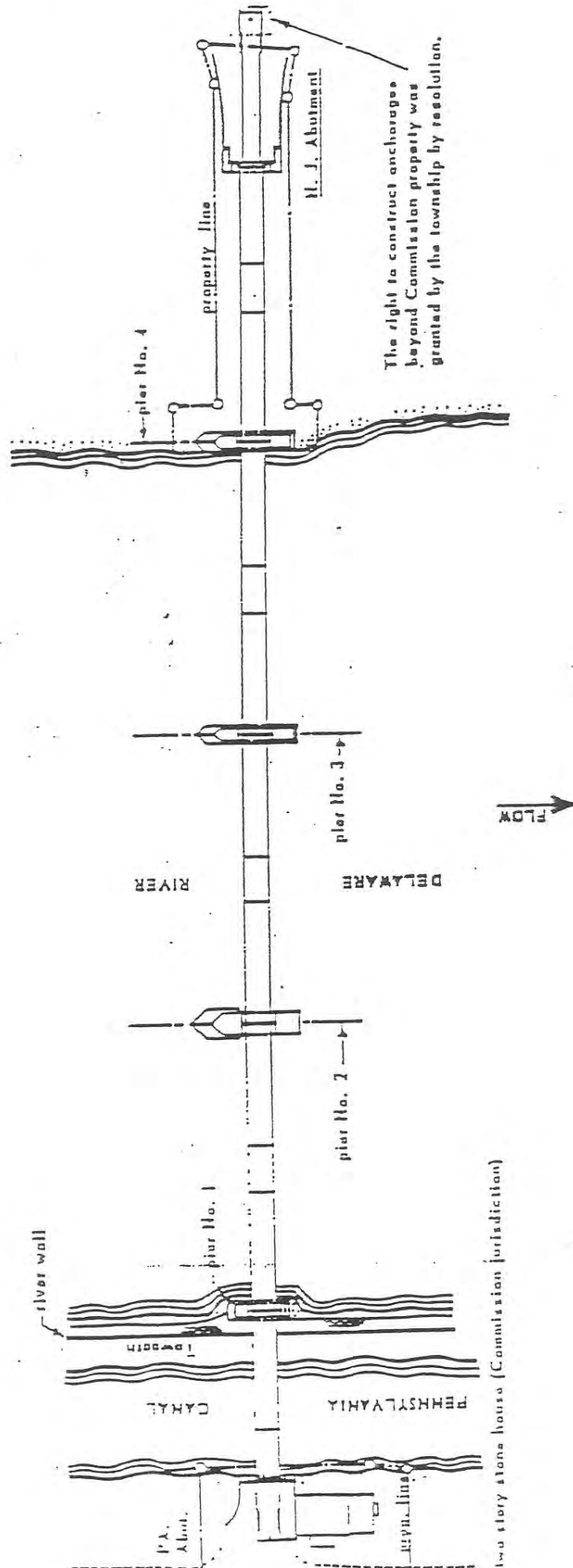
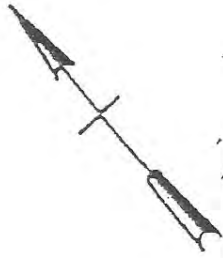
## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
The bridge was recently rehabilitated in 2007				
<b>BRIDGES SUB TOTAL</b>		<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b><u>Facilities and Grounds</u></b>				
CBSTSB	Miscellaneous Projects (less than \$100k each)	\$64,000	\$5,000	\$6,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$64,000</b>	<b>\$5,000</b>	<b>\$6,000</b>
<b>TOTAL COST</b>		<b>\$64,000</b>	<b>\$5,000</b>	<b>\$6,000</b>

***LUMBERVILLE-RAVEN ROCK***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 180)***

STATE OF NEW JERSEY  
COUNTY OF HUNTERDON  
TOWNSHIP OF DELAWARE  
RAVEN ROCK

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
TOWNSHIP OF SOLEBURY  
LUMBERVILLE



# LUMBERVILLE - RAVEN ROCK TOLL SUPPORTED BRIDGE

## **GENERAL**

### **LUMBERVILLE-RAVEN ROCK TOLL-SUPPORTED BRIDGE**

(5 span, suspension)

The Lumberville-Raven Rock Toll-Supported Bridge (Structure No. 180) connects Solebury Township (Lumberville) in Pennsylvania with Delaware Township (Raven Rock) in New Jersey.

This pedestrian bridge is a five span suspension bridge with straight backstays and a precast waffle style concrete slab held together by longitudinal post tensioning web cables. The floor system is strengthened by cable trusses along each suspension cable. The width of the walkway is 7 feet, 7 inches and the structure length is approximately 688 feet.

The bridge was closed to vehicular traffic in February of 1944. In 1947, the superstructure was re-built on the original 1856 masonry substructure. A major rehabilitation contract was completed in 1993 that included a new deck slab, pier and abutment repointing, approach sidewalks and bridge lighting. The entire bridge was last painted in 1980 by Maintenance forces and the towers were again painted in 1990.

### **LUMBERVILLE-RAVEN ROCK TOLL-SUPPORTED BRIDGE FACILITY AND GROUNDS**

At the southwest corner of the Lumberville-Raven Rock Toll-Supported Bridge is a Commission owned house. Adjacent to this Commission owned house and property is a retaining wall along the Pennsylvania Canal.

## **SIGNIFICANT FINDINGS**

### **LUMBERVILLE-RAVEN ROCK TOLL-SUPPORTED BRIDGE**

(5 span, suspension)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall poor condition due to the substructure.

The deck and approach walkways are in good condition.

The superstructure is in fair condition. Both fascia girders exhibit areas of light to moderate pack rust at the bottom flange more prevalent adjacent to the bridge scuppers due to water infiltration. Struts exhibit light to moderate pack rust at the fascia ends. Pitting with areas of up to 50% material loss is present at the pipe cross bracing. The suspension towers exhibit areas of light to severe pack rust at the tower base.

The substructure is in poor condition. The concrete aprons at Piers 1 and 4 exhibit random wide cracks. The concrete aprons at Piers 2 and 3 are missing several sections exposing the timber cribbing pier foundations. The remaining sections exhibit wide cracks and undermining.

An underwater inspection was performed in 2006 under Contract No.C-467D. The substructure units below the waterline were found to be in poor condition due to undermining and deteriorated concrete aprons at Piers 2 and 3.

#### LUMBERVILLE-RAVEN ROCK TOLL-SUPPORTED BRIDGE FACILITY AND GROUNDS

The house is in overall poor condition and exhibits exterior and interior paint peeling, deteriorated wood porch framing, failed window sealers, exposed wires and a leaning oil tank foundation.

The southwest retaining wall along the Pennsylvania Canal is partially collapsed and leaning. The stones have become loose throughout.

### CONCLUSIONS

#### LUMBERVILLE-RAVEN ROCK TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall poor condition due to the substructure. The bridge should be cleaned and painted. Riprap should be installed at Piers 1, 2, 3 and the west abutment. The deteriorated portions of the concrete aprons at Piers 2 and 3 should be reconstructed. The wide crack in the concrete apron at Pier 1 should be sealed. Voids in the stone masonry at Piers 1 and 4 should be filled. Missing and deteriorated pointing throughout the substructure units should be replaced and the cracks in the stone masonry should be sealed. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

#### LUMBERVILLE-RAVEN ROCK TOLL-SUPPORTED BRIDGE FACILITY AND GROUNDS

The house and retaining wall are in overall poor condition. The Commission should consider undertaking a study to repair and upgrade the condition of the house and the adjacent stone retaining wall.



# Lumberville-Raven Rock Pedestrian Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

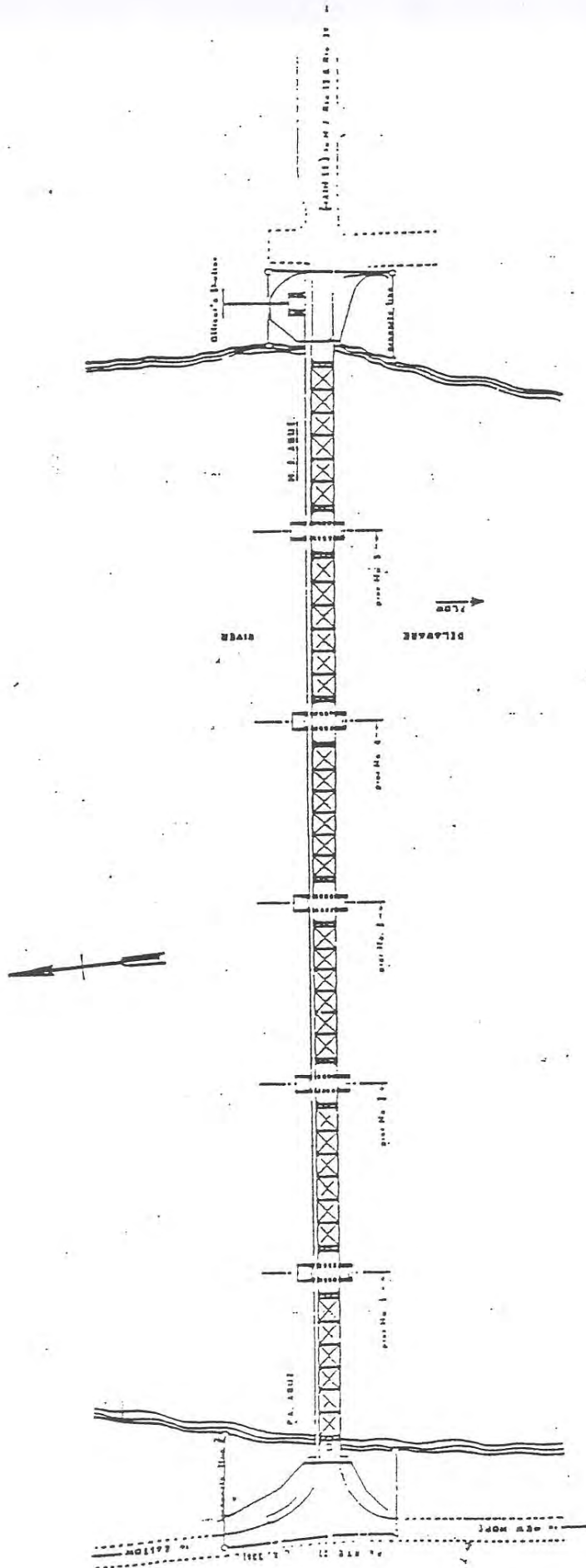
Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
443	L-RR TSB Rehabilitation	\$2,532,000	\$208,000	\$1,021,000
525	L-RR TSB Retaining Wall Reconstruction & Bridge House Rehabilitation	\$1,239,000	\$238,000	\$806,000
<b>BRIDGES SUB TOTAL</b>		<b>\$3,771,000</b>	<b>\$446,000</b>	<b>\$1,827,000</b>
<b><u>Facilities and Grounds</u></b>				
LRRTSB	Miscellaneous Projects (less than \$100k each)	\$127,000	\$10,000	\$11,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$127,000</b>	<b>\$10,000</b>	<b>\$11,000</b>
<b>TOTAL COST</b>		<b>\$3,898,000</b>	<b>\$456,000</b>	<b>\$1,838,000</b>



***UHLERSTOWN-FRENCHTOWN***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 220)***

STATE OF NEW JERSEY  
COUNTY OF HUNTERDON  
BOROUGH OF FRENCHTOWN

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
TOWNSHIP OF THIRDCUM  
UHLESTOWN



UHLERSTOWN - FRENCHTOWN TOLL SUPPORTED BRIDGE

## **GENERAL**

### **UHLERSTOWN-FRENCHTOWN TOLL-SUPPORTED BRIDGE**

(6 span, riveted steel warren truss)

The Uhlerstown-Frenchtown Toll-Supported Bridge (Structure No. 220) carries Bridge Street traffic from Uhlerstown, Tinicum Township in Pennsylvania to Frenchtown, New Jersey.

The bridge, which rests on the original masonry substructure built in 1843, consists of a six span riveted steel Warren Truss structure, built in 1931. The open steel grid deck, added in 1949, provides a curb to curb width of 16 feet 6 inches. The structure is approximately 950 feet in length. A concrete filled steel grid sidewalk is supported by the upstream truss on steel cantilever brackets.

The structure is currently posted for a 15 ton weight limit restriction and a 15 mph speed limit. The structure is also posted for a 12 foot 6 inch vertical clearance.

The structure was rehabilitated in 2001 under Contract No. TS-363.

### **UHLERSTOWN-FRENCHTOWN TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the northeast approach corner of the Uhlerstown-Frenchtown Toll-Supported Bridge is a Commission owned New Jersey officer shelter.

## **SIGNIFICANT FINDINGS**

### **UHLERSTOWN-FRENCHTOWN TOLL-SUPPORTED BRIDGE**

(6 span, riveted steel warren truss)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall good condition.

The deck, approach roadway, superstructure and substructure are in good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in satisfactory condition exhibiting minor deterioration including undermining of the aprons.

### **UHLERSTOWN-FRENCHTOWN TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

The New Jersey officer shelter is in overall good condition. There are cracks and spalls in the retaining wall coating adjacent to the shelter.

## **CONCLUSIONS**

### **UHLERTOWN-FRENCHTOWN TOLL-SUPPORTED BRIDGE**

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall good condition. The undermining of the concrete aprons and the west abutment should be repaired. The cracks in the concrete aprons and pier caps should be repaired and the stone masonry joints in the east abutment and Pier 1 should be repaired. Riprap at the west abutment protection wall should be installed. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

### **UHLERTOWN-FRENCHTOWN TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

The New Jersey officer shelter is in overall good condition. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

# Uhlerstown-Frenchtown Toll-Supported Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
The bridge was rehabilitated in 2001.				
<b>BRIDGES SUB TOTAL</b>		<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b><u>Facilities and Grounds</u></b>				
<b>UFTSB</b>	Miscellaneous Projects (less than \$100k each)	\$380,000	\$30,000	\$32,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$380,000</b>	<b>\$30,000</b>	<b>\$32,000</b>
<b>TOTAL COST</b>		<b>\$380,000</b>	<b>\$30,000</b>	<b>\$32,000</b>

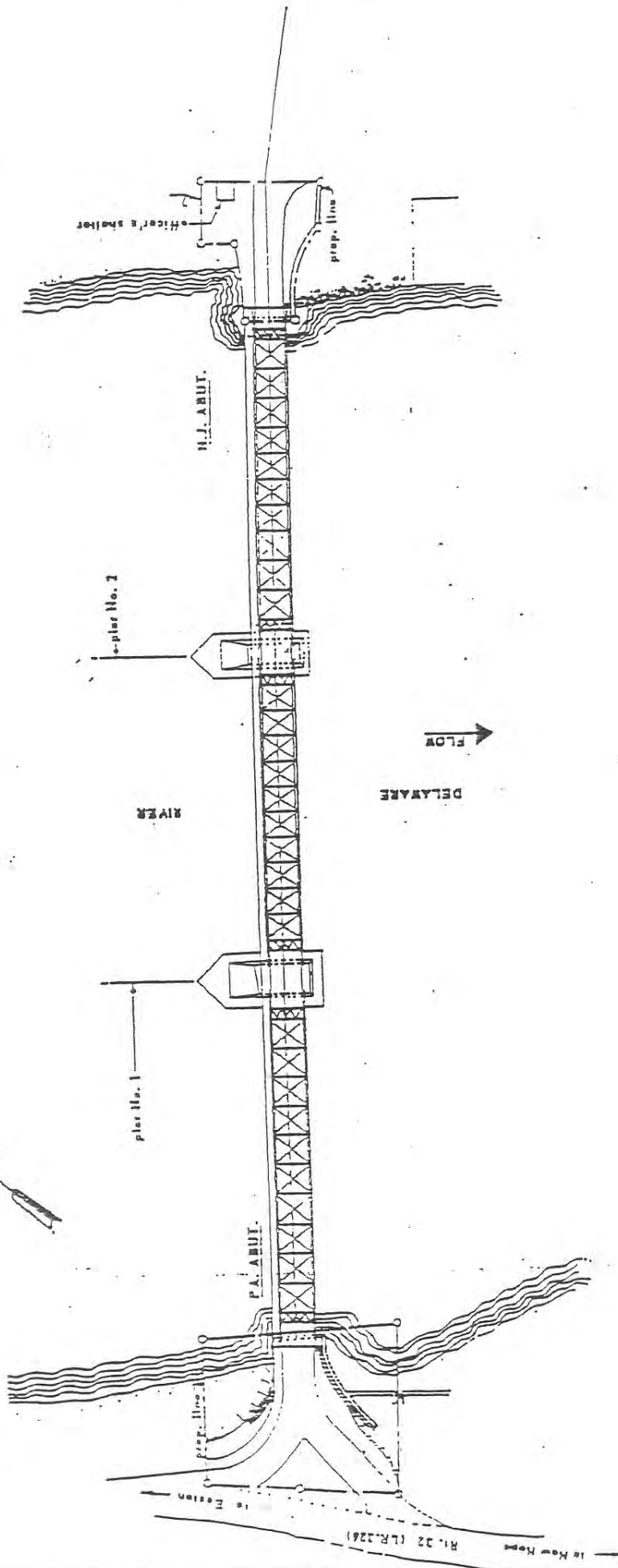




***UPPER BLACK EDDY-MILFORD***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 240)***

STATE OF NEW JERSEY  
COUNTY OF HUNTERDON  
BOROUGH OF MILFORD

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
TOWNSHIP OF BRIDGETON  
UPPER BLACK EDDY



UPPER BLACK EDDY - MILFORD TOLL SUPPORTED BRIDGE

## **GENERAL**

### **UPPER BLACK EDDY-MILFORD TOLL-SUPPORTED BRIDGE**

(3 span, warren truss)

The Upper Black Eddy-Milford Toll-Supported Bridge (Structure No. 240) extends over the Delaware River and connects PA Route 32 and Hunterdon County Route 619 via Bridge Street from Upper Black Eddy, Bridgeton Township, Pennsylvania to Milford Borough, New Jersey.

The bridge, constructed in 1933, is a three span Warren Truss structure, with a total length of approximately 700 feet. The deck consists of concrete filled steel inverted “T’s” and provides a curb to curb width of 20 feet. Both abutments, recapped with reinforced concrete following flood damage, were originally built in 1842 with rubble faced masonry. The piers, built in 1842, are stone filled having also been recapped with reinforced concrete.

The structure is posted for a 15 mph speed limit.

In 1996 a new galvanized plate sidewalk was added to the bridge and is supported on the upriver truss on steel cantilever brackets. Substructure units were repointed in 1998 under Contract 347.

### **UPPER BLACK EDDY-MILFORD TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the northeast approach corner of the Upper Black Eddy-Milford Toll-Supported Bridge is a Commission owned New Jersey officer shelter.

## **SIGNIFICANT FINDINGS**

### **UPPER BLACK EDDY-MILFORD TOLL-SUPPORTED BRIDGE**

(3 span, warren truss)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall fair condition due to minor deterioration of primary structural elements.

The deck is in satisfactory condition. The top of deck exhibits light to moderate wearing throughout all spans. The underside of the steel grid deck typically exhibits light to moderate rust with moderate to heavy rust below the deck joints and fascia stringers. The steel curbs exhibit light to moderate rust with heavy rust noted at the curb support.

The approach roadway is in satisfactory condition. The New Jersey approach roadway exhibits medium transverse and longitudinal cracks throughout. Steel plating is exposed adjacent to the east abutment deck joint due to deteriorated asphalt.

The superstructure is in satisfactory condition. The steel floorbeams and stringers typically exhibit light to moderate rust and peeling paint with areas of minor section losses. The top flange of the roadway stringers typically exhibit severe rust due to water leakage through the steel grid deck. Severe rust and significant pack rust build up is typical at the fascia stringer bearings. Random areas of severe rust with minor section losses exist on several truss members; however no significant material loss was noted. The paint is in overall moderate to poor condition throughout the structure. The truss rocker bearings are in minor expansion with moderate to severe rust throughout.

The substructure is in fair condition. The east and west abutments exhibit cracked and missing mortar and a few missing stones. The two piers exhibit random areas of missing mortar. Severe scaling and hollow sounding areas is typical at the concrete pier caps.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in satisfactory condition due to minor deterioration to the concrete at the abutments.

#### UPPER BLACK EDDY-MILFORD TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The New Jersey officer shelter is in overall satisfactory condition. The slope protection at the north side of the shelter is eroding. There are cracks in the shelter sidewalk. The roof trim exhibits minor peeling of paint.

#### CONCLUSIONS

##### UPPER BLACK EDDY-MILFORD TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall fair condition due to minor deterioration of primary structural elements. An in-depth inspection leading to a comprehensive rehabilitation including substructure and scour evaluation is scheduled under Contract No. C-444A. An engineering consultant has been selected for Contract No. C-444A and it is anticipated that this project will begin in 2009. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

##### UPPER BLACK EDDY-MILFORD TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The New Jersey officer shelter is in overall satisfactory condition. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

# Upper Black Eddy-Milford Toll-Supported Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

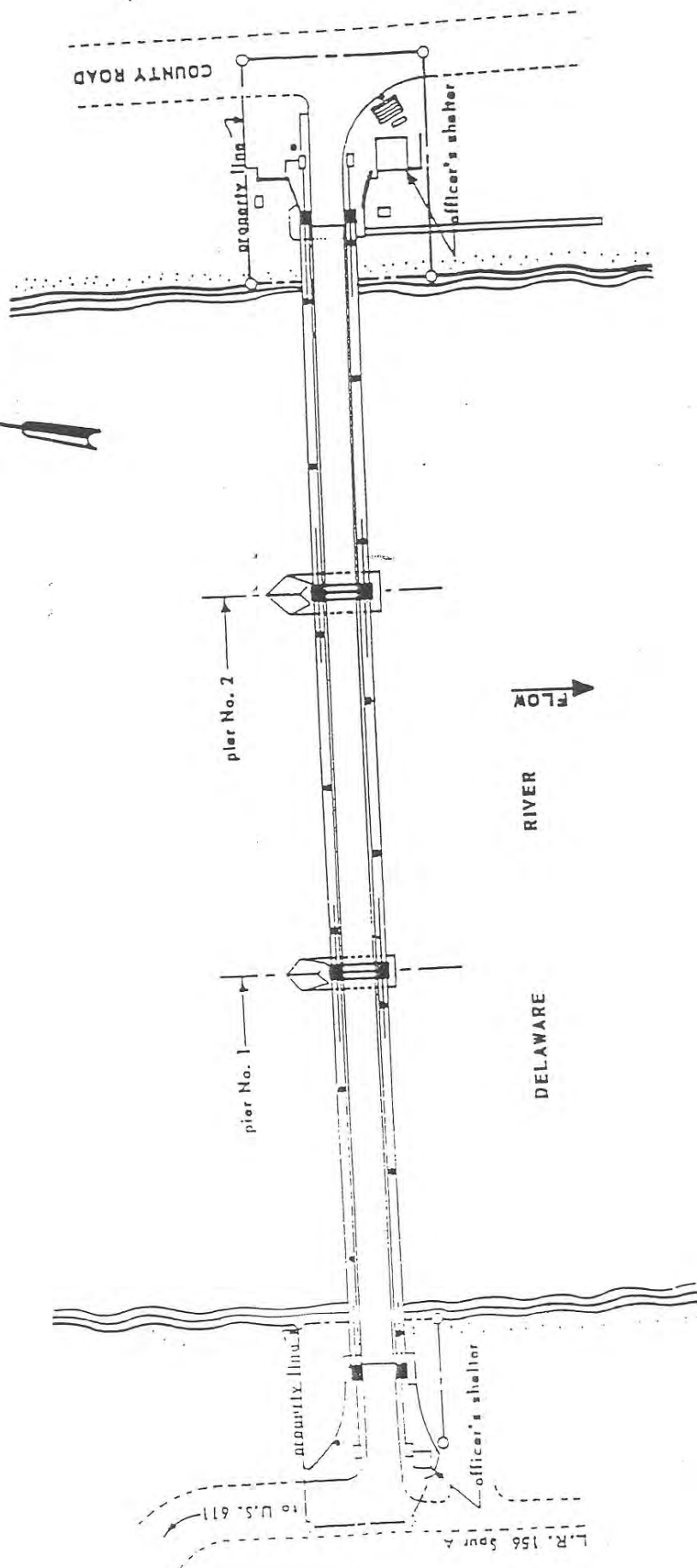
Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
444	Upper Black Eddy - Milford TSB Rehabilitation	\$12,571,000	\$752,000	\$10,182,000
	<b>BRIDGES SUB TOTAL</b>	<b>\$12,571,000</b>	<b>\$752,000</b>	<b>\$10,182,000</b>
<b><u>Facilities and Grounds</u></b>				
UBEMTSB	Miscellaneous Projects (less than \$100k each)	\$190,000	\$15,000	\$16,000
	<b>FACILITIES AND GROUNDS SUB TOTAL</b>	<b>\$190,000</b>	<b>\$15,000</b>	<b>\$16,000</b>
	<b>TOTAL COST</b>	<b>\$12,761,000</b>	<b>\$767,000</b>	<b>\$10,198,000</b>



***RIEGELSVILLE***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 260)***

STATE OF NEW JERSEY  
COUNTY OF WARREN  
BOROUGH OF RIEGELSVILLE

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
BOROUGH OF RIEGELSVILLE



RIEGELSVILLE TOLL SUPPORTED BRIDGE



## **GENERAL**

### **RIEGELSVILLE TOLL-SUPPORTED BRIDGE**

(3 span, suspension)

The Riegelsville Toll-Supported Bridge (Structure No. 260) connects Durham Township in Pennsylvania with Pohatcong Township in New Jersey.

The bridge, constructed in 1904, is a three span Cable Suspension bridge with straight backstays and a total length of approximately 577 feet. The open steel grid deck, supported by a king post floorbeam system, provides a curb to curb width of 15 feet 11 inches. A timber plank sidewalk rests on floorbeam cantilevers on both fascias. The sidewalk railing is actually a double Warren Truss, assisting in strengthening the bridge roadway. The substructure, originally built in 1835, was raised and built up in 1904.

The structure is currently posted for a 2 ½ ton weight limit restriction and a 15 mph speed limit.

Under Contract TS-391, the Riegelsville Toll-Supported Bridge has undergone the first step in a full rehabilitation, as part of the Commission's 10 year capital program addressing improvements to many of the bridges. Work consisted of strengthening towers on the river piers, replacement of hanger blocks connecting vertical hangers to the floorbeams, repair of floorbeam bearings at each end of the floorbeams of the three spans, concrete repair on pier two and concrete crack repairs at the anchorages. The bridge was last painted by contract in 1985. A cleaning and pointing contract was completed for the substructure in 1998. Contract TS-461A repaired the damaged concrete aprons and additional damage from the Flood of June 2006.

### **RIEGELSVILLE TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the southwest and southeast approach corners of the Riegelsville Toll-Supported Bridge are Commission owned Pennsylvania and New Jersey officer shelters.

## **SIGNIFICANT FINDINGS**

### **RIEGELSVILLE TOLL-SUPPORTED BRIDGE**

(3 span, suspension)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall poor condition due to the condition of the superstructure.

The deck is in good condition.

The approach roadway is in poor condition. The east approach roadway exhibits areas of moderate surface wear with uneven concrete typical near the curb lines. Subsequent to the inspection this roadway was repaved under a Compact Authorized Investment project.

The superstructure is in poor condition. The steel floorbeams exhibit severe corrosion. Approximately 40 percent of all floorbeams exhibit numerous web holes (up to full height of web). Heavy to severe rust with minor material losses is typical at the bottom flange of the floorbeams. Severe corrosion and material losses is typical at the cross bracing members. U-bolt connecting cables typically exhibit minor material losses.

The substructure is in satisfactory condition. The abutments exhibit several wide random cracks. Heavy scaling is typical at the east abutment and the Pier 1 and 2 bridge seats.

An underwater inspection was performed in 2006 by under Contract No. C-467D. The substructure units below the waterline were found to be in fair condition due to deteriorated concrete at the abutments and pier aprons.

#### RIEGELSVILLE TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania officer shelter is in overall good condition.

The New Jersey officer shelter is in overall fair to poor condition. The window frames exhibit cracks and paint peeling. The shelter floor exhibits areas of rot and decay and temporary timber supports have been installed to support the floor system.

### CONCLUSIONS

#### RIEGELSVILLE TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall poor condition due to the superstructure. This bridge is currently scheduled for a comprehensive rehabilitation with design starting in 2009 under Contract No. 445. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

#### RIEGELSVILLE TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania officer shelter is in overall good condition.

The New Jersey officer shelter is in overall fair to poor condition. The Commission should consider undertaking a study to determine whether the shelter can be rehabilitated or should be replaced. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

# *Riegelsville Toll-Supported Bridge*

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

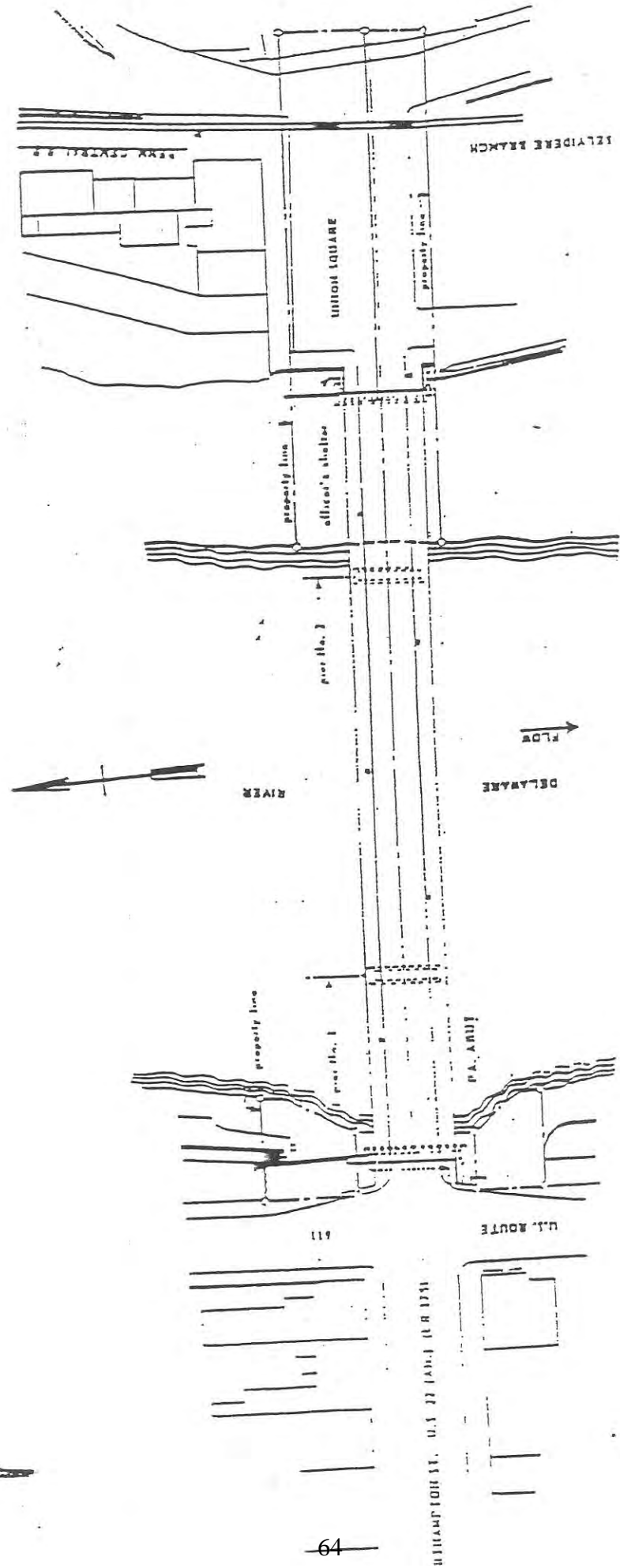
Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
445	RGL Rehabilitation	\$6,955,000	\$742,000	\$6,213,000
<b>BRIDGES SUB TOTAL</b>		<b>\$6,955,000</b>	<b>\$742,000</b>	<b>\$6,213,000</b>
<b><u>Facilities and Grounds</u></b>				
RTSB	Miscellaneous Projects (less than \$100k each)	\$127,000	\$10,000	\$11,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$127,000</b>	<b>\$10,000</b>	<b>\$11,000</b>
<b>TOTAL COST</b>		<b>\$7,082,000</b>	<b>\$752,000</b>	<b>\$6,224,000</b>



***NORTHAMPTON STREET***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 280)***

STATE OF NEW JERSEY  
COUNTY OF WARREN  
TOWN OF PHILLIPSBURG

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF NORTHAMPTON  
CITY OF EASTON



# NORTHAMPTON STREET TOLL SUPPORTED BRIDGE

## **GENERAL**

### **NORTHAMPTON STREET TOLL-SUPPORTED BRIDGE**

(3 span, cantilevered truss)

The Northampton Street Toll-Supported Bridge (Structure No. 280), just south of the Easton-Phillipsburg Toll Bridge, connects Easton, Pennsylvania to Phillipsburg, New Jersey.

The bridge, although aesthetically resembling a suspension bridge, is a double cantilever truss structure, adjoined by a center (main) suspended span. The three lane open steel grid deck provides a curb to curb width of 32 feet and a total bridge length of 550 feet. The current bridge was constructed in 1895, with a major rehabilitation in 2001 under Contract TS-365. Repairs were completed due to flood damages in 2005 and 2006.

The structure is currently posted for a 3 ton weight limit restriction and a 15 mph speed limit.

### **NORTHAMPTON STREET TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the southwest and northeast approach corners of the Northampton Street Toll-Supported Bridge are Commission owned Pennsylvania and New Jersey officer shelters.

## **SIGNIFICANT FINDINGS**

### **NORTHAMPTON STREET TOLL-SUPPORTED BRIDGE**

(3 span, cantilevered truss)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall satisfactory condition due to minor deterioration of structural elements.

The deck and substructure are in good condition.

The approach roadway is in satisfactory condition. The east approach roadway exhibits areas of medium to wide mapcracking and moderate wear with uneven pavement in the westbound lane. This roadway was resurfaced under Contract No. TS-499A.

The superstructure is in satisfactory condition. The floorbeams and stringers typically exhibit minor section losses. Several stringers exhibit minor impact damage. Stringer 9 at L9L10 is bent 5" to the south due to impact damage, and the 3<sup>rd</sup> riser beam from the west exhibits a 2 1/2" cracked weld at the east side with 3 of 4 connection bolts missing. Impact damage is present at the lower chord in several locations. The eyebars and pin nuts at the suspended portion of Span 2 exhibit movement and the eyebars are loose. There has been no change in movement since the previous inspection. Previously in 2007 a special inspection was performed to determine the source of an audible noise reported by the bridge officers near the west abutment. No reports of this noise have been reported in 2008.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in satisfactory condition due to minor deterioration of mortar joints at the west abutment.

#### NORTHAMPTON STREET TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania and New Jersey officer shelters are in overall good condition. Lavatory facilities at the officer shelters have recently been upgraded by Commission Maintenance Forces.

### **CONCLUSIONS**

#### NORTHAMPTON STREET TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall satisfactory condition due to minor deterioration in structural elements. The stone masonry joints in the abutments and wingwalls should be repaired. Cracks in the concrete aprons at Pier 1 and 2 should be pressure injected. The concrete apron at Pier 2 should be repaired and riprap installed around Pier 2. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

#### NORTHAMPTON STREET TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The Pennsylvania and New Jersey officer shelters are in overall good condition. Lavatory facilities at the officer shelters have been upgraded by Commission Maintenance Forces.



# Northampton Street Toll-Supported Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

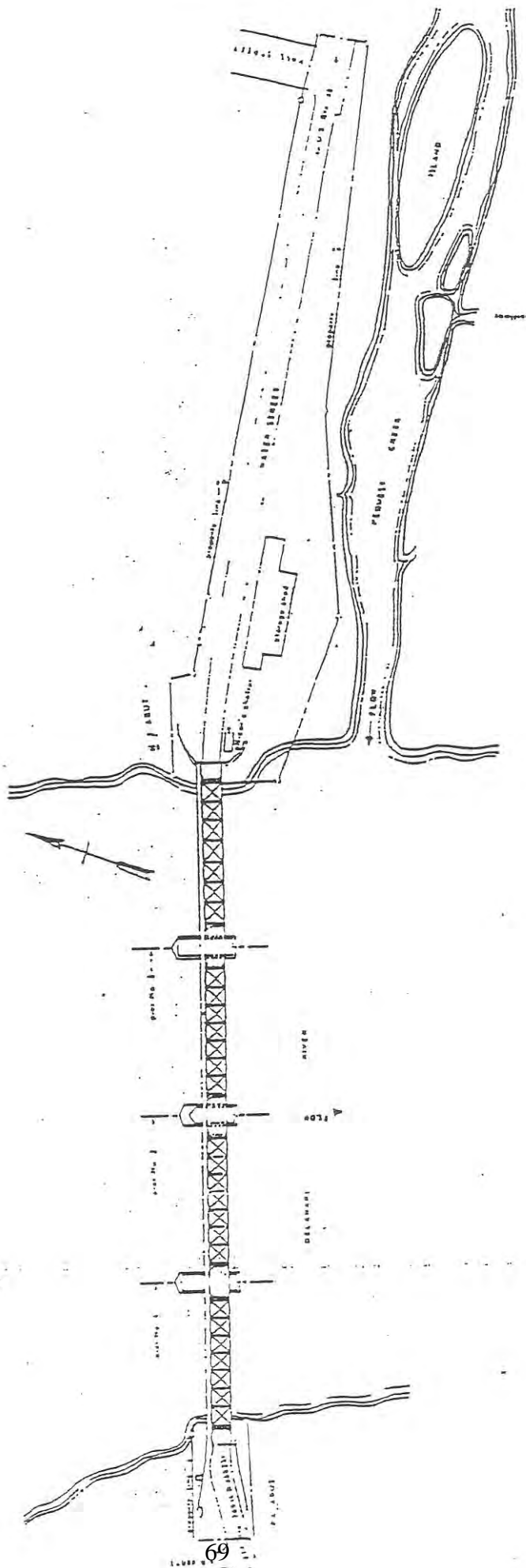
Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
The bridge was rehabilitated in 2002.				
BRIDGES SUB TOTAL		\$0	\$0	\$0
<b><u>Facilities and Grounds</u></b>				
NHSTSB	Miscellaneous Projects (less than \$100k each)	\$647,000	\$50,000	\$52,000
FACILITIES AND GROUNDS SUB TOTAL		\$647,000	\$50,000	\$52,000
TOTAL COST		\$647,000	\$50,000	\$52,000



***RIVERTON-BELVIDERE***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 320)***

STATE OF NEW JERSEY  
COUNTY OF WARREN  
TOWN OF DELVIDERE

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF NORTHAMPTON  
TOWNSHIP OF LOWER MOUNT BETHEL  
RIVERTON



RIVERTON - BELVIDERE TOLL SUPPORTED BRIDGE

## **GENERAL**

### **RIVERTON-BELVIDERE TOLL-SUPPORTED BRIDGE**

(4 span, riveted steel, double warren truss)

The Riverton-Belvidere Toll-Supported Bridge (Structure No. 320) carries Water Street across the Delaware River and connects Riverton, Lower Mount Bethel Township, Pennsylvania with the Town of Belvidere, New Jersey.

The bridge, constructed in 1904, is a four span, riveted steel, double Warren Truss structure, with a total length of approximately 653 feet. The open steel grid deck provides a curb to curb width of 16 feet, 4 inches. In addition, a concrete filled steel grid sidewalk is supported on the upriver truss with steel cantilever brackets.

The piers and the Pennsylvania abutment are rough ashlar faced masonry and stone filled. The piers are supported on timber cribs and lower portions are concrete filled steel sheet piling (1929-32). The New Jersey abutment, including its wingwalls, is constructed of concrete on timber piles.

The bridge is currently posted for an 8 ton weight limit restriction and a 15 mph speed limit.

A comprehensive bridge rehabilitation was completed under Contract No. TS-371A in 2007.

### **RIVERTON-BELVIDERE TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS**

At the southeast approach corner of the Riverton-Belvidere Toll-Supported Bridge is a Commission owned New Jersey officer shelter. A commission owned storage garage is also at the southeast end of the bridge.

## **SIGNIFICANT FINDINGS**

### **RIVERTON-BELVIDERE TOLL-SUPPORTED BRIDGE**

(4 span, riveted steel, double warren truss)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall good condition.

The deck, approach roadway, superstructure and substructure are in good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in satisfactory condition due to minor deterioration including concrete cracks at the abutments and undermining at Pier 2. The cracks were repaired under Contract No. TS-371A.

## RIVERTON-BELVIDERE TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The New Jersey officer shelter is in overall poor condition. The bathroom floor exhibits areas of rotted timber and is uneven. The entire shelter is pitched towards the south.

The storage garage is in overall poor condition. There are numerous holes in the roof causing water leakage throughout the garage floor. The roof is deteriorating and exhibits vegetation growth throughout.

## CONCLUSIONS

### RIVERTON-BELVIDERE TOLL-SUPPORTED BRIDGE

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting the posted load.

The structure is in overall good condition. Scour protection including the installation of riprap at the east and west abutments and Pier 2 is recommended. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

### RIVERTON-BELVIDERE TOLL-SUPPORTED BRIDGE FACILITIES AND GROUNDS

The New Jersey officer shelter is in overall poor condition. The Commission should consider undertaking a study to determine whether the shelter can be rehabilitated or if it should be replaced. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The storage garage is in overall poor condition. The Commission should consider undertaking a study to repair and upgrade the condition of the roof. This work is currently scheduled to be included under Contract No. 505 Water Street Repairs.

# *Riverton-Belvidere Toll-Supported Bridge*

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
371	R-B TSB Rehabilitation Contract (Design / Construction)	\$9,289,000	\$35,000	\$0
505	R-B Water Street Improvements	\$1,303,000	\$76,000	\$1,227,000
<b>BRIDGES SUB TOTAL</b>		<b>\$10,592,000</b>	<b>\$111,000</b>	<b>\$1,227,000</b>
<b><u>Facilities and Grounds</u></b>				
RBTSB	Miscellaneous Projects (less than \$100k each)	\$5,000	\$5,000	\$6,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$5,000</b>	<b>\$5,000</b>	<b>\$6,000</b>
<b>TOTAL COST</b>		<b>\$10,597,000</b>	<b>\$116,000</b>	<b>\$1,233,000</b>

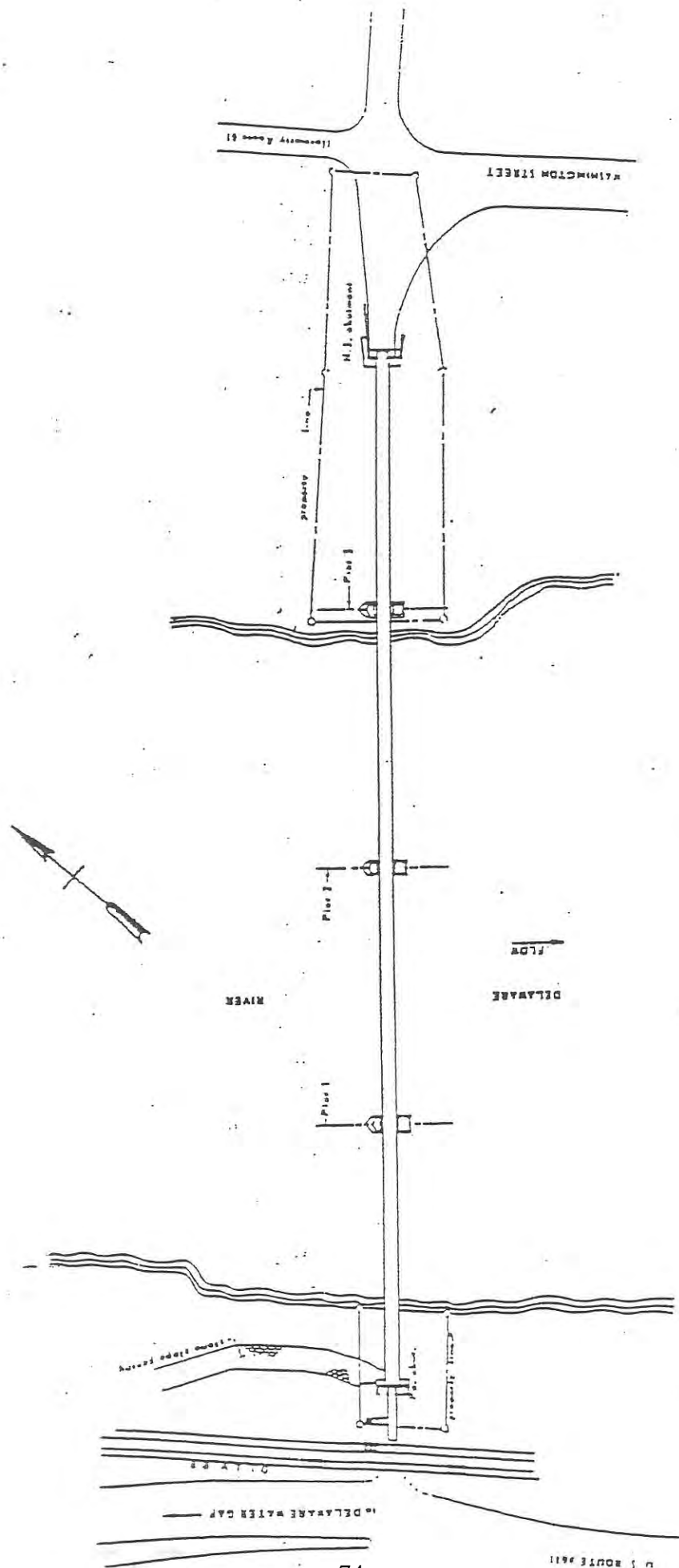




***PORTLAND-COLUMBIA***  
***TOLL-SUPPORTED BRIDGE***  
***(Structure No. 360)***

STATE OF NEW JERSEY  
COUNTY OF WARREN  
TOWN OF COLUMBIA

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF NORTHAMPTON  
BOROUGH OF PORTLAND



# PORTLAND - COLUMBIA TOLL SUPPORTED BRIDGE

## **GENERAL**

### **PORTLAND-COLUMBIA TOLL-SUPPORTED BRIDGE**

(4 span, continuous, steel thru-deck girder)

The Portland-Columbia Toll-Supported Bridge (Structure No. 360) connects Portland Borough (Upper Mount Bethel Township), Pennsylvania with Columbia (Knowlton Township), New Jersey, just north of the Portland-Columbia Toll Bridge.

This Pedestrian Bridge is a four span continuous, thru-deck steel girder system, with a concrete deck and built up girders with a total length of 770 feet. The width of the walkway is 9 feet, 6 inches between girder centers. The present bridge was reconstructed in 1958, following the flood of 1955, and original vehicular traffic was diverted to the main river bridge.

This bridge was last cleaned and painted in 1998 under Contract 346. In 2003, the construction of a handicap accessible ramp at the west approach and bridge deck modifications was completed under Contract No. TS-388. In 2004, drainage and deck modifications were done under Contract No. TS-388A to alleviate ponding of water and corrosion due to improper drainage.

## **SIGNIFICANT FINDINGS**

### **PORTLAND-COLUMBIA TOLL-SUPPORTED BRIDGE**

(4 span, continuous, steel thru-deck girder)

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall poor condition due to the substructure.

The deck is in satisfactory condition. The top of deck exhibits light to moderate scaling throughout with fine to medium transverse cracks. Several incipient spalls and spalls with exposed rebar are present at the deck underside. The underside of deck also exhibits fine to medium transverse cracks with efflorescence and water stains.

The approach walkways and superstructure are in good condition.

The substructure is in poor condition. The north retaining wall is fractured adjacent to the west abutment breastwall and is displaced 2" towards the east. The top of the northeast retaining wall is displaced 8" towards the west. The east abutment breastwall exhibits spalled and hollow sounding concrete along the base. The east abutment backwall exhibits spalled and hollow sounding concrete patches with medium mapcracking at several locations. Fine to wide cracks are typical throughout the substructure units.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure units below the waterline were found to be in good condition with only hairline cracks and minor undermining at the pier aprons.

## **CONCLUSIONS**

### **PORTLAND-COLUMBIA TOLL-SUPPORTED BRIDGE**

Based on the findings of the 2008 inspections, the bridge is capable of safely supporting all legal loads.

The structure is in overall poor condition due to the substructure. Unsound concrete should be removed, exposed rebar should be cleaned and areas of incipient spalling throughout the underdeck should be patched. Undermined areas at all the piers should be repaired and riprap should be installed around all the piers. Broken areas of stone at the southeast corner of Pier 2 and cracked areas in the aprons at all the piers should be repaired. Riprap should be installed along the northwest wingwall at the east abutment drainage outfall. For a list of maintenance repair items, see the *Twelfth Annual Maintenance Report*.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.

# *Portland-Columbia Pedestrian Bridge*

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
412A-10	Portland - Columbia Pedestrian Bridge, PA Approach Vehicle Access	\$95,000	\$60,000	\$0
<b>BRIDGES SUB TOTAL</b>		<b>\$95,000</b>	<b>\$60,000</b>	<b>\$0</b>
<b><u>Facilities and Grounds</u></b>				
PCTSB	Miscellaneous Projects (less than \$100k each)	\$149,000	\$10,000	\$11,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$149,000</b>	<b>\$10,000</b>	<b>\$11,000</b>
<b>TOTAL COST</b>		<b>\$244,000</b>	<b>\$70,000</b>	<b>\$11,000</b>



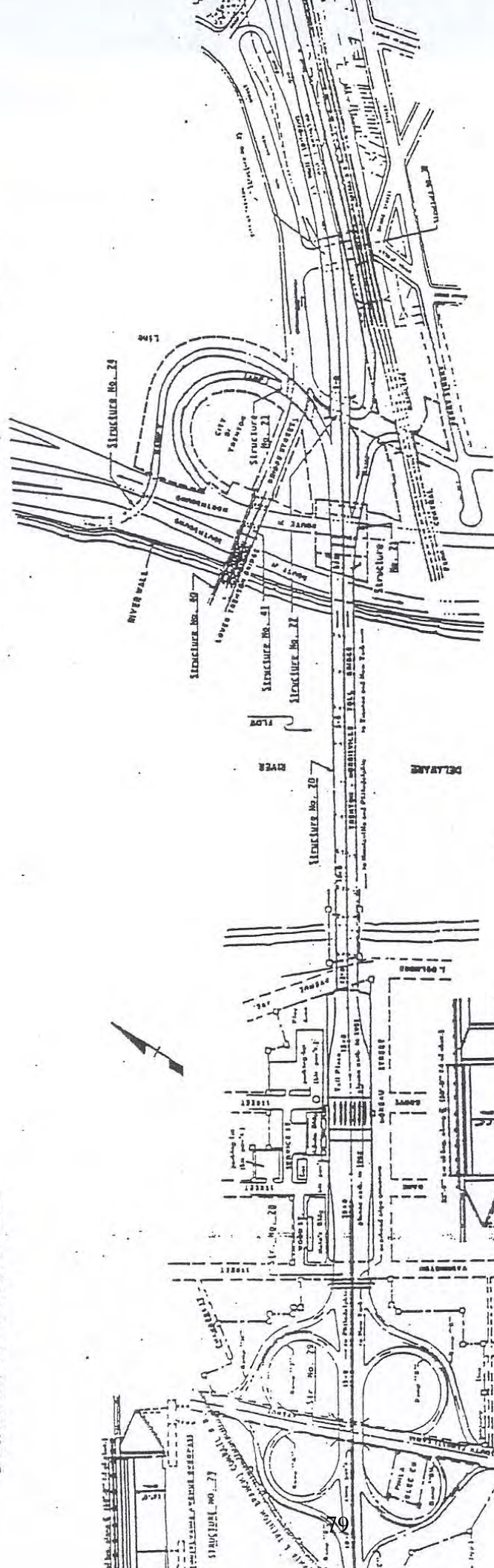
***TRENTON-MORRISVILLE***

***TOLL BRIDGE FACILITY***

***(Structure No. 20)***

STATE OF NEW JERSEY  
COUNTY OF MERCER  
CITY OF TRENTON

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
BOROUGH OF MORRISVILLE



NEW JERSEY APPROACH TO THE  
TRENTON-MORRISVILLE TOLL BRIDGE

PENNSYLVANIA APPROACH TO THE  
TRENTON-MORRISVILLE TOLL BRIDGE

TRENTON - MORRISVILLE TOLL BRIDGE



## **GENERAL**

### **TRENTON-MORRISVILLE TOLL BRIDGE**

(12 span, simply supported, composite steel multi-girder)

The Trenton-Morrisville Toll Bridge (Structure No. 20) carries US Route 1 over the Delaware River between Trenton, New Jersey and Morrisville, Pennsylvania. The main bridge is a twelve span, simply supported, composite steel girder structure with an overall length of 1,324 feet. The substructure consists of reinforced concrete abutments and piers with granite facing on the piers. The bridge was originally constructed by the Commission in 1952 as a four (4) lane roadway, and widened to six (6) lanes in 1965 for a total roadway width of 62 feet. In 1983 an aluminum barrier was erected across the bridge, creating three southbound and two northbound lanes. The posted speed limit in the northbound direction is 40 mph and 50 mph in the southbound direction until midspan, where the speed limit is reduced to 20 mph approach to toll plaza.

The Commission is currently investing more than \$100 million in a multi-year project for the widening and rehabilitation of the Route 1 corridor. This work includes the main river bridge and approach structures in New Jersey and Pennsylvania. The main river bridge is being widened from the piers up, to provide an extra lane in the northbound direction. The widening also includes a full deck replacement. Construction on this project began in late 2006 and is expected to be completed in late 2009.

### **TRENTON-MORRISVILLE TOLL BRIDGE APPROACH STRUCTURES**

The New Jersey approach consists of eight approach structures. The Pennsylvania approach consists of two approach structures.

### **TRENTON-MORRISVILLE TOLL BRIDGE FACILITY AND GROUNDS**

The one-way toll plaza, located at the Pennsylvania approach, has six toll lanes. The tollbooths are erected on concrete islands and are protected by an overhead canopy. Each lane is equipped for E-ZPass. The construction project underway includes rehabilitating the existing toll plaza. The new toll plaza will consist of five toll collection lanes, all equipped with E-ZPass, and a service tunnel for the toll collection staff.

The 2007 inspection included the accessible portions (due to construction) of the main river bridge, two approach bridges, and the facility and grounds.

## **SIGNIFICANT FINDINGS**

### **TRENTON-MORRISVILLE TOLL BRIDGE**

(12 span, simply supported, composite steel multi-girder)

The Trenton-Morrisville Toll Bridge is currently under construction. The toll bridge is being widened to accommodate an added lane in the northbound direction.

**ROUTE 29 OVERPASS (NJ)**

(3 span, prestressed concrete spread box beams)

This bridge is currently under construction. The structure is being reconstructed to accommodate an added off-ramp lane from Route 1.

**RAMP C OVER NJ ROUTE 29 (NJ)**

(3 span, steel multi-girder)

*This bridge was constructed in 2008 and is scheduled to be inspected in 2009.*

**RAMP N OVERPASS (NJ)**

(1 span, steel multi-girder)

This bridge is currently under construction. The structure is being widened to accommodate an added lane in the northbound direction.

**RAMP IY OVERPASS (NJ)**

(3 span, steel multi-girder)

This bridge is currently under construction for replacement of the deck.

**RAMP Y OVERPASS (LONG RAMP) (NJ)**

(4 span, steel multi-girder)

The structure is in overall good condition. The bridge will be cleaned and painted and the barrier parapets will be replaced as part of Contract No. T-380B.

**UNION STREET OVERPASS (NJ)**

(1 span, steel multi-girder)

This bridge is currently under construction. The southbound structure is being widened to accommodate an added lane in the northbound direction. The entire deck is being replaced as part of Contract No. T-380B.

**CENTER STREET UNDERPASS (NJ)**

(1 span, riveted steel plate girders)

The structure is in overall good condition.

**BROAD STREET UNDERPASS (NJ)**

(1 span, steel multi-girder)

This bridge is currently under construction. Approach roadway work and cleaning and painting of the superstructure is currently underway.

**RAMP N OVER UNION STREET (NJ)**

(3 span, prestressed concrete girders)

The structure is in overall good condition.

**WASHINGTON STREET OVERPASS (PA)**

(1 span, steel multi-girder)

This bridge is currently under construction. Deck and approach roadway work on the northbound lanes is currently underway.

**SOUTH PENNSYLVANIA AVENUE OVERPASS (PA)**

(1 span steel multi-girder)

The structure is in overall good condition.

**TRENTON-MORRISVILLE TOLL BRIDGE FACILITY AND GROUNDS**

There is on going construction at the toll plaza and approaches. A new concrete tunnel was constructed under the toll plaza to provide access between the tollbooths and the administration building.

The entrance to the administration building closest to the toll plaza is closed because of ongoing construction on Route 1.

The HVAC system is not working adequately. The facility personnel have indicated that the HVAC duct cleaning has been completed.

The existing roof of the administration building consists of rubber membrane system. Repair patches were observed on the roof. Occasional roof leakage has been reported.

Contracts for an electronic surveillance system along with upgrading of the fire warning and alarm systems have been awarded.

The maintenance facility administration building roof replacement is in the planning stage.

**CONCLUSIONS**

**TRENTON-MORRISVILLE TOLL BRIDGE**

The structure is in overall good condition.

The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase.

ROUTE 29 OVERPASS (NJ)

The structure is in overall good condition.

RAMP N OVERPASS (NJ)

The structure is in overall satisfactory condition due to the cracks and spalls at the substructure. There are no repairs recommended at this time due to ongoing construction.

RAMP IY OVERPASS (NJ)

The structure is in overall good condition.

RAMP Y OVERPASS (LONG RAMP) (NJ)

The structure is in overall good condition.

UNION STREET OVERPASS (NJ)

The structure is in overall good condition.

CENTER STREET UNDERPASS (NJ)

The structure is in overall good condition.

BROAD STREET UNDERPASS (NJ)

The structure is in overall fair condition due to paint loss and minor pitting of the webs at the superstructure. There are no repairs recommended at this time due to the ongoing construction.

RAMP N OVER UNION STREET (NJ)

The structure is in overall good condition.

WASHINGTON STREET OVERPASS (PA)

The structure is in overall good condition.

SOUTH PENNSYLVANIA AVENUE OVERPASS (PA)

The structure is in overall good condition.

TRENTON-MORRISVILLE TOLL BRIDGE FACILITY AND GROUNDS

A study should be performed to determine the best method of upgrading the HVAC system.

The administration building elevator should be replaced to eliminate frequent breakdowns and repairs. Presently the building elevator replacement is being studied. ***Contract No. T-500A Trenton - Morrisville Administration Building Elevator Modernization was awarded in 2008 and construction will begin in early 2009.***

For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

# Trenton-Morrisville Toll Bridge

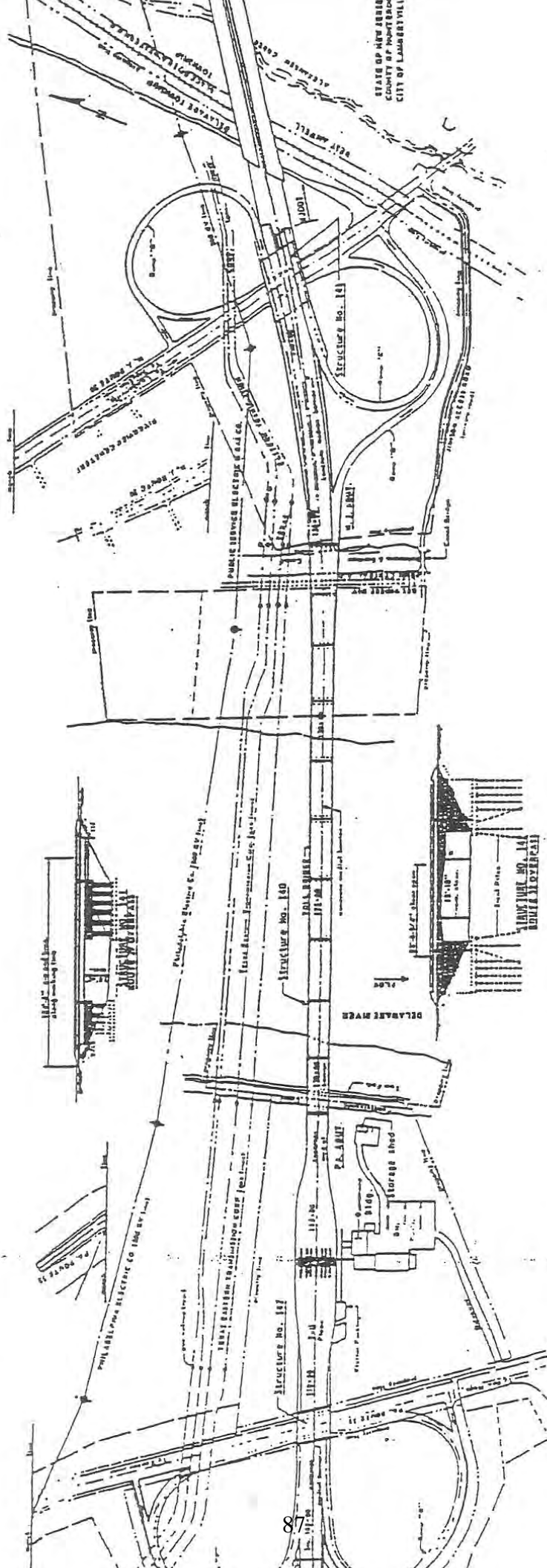
## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
380	T-M TB Rehab + One Aux. NB Lane	\$102,384,000	\$28,465,000	\$271,000
<b>BRIDGES SUB TOTAL</b>		<b>\$102,384,000</b>	<b>\$28,465,000</b>	<b>\$271,000</b>
<b><u>Facilities and Grounds</u></b>				
TMTB	Miscellaneous Projects (less than \$100k each)	\$666,000	\$50,000	\$52,000
468	TM Buildings Roof Replacement	\$731,000	\$731,000	\$0
500	TM Elevator Upgrade	\$457,000	\$381,000	\$0
519	TM Renovations (Roof, HVAC, Space)	\$3,295,000	\$213,000	\$1,698,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$5,149,000</b>	<b>\$1,375,000</b>	<b>\$1,750,000</b>
<b>TOTAL COST</b>		<b>\$107,533,000</b>	<b>\$29,840,000</b>	<b>\$2,021,000</b>

***NEW HOPE-LAMBERTVILLE***  
***TOLL BRIDGE FACILITY***  
***(Structure No. 140)***

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF BUCKS  
TOWNSHIP OF SOLEBURY

STATE OF NEW JERSEY  
COUNTY OF HUNTERDON  
TOWNSHIP OF DELAWARE



PENNSYLVANIA APPROACH TO THE  
NEW HOPE-LAMBERTVILLE TOLL BRIDGE

NEW JERSEY APPROACH TO THE  
NEW HOPE-LAMBERTVILLE TOLL BRIDGE

NEW HOPE - LAMBERTVILLE TOLL BRIDGE



## **GENERAL**

### **NEW HOPE-LAMBERTVILLE TOLL BRIDGE**

(10 span, continuous, steel two girder/floorbeam/stringer)

The New Hope-Lambertville Bridge (Structure No. 140) was opened to traffic on July 22, 1971 and carries US Route 202 over the Delaware River between Lambertville, New Jersey and New Hope, Pennsylvania. The bridge is a ten span, continuous, steel two girder fracture critical structure. The deck is reinforced concrete and carries two lanes of traffic in each direction separated by a median barrier. The substructure units are composed of reinforced concrete with stone facing. The total length of the structure is 1,682 feet measured from center to center of bearings.

### **NEW HOPE-LAMBERTVILLE APPROACH BRIDGES**

The Commission's jurisdiction also includes the loop-ramp interchanges with overpasses provided at Route 29 in New Jersey and Route 32 in Pennsylvania. The posted speed limit on the approach roadways is 55 mph.

### **NEW HOPE-LAMBERTVILLE FACILITY AND GROUNDS**

The toll plaza and toll booths at the Pennsylvania approach have one-way toll collection, replacing the two-way collection prior to the reconstruction. All lanes are equipped with E-ZPass. The toll plaza is erected on concrete islands and is protected with an overhead canopy that matches the Operations building roof.

The 2007 inspection included the main river bridge, two approach bridges, and the facility and grounds.

## **SIGNIFICANT FINDINGS**

### **NEW HOPE-LAMBERTVILLE TOLL BRIDGE**

(10 span, continuous, steel two girder/floorbeam/stringer)

This structure has been classified as structurally deficient per the FHWA system due to deficiencies found in the cantilever brackets. The condition is being addressed under Task Order Assignment No. T-498A to improve the overall condition and remove the structurally deficient classification of the structure.

*Design and post design services for the improvements to the cantilever brackets at the New Hope Lambertville Toll Bridge are being performed under Task Order Assignment No. C-449B-8.*

*The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.*

The deck, approach roadways, and substructure are in good condition.

Interim inspections of the superstructure should be performed on a 3 month interval to monitor the cracks at the cantilever brackets throughout the structure. The tie plates at the cantilever bracket are bent upwards due to pack rust between the tie plate and the top flange of the girders. Task Order Assignment No. C-449B-4 is addressing this condition with an in-depth inspection of the cantilever brackets with a permanent repair to follow. Several stringers exhibited arrested areas of material loss to the web and bottom flange. Small holes were noted at a few stringer webs. The Stringer 11 connection to the floorbeam 3 north cantilever bracket top flange in Span 9 exhibits two (2) of four (4) anchor bolts sheared off. The south fascia stringer in Span 4 exhibits a longitudinal crack at the base of the web which has been arrested by a ½" diameter drilled hole. The web at this location exhibits ¼" localized buckling.

An underwater inspection was performed in 2006 by under Contract No. C-467D. The substructure was found to be in good condition with only minor exposure of the pier footings.

#### ROUTE 29 OVERPASS

(3 span, simply supported, steel multi-stringer)

The structure is in overall satisfactory condition.

The deck is in good condition. There are several areas of loose portions of the wabo-flex deck joint at the northbound and southbound roadways.

The approach roadway is in satisfactory condition. The approach slabs exhibit several fine to medium cracks throughout.

The superstructure is in good condition.

The substructure is in satisfactory condition. Several large areas of hollow concrete are noted at the east abutment breastwall and the pier caps and columns. Pier 2 exhibits a large spall with exposed reinforcement and an adjacent hollow concrete area at the north end of the cap.

#### ROUTE 32 OVERPASS

(1 span, reinforced concrete rigid frame)

The structure is in overall satisfactory condition.

The roadway is in good condition.

The approach roadway is in satisfactory condition. The approach roadway slabs exhibit few medium to wide cracks throughout.

The superstructure is in satisfactory condition. The intrados of the rigid frame exhibits few fine to medium cracks with efflorescence at the north and south ends of the midspan. Incipient spalls are noted on the concrete rigid frame over the median and the northbound left lane.

The substructure is in good condition.

#### NEW HOPE-LAMBERTVILLE TOLL BRIDGE FACILITY AND GROUNDS

The New Hope-Lambertville tollbooths and tunnels are in new condition. The roadways at the tollbooths are in good condition. The administration building, attached garage facility, and barn sheds have new roofs. New lampposts have been installed in the parking lots.

An extension to the existing administration building should be under construction in late fall of 2007 and completed by spring of 2008. Also, 29 additional parking spaces will be constructed adjacent to the existing parking lot.

### CONCLUSIONS

#### NEW HOPE-LAMBERTVILLE TOLL BRIDGE

The structure is in overall poor condition due to the superstructure. Due to the cracks noted in the steel superstructure, interim inspections are recommended to be performed on a three (3) month basis. These inspections should include all cantilever brackets on the bridge. Priority repairs to arrest the noted cracks should be undertaken within the next 6-12 months. This recommendation has been addressed through Task Order Assignment No. C-449B-4. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

#### ROUTE 29 OVERPASS

The structure is in overall satisfactory condition. The deck joints are deteriorated throughout the structure and the portions of the deck joints that are either loose or missing should be repaired. There are several areas of spalls with exposed reinforcement and hollow concrete areas throughout the substructure that should be patched with concrete. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

#### ROUTE 32 OVERPASS

The structure is in overall satisfactory condition. The concrete rigid frame exhibited areas of incipient spalls over the median and the northbound left lane. The concrete at these areas should be removed, the exposed reinforcement cleaned, and the area epoxy coated. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

#### NEW HOPE-LAMBERTVILLE TOLL BRIDGE FACILITY AND GROUNDS

A HVAC study was included with the administration building extension to be built in the near future. Contract No. T-397B will include upgrades to the HVAC system. Contract No. T-397B will also include a back-up generator to supply all power needs of the facility. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

***Contract No. T-397B: New Hope - Lambertville Toll Bridge Building Renovations & Addition was substantially completed in October 2008 and rededication of the building was held in December 2008.***

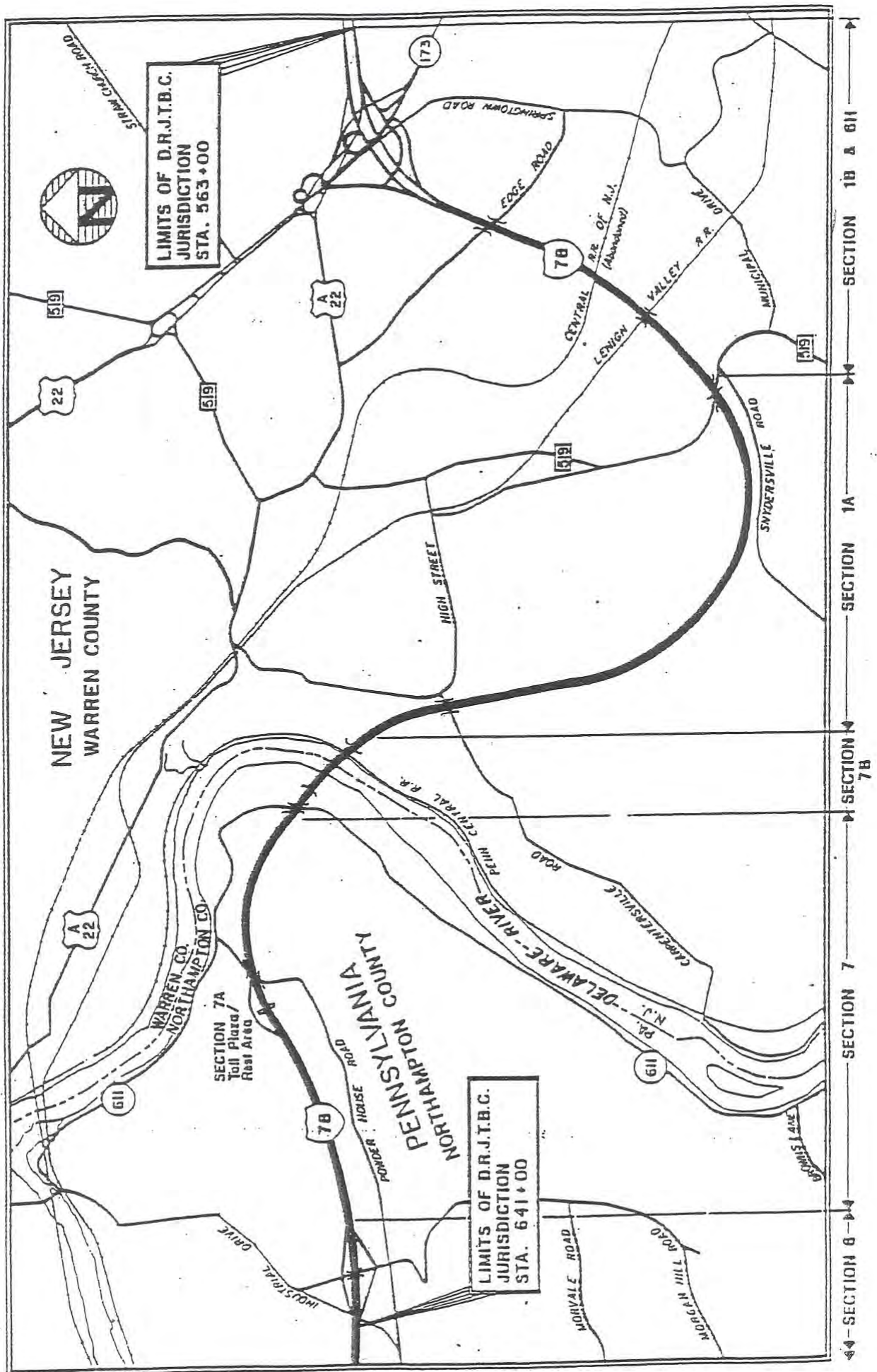
# New Hope Lambertville Toll Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
498	NH-L TB - Floorbeam Bracket Improvements	\$5,671,000	\$5,266,000	\$0
<b>BRIDGES SUB TOTAL</b>		<b>\$5,671,000</b>	<b>\$5,266,000</b>	<b>\$0</b>
<b><u>Facilities and Grounds</u></b>				
NH-LTB	Miscellaneous Projects (less than \$100k each)	\$419,000	\$60,000	\$32,000
397	NH-L Additions & Renovations	\$5,951,000	\$190,000	\$0
521	NH-L TB Equipment and Salt Storage Building Replacement	\$934,000	\$48,000	\$467,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$7,304,000</b>	<b>\$298,000</b>	<b>\$499,000</b>
<b>TOTAL COST</b>		<b>\$12,975,000</b>	<b>\$5,564,000</b>	<b>\$499,000</b>



***INTERSTATE 78***  
***TOLL BRIDGE FACILITY***  
***(Structure Nos. 270 & 275)***



**INTERSTATE 78  
TOLL BRIDGE**



## **GENERAL**

### **INTERSTATE 78 TOLL BRIDGE**

(Twin 7 span, continuous, steel multi-girder)

The Interstate 78 toll bridge carries traffic over the Delaware River between Northampton County, Pennsylvania and Warren County, New Jersey. The facility was opened to traffic on November 21, 1989. The Interstate 78 main river bridge (Structure nos. 270 & 275) is a twin, 1,222 foot long, four girder, 7 span continuous bridge. The dual roadways are each 46 feet from curb to curb and carry three lanes of traffic. The substructure consists of reinforced concrete hammerhead piers and reinforced concrete stub abutments. The posted speed limit on the bridge is 55 mph.

### **INTERSTATE 78 APPROACH BRIDGES**

The New Jersey approach consists of six approach structures. The Pennsylvania approach consists of five approach structures. In total there are eleven (11) approach structures owned and maintained by the Commission that are part of the Interstate 78 Toll Bridge Facility.

### **INTERSTATE 78 ROADWAY**

The Commission's jurisdiction extends approximately 2.2 miles to the west at the Pennsylvania approach and includes five (5) bridges and a Welcome Center. The New Jersey approach extends approximately 4.7 miles to the east (not including Conrail over I-78 or the Route 173 structures) from the main river bridge and includes six (6) bridges.

### **INTERSTATE 78 TOLL BRIDGE FACILITY AND GROUNDS**

The one-way toll plaza, located at the Pennsylvania approach of the westbound lanes, has seven toll lanes. All toll booth are erected on concrete islands and are protected by an overhead canopy. All lanes are equipped with E-ZPass.

The 2007 inspection included the eastbound and westbound main river bridges, eleven (11) approach structures, and the facility and grounds.

## **SIGNIFICANT FINDINGS**

### **INTERSTATE 78 TOLL BRIDGE (WESTBOUND)**

(7 span, continuous, steel multi-girder)

The structure is in overall good condition.

The deck, superstructure, substructure are in good condition.

The approach roadway is in satisfactory condition. Few medium to wide transverse cracks were noted at the approach roadways. The hot pour sealer at the abutment header is slightly deteriorated and depressed.

INTERSTATE 78 TOLL BRIDGE (EASTBOUND)

(7 span, continuous, steel multi-girder)

The structure is in overall good condition.

The deck is in satisfactory condition. The top of deck exhibits numerous fine to medium transverse cracks throughout. The SIP forms at the underside of the deck have isolated areas of spot rust and the concrete overhangs exhibit few fine cracks with efflorescence.

The approach roadway is in satisfactory condition. Few medium to wide transverse cracks were noted at the approach roadways. The east approach roadway exhibits a spall between the right and center lanes.

The superstructure and substructure are in good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructures for the eastbound and westbound roadways were found to be in good condition with only minor deficiencies noted.

MORGAN HILL ROAD OVERPASS

(2 span, simply supported, prestressed concrete spread box beams)

The structure is in overall good condition.

The deck is in satisfactory condition. The top of deck exhibits fine to medium cracks, some partially sealed, throughout. The compression seal deck joints are partially covered with hot poured sealer and exhibit deterioration where visible.

The approach roadway is in satisfactory condition. Medium to wide cracks were noted throughout both approach roadways. The approach shoulder pavement exhibits heavy scaling and potholes at the east and west shoulders of both approach roadways.

The superstructure and substructure are in good condition.

CEDARVILLE ROAD OVERPASS

(4 span, simply supported, prestressed concrete I-beams)

The structure is in overall good condition. The deck, approach roadways, superstructure, and substructure are all in good condition.

I-78 WESTBOUND OVER ROUTE 611

(3 span, simply supported, prestressed concrete spread box beams)

The structure is in overall good condition.

The deck, superstructure, and substructure are in good condition.

The approach roadways are in satisfactory condition. The west approach roadway exhibits medium to wide cracks. The east approach roadway has few spalls partially patched with asphalt.

I-78 EASTBOUND OVER ROUTE 611

(3 span, simply supported, prestressed concrete spread box beams)

The structure is in overall good condition.

The deck, superstructure, and substructure are in good condition.

The approach roadways are in satisfactory condition. The west approach roadway exhibits medium to wide cracks. The east approach roadway has few spalls partially patched with asphalt and few wide cracks.

CARPENTERSVILLE ROAD OVERPASS

(2 span, continuous, steel multi-stringer)

The structure is in overall good condition. The deck, approach roadways, superstructure, and substructure are all in good condition.

EDGE ROAD OVERPASS

(2 span, continuous, steel multi-stringer)

The structure is in overall satisfactory condition.

The deck, approach roadways, and substructure are in good condition.

The superstructure is in satisfactory condition. The bottom flanges exhibit light to moderate rust and the remaining portion of the superstructure and bearings exhibit light surface rust.

I-78 WESTBOUND OVER ROUTE 519

(2 span, continuous, steel multi-stringer)

The structure is in overall good condition. The deck, approach roadways, superstructure, and substructure are all in good condition.

I-78 EASTBOUND OVER ROUTE 519

(2 span, continuous, steel multi-stringer)

The structure is in overall good condition.

The deck is in satisfactory condition. The compression seal deck joints are partially covered with hot poured sealer and exhibit areas of minor to moderate settlement.

The approach roadways are in satisfactory condition. The west approach roadway exhibits few partially sealed wide cracks.

The superstructure and substructure are in good condition.

#### I-78 WESTBOUND OVER RAMP C

(1 span, simply supported, steel multi-stringer)

The structure is in overall good condition.

The deck, superstructure, and substructure are in good condition.

The approach roadways are in satisfactory condition. The west approach roadways exhibits spalls and wide cracks. There are spalls at the approach slabs between the lanes due to missing and broken lane reflectors.

#### I-78 EASTBOUND OVER RAMP C

(1 span, simply supported, steel multi-stringer)

The structure is in overall good condition.

The deck, superstructure, and substructure are in good condition.

The approach roadways are in satisfactory condition. The approach roadways exhibit wide cracks throughout.

#### SERVICE ROAD OVERPASS

(1 span, simply supported, prestressed concrete adjacent box beams)

The structure is in overall good condition. The deck, approach roadways, superstructure, and substructure are all in good condition.

#### INTERSTATE 78 ROADWAY

The I-78 roadway in New Jersey is comprised of concrete slabs. These slabs have many severe transverse cracks throughout the slabs. The concrete approach roadways have many settled and uneven slab sections with spalled edges along joints. Many joints between slabs have spalled and have been filled with asphalt. An Interstate 78 Roadway Rehabilitation Contract is underway (Contract No. T-424A) and is anticipated to be completed in 2009.

#### INTERSTATE 78 TOLL BRIDGE FACILITY AND GROUNDS

Permanent impact attenuators (protective crash cushions) should be considered for installation at the islands for increased protection to the traveling public and Commission employees.

Some of the I-78 facility vehicles and equipment are not protected from the weather and are stored along parking lots because of a lack of storage capacity within the building.

## **CONCLUSIONS**

### **INTERSTATE 78 TOLL BRIDGE (WESTBOUND)**

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

***The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.***

### **INTERSTATE 78 TOLL BRIDGE (EASTBOUND)**

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

***The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.***

### **MORGAN HILL ROAD OVERPASS**

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### **CEDARVILLE ROAD OVERPASS**

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### **I-78 WESTBOUND OVER ROUTE 611**

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### **I-78 EASTBOUND OVER ROUTE 611**

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### **CARPENTERSVILLE ROAD OVERPASS**

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### EDGE ROAD OVERPASS

The structure is in overall satisfactory condition. The guide rail at the east parapet of the south approach exhibits a sheared anchor bolt and should be replaced. The superstructure steel and bearings should be painted. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### I-78 WESTBOUND OVER ROUTE 519

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### I-78 EASTBOUND OVER ROUTE 519

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### I-78 WESTBOUND OVER RAMP C

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### I-78 EASTBOUND OVER RAMP C

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### SERVICE ROAD OVERPASS

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### INTERSTATE 78 ROADWAY

The I-78 roadway has excessive slab cracking and settlement for the majority of the Commission owned portion of I-78 (especially the NJ portion). Presently, Contract No. T-424 is underway for the I-78 Roadway Rehabilitation in New Jersey.

### INTERSTATE 78 TOLL BRIDGE FACILITY AND GROUNDS

A study should be conducted to determine the need for additional vehicle and equipment storage at the I-78 facility.

A study of the HVAC system should be conducted to determine whether the system located in the maintenance facility needs to be upgraded.

Consideration should be given to the installation of permanent impact attenuators at the toll plaza.

For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

# Interstate 78 Toll Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

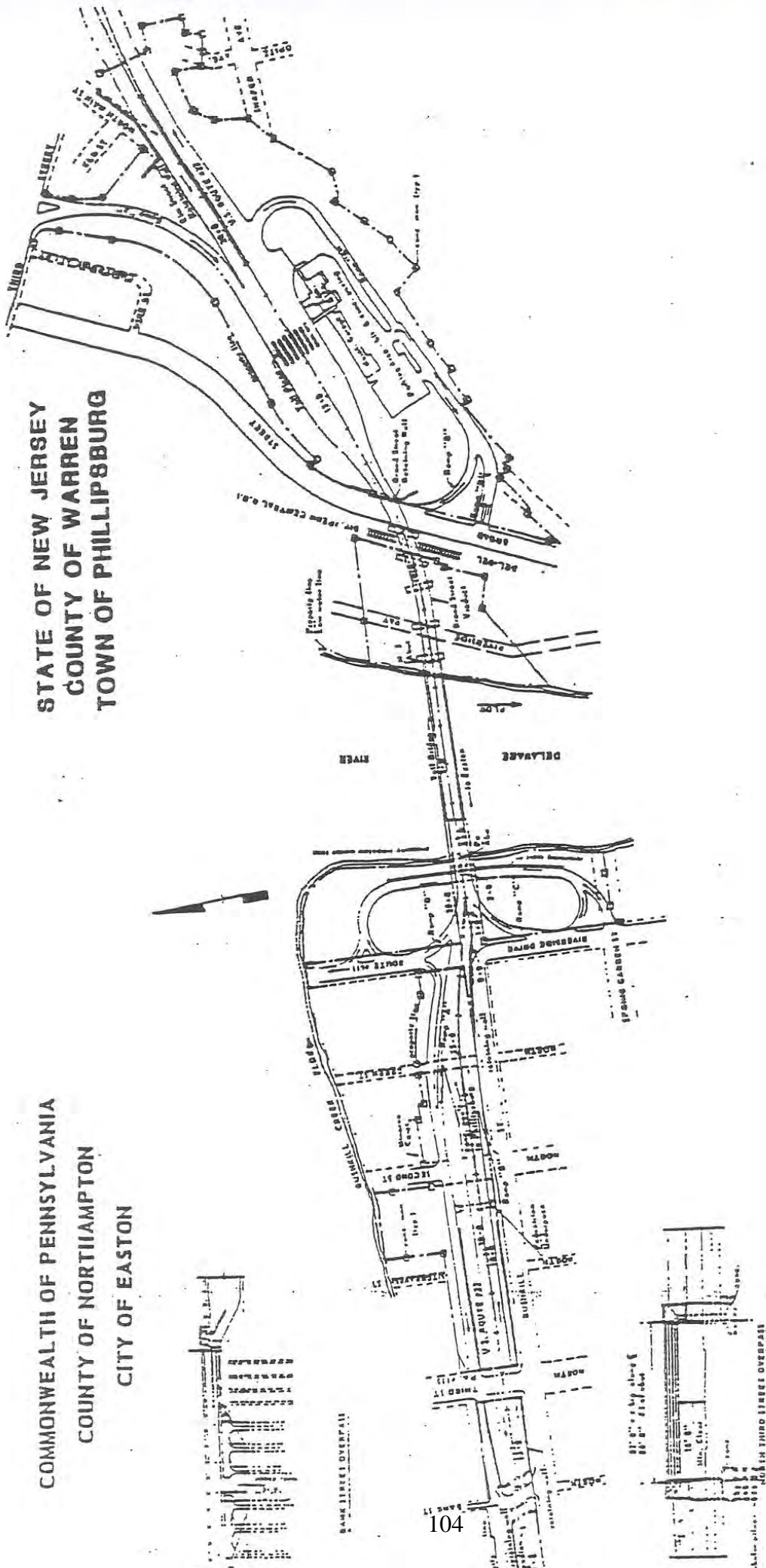
Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
424	I-78 Roadway Rehabilitation	\$57,624,000	\$27,729,000	\$0
427B	I-78 Open Road Tolling (ORT) Lanes	\$15,928,000	\$4,362,000	\$8,220,000
<b>BRIDGES SUB TOTAL</b>		<b>\$73,552,000</b>	<b>\$32,091,000</b>	<b>\$8,220,000</b>
<b><u>Facilities and Grounds</u></b>				
I-78TB	Miscellaneous Projects (less than \$100k each)	\$649,000	\$50,000	\$52,000
507	I-78 HVAC Upgrade	\$698,000	\$0	\$78,000
508	I-78 Vehicle Storage Building	\$3,108,000	\$0	\$189,000
506	I-78 Welcome Center Parking Lot Pavement Improvements	\$1,004,000	\$0	\$17,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$5,459,000</b>	<b>\$50,000</b>	<b>\$336,000</b>
<b>TOTAL COST</b>		<b>\$79,011,000</b>	<b>\$32,141,000</b>	<b>\$8,556,000</b>



***EASTON-PHILLIPSBURG***  
***TOLL BRIDGE FACILITY***  
***(Structure No. 300)***

STATE OF NEW JERSEY  
COUNTY OF WARREN  
TOWN OF PHILLIPSBURG

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF NORTHAMPTON  
CITY OF EASTON



EASTON - PHILLIPSBURG TOLL BRIDGE

## **GENERAL**

### **EASTON-PHILLIPSBURG TOLL BRIDGE**

(1 span, Petit Thru-Truss)

The Easton-Phillipsburg Toll Bridge (Structure No. 300) carries US Route 22 over the Delaware River. The bridge was opened to traffic on January 14, 1938. Westbound only toll collection commenced on June 4, 1989. The main river bridge consists of a 540 foot Petit thru-truss span over the Delaware River. The overall length, including the approaches on either end of the structure, is approximately 1,010 feet. The roadway width is 40 feet between the trusses and carries 4 lanes of traffic. There are 8 foot sidewalks cantilevered outside of both trusses. The substructure consists of reinforced concrete abutments. The posted speed limit through the toll bridge facility is 25 mph.

Sidewalk reconstruction was performed under Contract No. T-420 and was completed in 2004.

The underside of the Easton-Phillipsburg Toll Bridge, which includes the roadway stringers, floorbeams, and the bottom chords of the trusses, received an in-depth inspection in April 2007. This special in-depth inspection was required due to the limited access to those members for the regular inspections. The underside components were found to be in overall satisfactory condition. All major areas of section loss at the floorbeams and lateral bracing was found below the curblines due to poor drainage.

### **EASTON-PHILLIPSBURG TOLL BRIDGE APPROACH STRUCTURES**

The Commission's jurisdiction includes a total of five (5) approach structures. On the Pennsylvania approach there are four approach structures.

Approximately 2,000 feet of the Pennsylvania approach was reconstructed in 1982. This reconstruction included new superstructures for the overpasses at Bank Street, Third Street, and Route 611. The truss support for the center bearing of the Broad Street Viaduct was reconstructed in 2001.

### **EASTON-PHILLIPSBURG TOLL BRIDGE FACILITY AND GROUNDS**

The one-way toll plaza, located at the New Jersey approach, has five toll lanes. All tollbooths are erected on concrete islands and are protected by an overhead canopy. All lanes are equipped for E-ZPass.

The 2007 inspection included the main river bridge, five (5) approach bridges, and the facility and grounds.

## **SIGNIFICANT FINDINGS**

### **EASTON-PHILLIPSBURG TOLL BRIDGE**

(1 span, Petit Thru-Truss)

The structure is in overall satisfactory condition.

The deck is in satisfactory condition. Numerous medium to wide transverse cracks are noted throughout the bridge, mainly over the floorbeam locations. The pedestrian railing exhibited cracks at the base of the several posts.

There are no approach roadways for this structure due to the adjacent approach structures.

The superstructure is in satisfactory condition. Several members exhibit isolated areas of light to moderate surface rust and peeling paint. Pack rust was noted at several locations between eyebars and at gusset plate connections. Few access cover plates at the vertical truss members are welded and few welds are cracked. The underside inspection performed by Schoor DePalma, Inc. in April 2007 noted minor section loss to the floorbeams and lateral bracing.

The substructure is in good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure was noted to be in good condition. No major deficiencies were noted at either abutment in the underwater inspection report.

### **BROAD STREET VIADUCT**

(5 span, simply supported, riveted steel three girder-floorbeam-stringer system)

The structure is in overall fair condition.

The deck is in satisfactory condition. Fine to medium transverse cracks are noted throughout the top of deck. Several areas of the underside steel trough and sidewalk SIP forms exhibit heavy laminar rust. Cracks are noted at the base plates of the north and south bridge pedestrian railing posts.

The approach roadway (east only) is in satisfactory condition. Medium to wide cracks are noted in the asphalt. The eastbound and westbound lane exhibited small spalls and loose concrete.

The superstructure is in fair condition. Several structural steel members exhibit areas of moderate to severe corrosion below the deck joints, along the curb openings, and those exposed directly to the elements. Severe rust was noted at the end stringers and floorbeam under the deck joint at Pier 4 with up to 50% material loss to the stringer connection bolts. Stringers 2 and 4 (from the north) deflect up to 1/4" at the connection to the floorbeam at Pier 4 due to the losses at the connection bolts. Repaired cracks were noted at Piers 1 to 3 at the floorbeam-kneebrace connections. The weld repair at the vertical connection to the Span 3 south girder at Pier 3 has cracked and is 21" long. The crack extends approximately 1/2" beyond the weld repair area.

The substructure is in good condition.

### ROUTE 611 OVERPASS

(1 span, simply supported, prestressed concrete adjacent box beam)

The structure is in overall satisfactory condition.

The deck is in fair condition. The top of deck exhibits large areas of deteriorated asphalt patches and concrete areas. The compression seal deck joints at the east and west abutments are depressed, torn, and missing throughout. The parapets have few small spalls and incipient spalls throughout.

The approach roadway (west only) is in good condition.

The superstructure is in satisfactory condition. The prestressed box beams exhibit few small spalls and moderate water stains throughout.

The substructure is in satisfactory condition. The abutments have few medium to wide cracks throughout.

### THIRD STREET OVERPASS

(1 span, simply supported, steel multi-stringer)

The structure is in overall good condition. The deck, approach roadways, superstructure, and substructure are all in good condition.

### BANK STREET OVERPASS

(3 span, continuous, steel multi-stringer)

The structure is in overall good condition. The deck, approach roadways, superstructure, and substructure are all in good condition.

The inlet at the northwest corner of Bank Street under Span 2 has settled with erosion of the roadway slab subbase material adjacent to the inlet. The concrete sidewalls of the inlet have also spalled with several areas of missing and broken concrete.

### PEDESTRIAN TUNNEL

(Single cell, reinforced concrete box culvert)

The structure is in overall good condition. The roadway and culvert are in good condition.

### EASTON-PHILLIPSBURG TOLL BRIDGE FACILITY AND GROUNDS

The west side of the toll plaza has several concrete slabs of roadway with a few open and wide transverse cracks. The roadway surface is uneven with wear along tire lines and minor settlement of concrete slabs. During heavy rain, there are areas with ponding water and the tunnel under the toll booth exhibits minor leakage and occasionally the carpets on tunnel floor over the drains become wet. Overall the toll plaza is in fair condition.

Localized failure of steep embankments located at east and south sides of the maintenance yard, adjacent to the Broad Street ramp, were previously noted. Eroded embankment was observed at the base of the slope. These areas appear to be stable at the time of this inspection.

The current diesel fuel storage tank used by this facility has a 250 gallons capacity and it is inadequate for current needs. The fuel is dispensed utilizing a hand pump. The current underground diesel storage tank should be replaced with an above ground tank.

The circulating hot water heating system in the administration building is not functioning adequately and it needs to be flushed cleaned. Maintenance forces at the facility indicated that they will flush this heating system.

The tiles in the 1<sup>st</sup> floor hallway, 2<sup>nd</sup> floor hallway, and elevator of the administration building should be replaced due to the uneven walking surface. The existing tile and mastic material may contain asbestos. The Commission should have a qualified consultant or contractor test for asbestos containing material. If asbestos exists the Commission should let a contract to properly dispose of the material and replace the tile.

The roof on the administration building and garage was replaced in 2007 under Contract No.T-465A.

The City of Easton recently informed the Commission that a storm drainage line running in close proximity to the northern foundation of Sign Structure A is partially blocked by concrete. The storm drainage line in question is an 18" concrete line. The blockage's location is in line with Sign Structure A's northern foundation. ***This work was completed under C-T424A in 2008.***

## **CONCLUSIONS**

### **EASTON-PHILLIPSBURG TOLL BRIDGE**

The structure is in overall satisfactory condition. The general condition of the paint system of the above-deck truss is fair. Consideration should be given for a major rehabilitation project for the toll bridge and the approach structures. The rehabilitation project should include cleaning and painting of the superstructure, miscellaneous steel repairs, and drainage improvements. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

***The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.***

### **BROAD STREET VIADUCT**

The structure is in overall fair condition. The cracked vertical connection angles between the south girder and east end floorbeam at Pier 3 and between Stringer 3 and the floorbeam at Pier 4 should be replaced during a future rehabilitation project, while arresting the cracks should be included in a future miscellaneous repair contract. All the floorbeam ends and gusset plates should be cleaned and spot painted. The cracks at the east abutment backwall and breastwall

should be sealed. The cracked and hollow areas at the east abutment backwall and northeast wingwall should be removed and patched with concrete. The repaired cracked welds at the connection angles throughout the structure and the Span 5 stringer connections at Pier 4 should be monitored. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

#### ROUTE 611 OVERPASS

The structure is in overall satisfactory condition. The top of deck exhibits large areas of deteriorated asphalt patches and concrete areas which should be removed and repaired with concrete. The compression seal deck joints at the east and west abutments should be replaced. Rebuild the settled and cracked south sidewalk at the west approach. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

#### THIRD STREET OVERPASS

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

#### BANK STREET OVERPASS

The structure is in overall good condition. The inlet at the northwest corner of Bank Street should be repaired due to the erosion around the inlet. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

#### PEDESTRIAN TUNNEL

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

#### EASTON-PHILLIPSBURG TOLL BRIDGE FACILITY AND GROUNDS

The deteriorated and cracked concrete slabs on the west side of the toll plaza should be replaced. Several of concrete slabs on the east side of toll plaza in the westbound lanes should be replaced. The spalled curbs and deteriorated relief joint should be repaired.

A study should be performed for the replacement of the current diesel fuel storage tank.

A contract will be let to rectify the storm water blockage at Sign Structure A's northern foundation in the near future.

For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

# Easton-Phillipsburg Toll Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

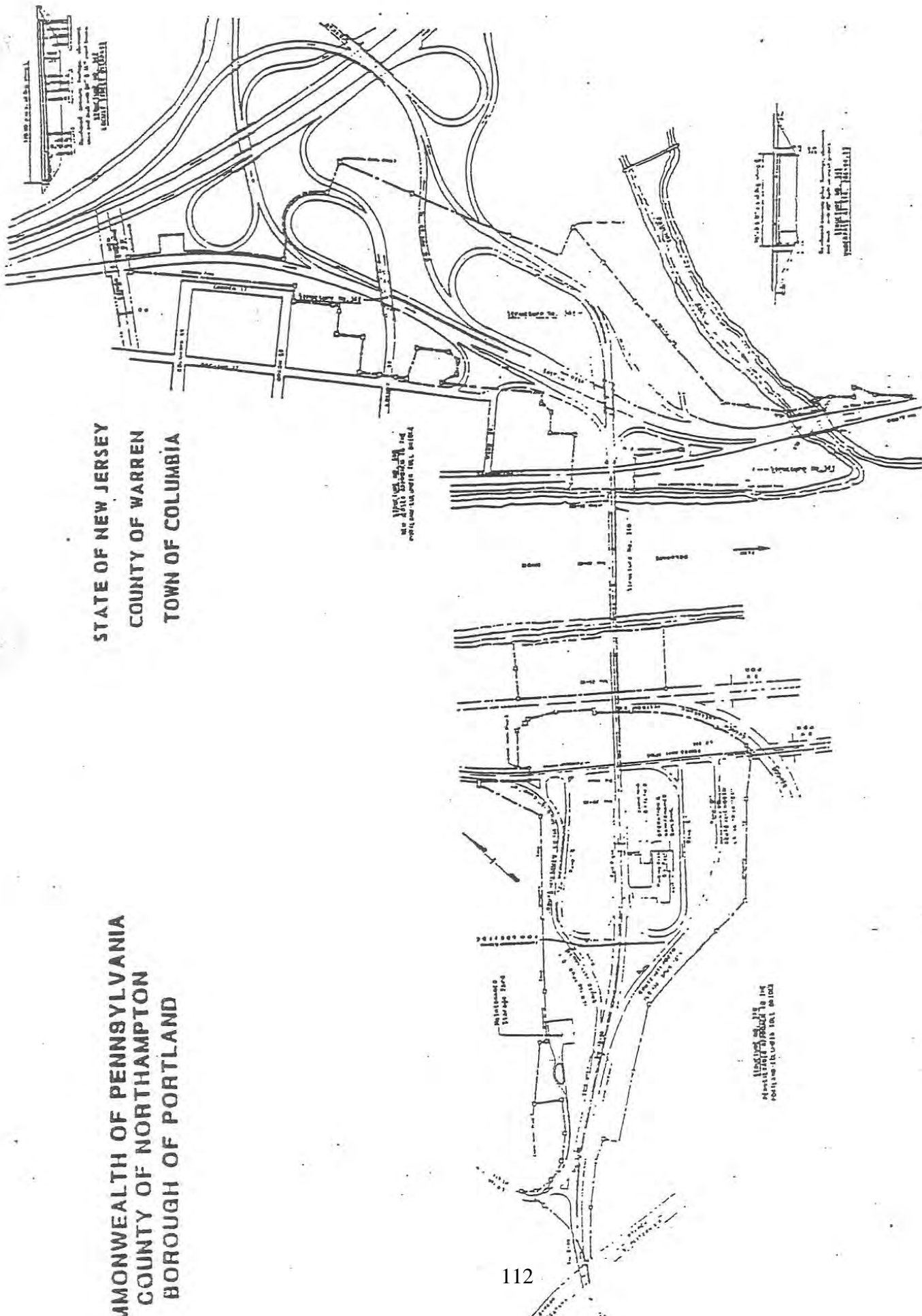
Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
436	E-P TB Sign Struct Replacements, Repair & Signage Upgrades	\$2,779,000	\$166,000	\$0
437	E-P TB Facility Rehabilitation	\$15,842,000	\$168,000	\$787,000
<b>BRIDGES SUB TOTAL</b>		<b>\$18,621,000</b>	<b>\$334,000</b>	<b>\$787,000</b>
<b><u>Facilities and Grounds</u></b>				
EPTB	Miscellaneous Projects (less than \$100k each)	\$573,000	\$40,000	\$42,000
475	E-P AST Diesel Fuel Storage Tank Replacement	\$92,000	\$92,000	\$0
509	E-P HVAC Upgrade	\$581,000	\$0	\$63,000
522	E-P Elevator Modernization	\$529,000	\$107,000	\$423,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$1,775,000</b>	<b>\$239,000</b>	<b>\$528,000</b>
<b>TOTAL COST</b>		<b>\$20,396,000</b>	<b>\$573,000</b>	<b>\$1,315,000</b>



***PORTLAND-COLUMBIA***  
***TOLL BRIDGE FACILITY***  
***(Structure No. 340)***

STATE OF NEW JERSEY  
COUNTY OF WARREN  
TOWN OF COLUMBIA

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF NORTHAMPTON  
BOROUGH OF PORTLAND



## **GENERAL**

### **PORTLAND-COLUMBIA TOLL BRIDGE**

(10 span, riveted steel multi-girder)

The Portland-Columbia Toll Bridge Facility (Structure No. 340) opened to traffic on December 1, 1953 and converted to toll collection in the westbound direction only on May 25, 1989. The bridge connects Pennsylvania Route 611 at Portland, Pennsylvania with US Route 46 at Columbia, New Jersey. US Route 46 merges with Interstate 80 located just north of the bridge on the New Jersey approach.

The main river bridge consists of a ten span, riveted steel plate girder system with an approximate total length of 1,309 feet. The roadway is 32 feet wide from curb to curb and carries one lane of traffic in each direction with a posted speed limit of 35 mph. The substructure units consist of reinforced concrete piers and concrete bin abutments. All the substructures are founded on spread footings with the exception of Pier 8, which is founded on piles. The piers also have partial granite stone facing.

A rehabilitation contract performed in 1992 included replacement of the existing concrete deck with a cast-in-place deck and concrete parapets. The combination sidewalk and maintenance walkway were removed and a new lighting system on the downstream side of the main bridge was installed. Approach roadway improvements (NJ and PA) and new drainage systems were also implemented. In 1998, the main river bridge, the pedestrian bridge to the north of the toll bridge, and both approach structures were cleaned and painted by contract.

### **PORTLAND-COLUMBIA APPROACH BRIDGES**

The Commission's jurisdiction also includes two additional bridges at the New Jersey approach. Deck and barrier replacements were performed in 1992 in conjunction with the main river bridge rehabilitation contract.

### **PORTLAND-COLUMBIA TOLL BRIDGE FACILITY AND GROUNDS**

The one-way toll plaza, located at the Pennsylvania approach, has three toll lanes. All the tollbooths are erected on concrete islands and are protected by an overhead canopy. All three lanes are equipped for E-ZPass.

The 2007 inspection included the main river bridge, two approach bridges, and the facility and grounds.

## **SIGNIFICANT FINDINGS**

### **PORTLAND-COLUMBIA TOLL BRIDGE**

(10 span, riveted steel multi-girder)

The structure is in overall good condition.

The deck is in good condition. Impact damage was noted to the cantilever sign structure connected to the north girder at Span 3. The steel support behind the sign panel is disconnected, however the sign panels are secure. The steel support at the base did not show any signs of distress or cracks. This condition is being repaired under Task Order Assignment No. C449A-2.

The approach roadway is in satisfactory condition. Large areas of fine map cracking are noted at both approaches with few medium to wide cracks. The guide rail at the north side of the east approach exhibits impact damage.

The superstructure and substructure are in good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The underwater components of the substructure were noted to be in good condition with only minor defects noted.

### **ROUTE 46 OVERPASS**

(1 span, riveted steel multi-girder)

The structure is in overall good condition.

The deck, superstructure, and substructure are in good condition.

The approach roadway is in satisfactory condition. There is a previously patched cracked and deteriorated concrete area at the centerline of the roadway of the west approach. The east approach exhibits numerous medium to wide cracks throughout the pavement.

### **LOCUST STREET OVERPASS**

(4 span, steel multi-stringer)

The structure is in overall satisfactory condition.

The deck, approach roadways, and superstructure are in good condition.

The substructure is in satisfactory condition. A spall was noted at the east abutment bridge seat exposing the anchor bolt of the Stringer 6 bearing with a 10 in<sup>2</sup> area of undermining of the masonry plate (approximately 10%). A 2 in<sup>2</sup> area of undermining (less than 5%) was also noted at the Stringer 1 bearing at the west abutment due to a small spall. All three piers exhibit hollow concrete areas at the pier columns and at the pier cap of Pier 1.

## PORTLAND-COLUMBIA TOLL BRIDGE FACILITY AND GROUNDS

The maintenance parking lot is in poor condition with wide cracking of the asphalt pavement and unevenness throughout. The additional storage yard and driveway are in poor condition with numerous areas of deteriorated pavement. Also, the roadway drainage is poor because of spalling and cracking of the pavement.

The roof on the maintenance garage and the administration building was recently replaced under Contract No. T-439A.

The HVAC controls are approximately 20 years old and the controls are not working properly.

The paint system on the overhead sign structure over the eastbound roadway, west approach, is in poor condition with areas of rust. The reflectivity of the sign panels throughout the facility is degraded and consideration should be given to replace the panels.

The entire District 3 salt storage is maintained at this location. The existing storage capacity is not sufficient.

## CONCLUSIONS

### PORTLAND-COLUMBIA TOLL BRIDGE

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

***The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.***

### ROUTE 46 OVERPASS

The structure is in overall good condition. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

### LOCUST STREET OVERPASS

The structure is in overall satisfactory condition. Repair the spalls causing the minor undermining of the bearings of Stringer 6 at the east abutment and Stringer 1 at the west abutment. Remove the pack rust below the rocker bearings at Stringer 2 to 5 at the west abutment and Stringer 4 at the east abutment. Reset the shifted sliding plate bearings at all the piers. Replace the missing anchor bolts at Stringer 1 of Pier 3. The cracked and hollow concrete throughout the piers should be removed and patched with concrete. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

## PORTLAND-COLUMBIA TOLL BRIDGE FACILITY AND GROUNDS

The maintenance (rear) parking lot and the salt storage yard access and turn around should be repaved. New sidewalks, curbs and drainage should be constructed. ***These improvements will be included in Contract No. 441A Locust Street Improvements.***

The sign structures should be repainted or replaced.

A study should be performed on the HVAC controls to determine what components need to be replaced, or if the entire system should be upgraded.

A study should be performed to determine the district's deicing requirements. The study should determine salt storage capacity, storage location and type of storage.

For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

# Portland-Columbia Toll Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
441	Locust Street Bridge Imprvmts (incl. Impact Atten., Sewer & Pk Lot Repaving)	\$1,099,000	\$830,000	\$236,000
<b>BRIDGES SUB TOTAL</b>		<b>\$1,099,000</b>	<b>\$830,000</b>	<b>\$236,000</b>
<b><u>Facilities and Grounds</u></b>				
PCTB	Miscellaneous Projects (less than \$100k each)	\$263,000	\$20,000	\$21,000
460	Portland Wastewater System Connection (incorporated in 441A)	\$13,000	\$0	\$0
503	Portland - Columbia TB Sewer Force Main Conn. & Pk Lot Paving (inc. in 441A)	\$0	\$0	\$0
510	P-C Rear Parking Lot, Storage Yard and Driveway Paving (incorporated in 441A)	\$0	\$0	\$0
512	P-C HVAC Upgrade	\$580,000	\$0	\$78,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$856,000</b>	<b>\$20,000</b>	<b>\$99,000</b>
<b>TOTAL COST</b>		<b>\$1,955,000</b>	<b>\$850,000</b>	<b>\$335,000</b>

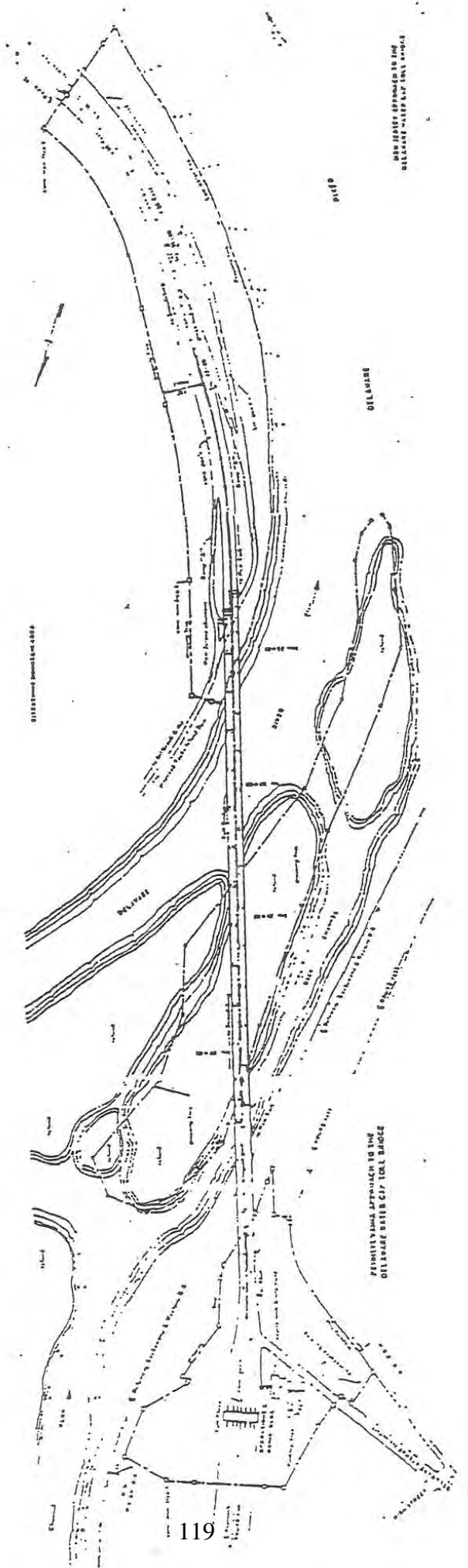




***DELAWARE WATER GAP***  
***TOLL BRIDGE FACILITY***  
***(Structure Nos. 380 & 390)***

STATE OF NEW JERSEY  
COUNTY OF WARREN  
TOWNSHIP OF PAHAQUARRY

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF MONROE  
BOROUGH OF DELAWARE WATER GAP



DELAWARE WATER GAP TOLL BRIDGE

## **GENERAL**

### **DELAWARE WATER GAP TOLL BRIDGE**

(Eastbound: 17 span, riveted steel multi-girder)

(Westbound: 16 span, riveted steel multi-girder)

The Delaware Water Gap Toll Bridge (Structure Nos. 380 and 390) carries Interstate 80 across the Delaware River near Stroudsburg, Pennsylvania, providing a gateway from the eastern metropolitan area to the Pocono recreational area. Through Pennsylvania, the four lane limited access highway crosses the width of Pennsylvania to the Ohio border and directly connects to the Ohio Turnpike. On the New Jersey side, Interstate 80 connects the Delaware Water Gap Toll Bridge to the George Washington Bridge.

The toll bridge, built by the Commission and opened on December 16, 1953, is a twin, multi-span (17 spans EB and 16 spans WB), steel riveted plate girder bridge approximately 2465 feet in total length. The dual roadways are each 28 feet wide from curb to curb, carrying two lanes of traffic each, and are separated by an aluminum barrier. A 5 foot wide sidewalk is located on the south side of the eastbound roadway, separated from the travel lanes with a concrete barrier. The substructure units consist of reinforced concrete bin abutments and piers. The piers also have partial granite stone facing. The speed limit posted at both approach roadways is 55 mph.

Major rehabilitation work was completed in 1989. The rehabilitation work included reconstruction of the toll plaza for one-way toll collection in the westbound direction (8 total lanes), deck replacement, construction of a New Jersey approach pedestrian walkway, toll plaza access tunnel, and miscellaneous pavement replacement. Other work performed under this contract included the installation of the aluminum median barrier, lighting and signage.

### **DELAWARE WATER GAP TOLL BRIDGE FACILITY AND GROUNDS**

The one-way toll plaza, located at the Pennsylvania approach has eight (8) toll lanes. All tollbooths are erected on concrete islands and are protected by an overhead canopy.

A ½ mile section of Interstate 80 east of the bridge was resurfaced in 2007 under Contract No T-492A.

The 2007 inspection included the eastbound and westbound main river bridges and the facility and grounds.

## **SIGNIFICANT FINDINGS**

### **DELAWARE WATER GAP TOLL BRIDGE (EASTBOUND)**

(17 span, riveted steel multi-girder)

The structure is in overall satisfactory condition.

The deck is in satisfactory condition. The cast-in-place microsilica concrete (deck slab) roadway and sidewalk deck, installed in 1989, exhibits numerous fine to medium transverse cracks and longitudinal cracks over the stringer locations. These cracks were formed during the initial pouring procedures. Cores taken in 1989 and again in 1996 indicated that cracks to have grown to a maximum width of 1/16" at some locations, and also showed no signs of corrosion to the reinforcement. This inspection revealed minor or no rust to the stay-in-place forms at the underside of the deck and no significant changes to the cracks on the surface of the deck. The cracks noted at the top of deck do not pose a structural concern at this time. The deck joints were rebuilt during the deck replacement in 1989 and are consist of steel plates welded to the original finger joints, combined with steel angle armoring and strip seals. The "Seva" patch material, used as the joint header material, is deteriorated at numerous locations throughout. The material is settled, cracked, and spalled, exposing the steel plates and steel angle armoring below. Few deck joints in the eastbound roadway are slightly vertically offset between spans resulting in minor plow catch damage. All the deck joints also exhibit moderate debris accumulation in the joint opening.

The approach roadway in Pennsylvania is in satisfactory condition. Fine to medium map cracks were noted at the approaches. Random cracks and small spalls were also noted at the approaches.

The superstructure is in good condition. The north girder exhibits isolated areas of minor material loss to the bottom flange throughout all spans. Several rocker bearings exhibit moderate to heavy rust at the bearings and keeper angles. Minor material loss and missing retaining bolts were noted at a few of the keeper angles. Few bearings are missing shoulder bolts. No lateral movement of the bearings was noted at the time of inspection. The paint at the fascia beams is in fair condition, while the paint at the interior beams is in good condition.

The substructure is in satisfactory condition. The substructure exhibits areas of spall repair and epoxy coating that was performed by Maintenance forces. Numerous areas of spalled and hollow concrete were noted throughout the substructure. Some of these areas have been removed by maintenance forces and the exposed reinforcement was epoxy coated. The footing at Pier 8 is exposed.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure for the eastbound roadway was found to be in satisfactory condition due minor deterioration including spalls with exposed reinforcement on the concrete pier caps and stems and the exposure of the footings with no undermining noted.

DELAWARE WATER GAP TOLL BRIDGE (WESTBOUND)  
(16 span, riveted steel multi-girder)

The structure is in overall satisfactory condition.

The deck is in satisfactory condition. The defects noted at the westbound roadway deck are similar to the eastbound roadway deck. The deck joints in the westbound roadway exhibit ½” to ¾” vertical offset resulting in plow catch damage at the east and west abutments and Pier 3. The aluminum median barrier exhibits scrape marks and a large gouge (6’ long by 1’ high) was noted in Span 1.

The approach roadway is in satisfactory condition. Fine to medium map cracks were noted at the approaches. A large spall was noted at the east approach slab.

The superstructure is in satisfactory condition. The defects noted at the westbound superstructure are similar to the eastbound superstructure.

The substructure is in good condition.

An underwater inspection was performed in 2006 under Contract No. C-467D. The substructure for the westbound roadway was found to be in good condition with only minor defects noted.

The results of the recently completed Northerly Crossing Corridor Congestion Mitigation Study indicate that the I-80 DWG Bridge currently operates at a level of service F during the weekday PM peak period. This report recommends that the DRJTBC proceed with an Open Road Tolling project at the I-80 DWG Bridge to help increase the throughput capacity at the I-80 bridge. Included in the ORT is the addition of a third lane in the westbound direction on the northern section of the bridge approaching the toll plaza. Widening is proposed for a length of approximately 800 feet approaching the toll plaza. This concept will require the widening of the bridge in the westbound direction. These improvements are proposed under Contract No. T-440.

DELAWARE WATER GAP TOLL BRIDGE FACILITY AND GROUNDS

The District 3 superintendent has requested that the existing maintenance garage facility be expanded. The maintenance garage currently does not have bathroom, locker room or lunchroom facilities, which are present at the other Commission toll facilities. Several of the Commission vehicles are parked outside in the open areas a distance away from the facility equipment. A training/meeting room for the district is requested. Presently meetings take place in the garage area and are disrupted by outside activity.

Maintenance has requested to replace HVAC system because it is not functioning properly. Maintenance has also requested to replace streetlight electrical panels at three locations. The metal cabinets are corroded and are difficult to open and close.

Maintenance has indicated that the salt storage capacity is insufficient for the entire district.

## **CONCLUSIONS**

### **DELAWARE WATER GAP TOLL BRIDGE (EASTBOUND)**

The structure is in overall satisfactory condition. The bearings should be cleaned and painted throughout the structure. Replace the bolts at locations where keeper angle and shoulder bolts are missing. The Commission should consider replacement of these bearings with elastomeric bearings. The hollow concrete areas and spalls throughout the substructure should be repaired with concrete. The north and south fascia girders and the end 6 feet of all girders should be painted. Install riprap around the exposed footing at Pier 8. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

***Contract No. C-472 Delaware Water Gap Toll Bridge Bearing Remediation and Deck Study is underway and addresses the above items***

***The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.***

### **DELAWARE WATER GAP TOLL BRIDGE (WESTBOUND)**

The structure is in overall satisfactory condition. The bearings should be cleaned and painted throughout the structure. Replace the bolts at locations where keeper angle and shoulder bolts are missing. The Commission should consider replacement of these bearings with elastomeric bearings. The north and south fascia girders and the end 6 feet of all girders should be painted. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

***Contract No. C-472 Delaware Water Gap Toll Bridge Bearing Remediation and Deck Study is underway and addresses the above items***

***The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.***

### **DELAWARE WATER GAP TOLL BRIDGE FACILITY AND GROUNDS**

A study for the expansion and modifications of maintenance garage is recommended.

A study should be performed on the HVAC controls to determine what components need upgrading, or if entire system should be upgraded.

A study should be performed on the electrical panels for the streetlights to determine which units need to be replaced and to specify the replacement item.

A study should be performed to determine the district's overall deicing requirements. The study should include but not limited to determining salt storage capacity, storage location, type of storage and any additional deicing capabilities.

For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

# Delaware Water Gap Toll Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

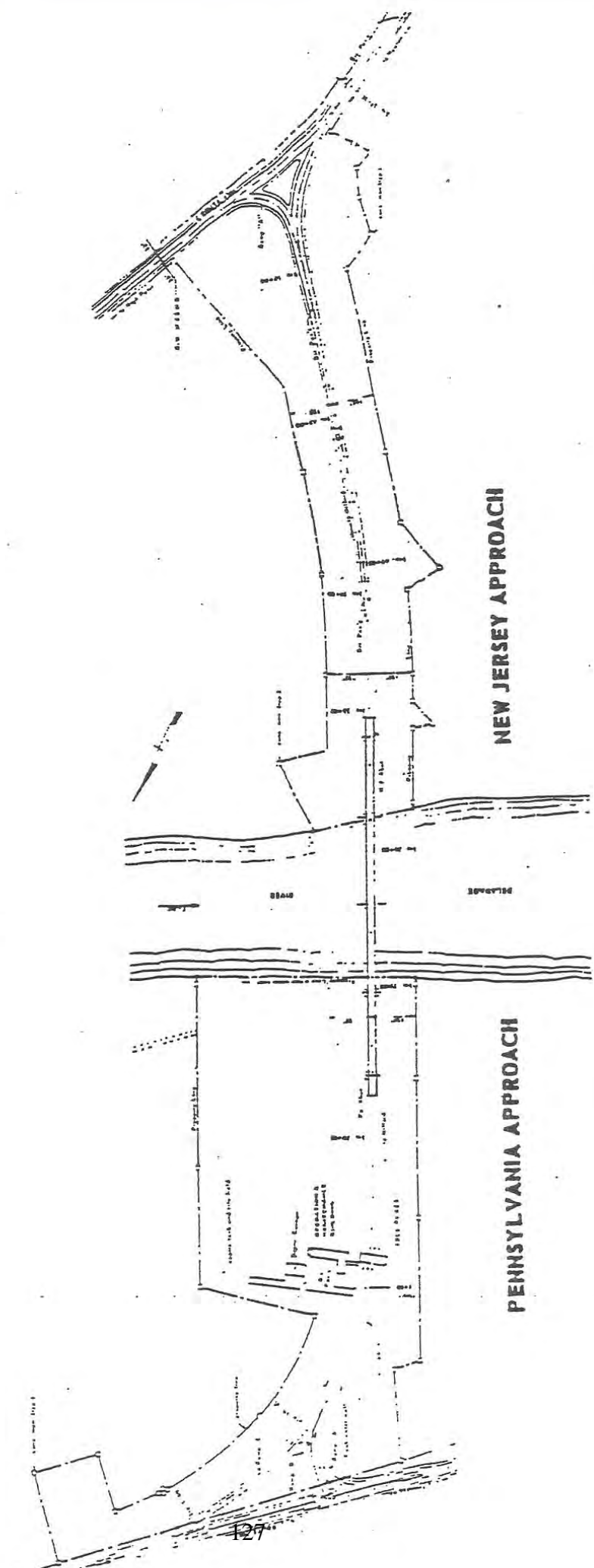
Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
395B	I-80 / DWG Task Force Consultant	\$560,000	\$0	\$0
440A	Phase 1 DWG Toll Bridge ORT Study	\$500,000	\$400,000	\$0
440B	Phase 1 - DWG Toll Bridge ORT Implementation	\$39,176,000	\$3,288,000	\$10,679,000
440C	DWG Toll Bridge Improvements	\$140,994,000	\$0	\$1,633,000
472	DWG TB Bearing Remediation and Deck Study	\$12,523,000	\$4,914,000	\$7,371,000
<b>BRIDGES SUB TOTAL</b>		<b>\$193,753,000</b>	<b>\$8,602,000</b>	<b>\$19,683,000</b>
<b><u>Facilities and Grounds</u></b>				
DWGTB	Miscellaneous Projects (less than \$100k each)	\$649,000	\$50,000	\$52,000
474	DWG Space Utilization Study	\$101,000	\$75,000	\$26,000
513	DWG HVAC Upgrade	\$562,000	\$60,000	\$502,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$1,312,000</b>	<b>\$185,000</b>	<b>\$580,000</b>
<b>TOTAL COST</b>		<b>\$195,065,000</b>	<b>\$8,787,000</b>	<b>\$20,263,000</b>



***MILFORD-MONTAGUE***  
***TOLL BRIDGE FACILITY***  
***(Structure No. 400)***

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF PIKE  
TOWN OF MILFORD

STATE OF NEW JERSEY  
COUNTY OF SUSSEX  
TOWN OF MONTAGUE



MILFORD - MONTAGUE TOLL BRIDGE

## **GENERAL**

### **MILFORD-MONTAGUE TOLL BRIDGE**

(4 span, continuous, steel deck truss)

The Milford-Montague Toll Bridge (Structure No. 400) is the northern-most toll bridge across the Delaware River under the Commission's jurisdiction. Located seven miles south of the New Jersey/New York state line, the bridge connects US Route 206 at Montague, New Jersey to US Routes 6 and 209 at Milford, Pennsylvania.

The toll bridge, built by the Commission and opened to traffic on December 30, 1953, is a four span continuous steel deck truss structure with an approximate total length of 1,150 feet. The curb to curb width of the roadway is 27'-6" and carries one lane of traffic in each direction with a posted speed limit on the New Jersey approach of 40 mph. Cantilevered from the north truss is a 4'-0" wide sidewalk. The substructure units consist of reinforced concrete abutments and piers with granite stone facing on the piers.

In 1982 the original deck was replaced with precast concrete deck panels and stringers were relocated (fifth stringer added) for the addition of the cantilevered sidewalk. Also included in the 1982 rehabilitation project were modifications to the substructures and bridge lighting, and the addition of the aluminum safety barriers. In 1998, the New Jersey approach was milled and repaved by contract.

Contract No. T-430A, a rehabilitation contract for the Milford-Montague Toll Bridge, is currently underway with an anticipated construction start date of Spring 2008. The proposed improvements to the structure are:

- Concrete deck replacement
- Superstructure steel repairs
- Cleaning and painting of the superstructure
- Substructure repairs
- Slope protection and erosion damage repairs
- Approach roadway repaving
- Drainage improvements
- Safety feature improvements (signage, guide rails, etc.)
- Toll plaza rehabilitation

### **MILFORD-MONTAGUE TOLL BRIDGE FACILITIES AND GROUNDS**

At the Pennsylvania approach, there are three westbound toll collection lanes that are protected by a canopy and founded on concrete islands.

Maintenance forces completed the conversion of the Pennsylvania toll plaza in 1999, converting it to one-way tolls. This project included removing two toll booths and their respective lanes and canopy, reconstructing slabs, installing median barriers, and impact attenuators on the ends of the median barrier.

The 2007 inspection included the main river bridge and the facility and grounds.

## **SIGNIFICANT FINDINGS**

### **MILFORD-MONTAGUE TOLL BRIDGE**

(4 span, continuous, steel deck truss)

The structure is in overall satisfactory condition.

The deck is in fair condition. Several of the precast concrete deck panels exhibit large spalls with exposed epoxy coated reinforcement and few incipient spalls at the underside of the deck. Transverse cracks with efflorescence were noted beneath the transverse deck panel joints. The deck slab expansion joints, located at the piers and abutments, exhibited signs of water leakage. The east abutment finger joint is misaligned with the east approach side ½" higher causing a potential plow catch. At several locations, the bridge scupper pipes are located directly above the truss bottom chord members. No deck joint drainage trough is present below the west abutment finger joint.

The approach roadway is in good condition.

The superstructure is in satisfactory condition. Heavy rust with localized material loss was noted below at the top and bottom flange of the center stringer throughout and locally on the adjacent stringers. Several floorbeams also exhibited material loss to the web at the connection with Stringer 3. The top and bottom chord members exhibit peeling paint with light to moderate surface rust throughout and isolated locations of minor pitting. Several gusset plate connections and end diaphragms exhibit moderate to heavy rust, few with material losses, due to drainage pipes located above the members. No deck joint drainage trough is present below the west abutment finger joint. The water drains directly onto the bridge seat and down the abutment walls causing the bearings and steel below the joint to be moderately rusted.

The substructure is in satisfactory condition. Areas of fine map cracking were noted throughout both abutments and medium transverse cracks were noted at the concrete exposed portion of the pier caps. The granite stone facing at the piers exhibited random areas of missing mortar.

An underwater inspection was performed in 2006 under Contract No. C-467D. The underwater components of the substructure were noted to be in good condition with only minor defects noted. No undermining was noted during the inspection, although the Pier 2 footing was found to be partially exposed.

### **MILFORD-MONTAGUE TOLL BRIDGE FACILITIES AND GROUNDS**

The Pennsylvania approach slab, just east of the toll plaza, is severely deteriorated with numerous wide cracks and medium to large spalls throughout. The pavement relief joint is cracked and spalled.

The concrete slabs west of the toll plaza, were rehabilitated and found to be in good condition.

Contract No. T-430A includes the rehabilitation of the toll plaza and approaches.

The water storage and distribution system for the facility is not providing sufficient pressure on occasions. Fire hydrants are located at a distance from facilities. This creates reduced fire protection for the facility and is below the capacity of other toll facilities. Contract No. T-432A, completed in 2007, provided a direct connection for municipal water through the Milford Water Authority.

The HVAC system is showing signs of the age and it is not functioning satisfactorily.

The maintenance facility asphalt pavement parking lot is in fair to poor condition with uneven pavement and wide cracking throughout. The sidewalks have random cracking and the curbs are spalled.

The paint system is failing on the steel cantilever sign structure with multiple areas of light rust. Maintenance reports that the sign panels reflectivity is significantly reduced.

The present salt storage capacity is insufficient for the entire district in the event of a major snowstorm.

## **CONCLUSIONS**

### **MILFORD-MONTAGUE TOLL BRIDGE**

The structure is in overall satisfactory condition. No significant work is recommended due to Contract No. T-430A, a rehabilitation contract for the Milford-Montague Toll Bridge, which is currently underway with an anticipated substantial completion date by Summer 2009. For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

***The Commission has undertaken a Substructure & Scour Remediation project in Districts 1, 2 & 3 under Contract No. C-476A. This project is currently in the design phase and includes this bridge.***

### **MILFORD-MONTAGUE TOLL BRIDGE FACILITIES AND GROUNDS**

The toll plaza, approach roadway, and sign structures will be rehabilitated under Contract No. T-430A.

The parking lot should be rehabilitated.

Construction of a new waterline connecting the facility to the Milford Water Authority has been completed under Contract No. T-432A. This resolved the problem of water storage and the inadequate water pressure at the facility.

A study should be performed on the HVAC controls to determine what components need upgrading, or if the entire system should be upgraded.

A study should be performed to determine the district's overall deicing requirements. The study should include but not limited to determining salt storage capacity, storage location, type of storage and any additional deicing capabilities.

For a list of maintenance repair items, see the *Eleventh Annual Maintenance Report*.

# Milford-Montague Toll Bridge

## ESTIMATED COST OF RECOMMENDED IMPROVEMENTS FUNDED BY THE GENERAL RESERVE FUND

Contract No.	Bridge and Roadway Recommended Improvements	Program Cost	General Reserve Fund	
			2009	2010
<b><u>Bridges, Roadways, Sidewalks, and Approaches</u></b>				
430	M-M Toll Bridge Rehabilitation	\$19,078,000	\$7,227,000	\$0
<b>BRIDGES SUB TOTAL</b>		<b>\$19,078,000</b>	<b>\$7,227,000</b>	<b>\$0</b>
<b><u>Facilities and Grounds</u></b>				
MMTB	Miscellaneous Projects (less than \$100k each)	\$453,000	\$35,000	\$37,000
432	M-M Upgrade Water Supply	\$755,000	\$92,000	\$0
514	M-M HVAC Upgrade	\$369,000	\$52,000	\$317,000
<b>FACILITIES AND GROUNDS SUB TOTAL</b>		<b>\$1,577,000</b>	<b>\$179,000</b>	<b>\$354,000</b>
<b>TOTAL COST</b>		<b>\$20,655,000</b>	<b>\$7,406,000</b>	<b>\$354,000</b>





## *VEHICLES AND EQUIPMENT*

The following section identifies vehicles and equipment that have reached their useful life and are in need of being replaced. The section also recommends the addition of vehicles and equipment that will aid the Commission with daily operations.

# VEHICLES AND EQUIPMENT

## **TRENTON-MORRISVILLE TOLL BRIDGE**

### **Vehicular and Maintenance Equipment**

Recommended New Units	Items To Be Replaced, Sold, or *Transferred	Estimated Purchase	Estimated Sale	Estimated Net
Small Tools/Misc. Equipment	New Items	\$5,000	\$0	\$5,000
2009 Hybrid SUV	*2003 Ford Crown Victoria Ser. No. 2FAHP71WX3X1556959 Lic. No. MG20553A Mileage 35,569 TM 10004	\$30,000	\$0	\$30,000
2009 Hybrid SUV	2002 Chevrolet Blazer, 4WD Ser. No. 1GNDT13W02K233650 Lic. No. SG21286 Mileage 45,122 TM 11010	\$30,000	\$4,000	\$26,000
ETC Transponders	New Items	\$52,500	\$0	\$52,500
2009 Roadway Sweeper	1996 Elgin Whirlwind Roadway Sweeper Ser. No. 1FDXH70C9TVA29963 Lic. No. SG12036 Mileage 33,839 TM 20047	\$210,000	\$30,000	\$180,000
	2002 Gerber Scientific Odyssey Signmaker Ser. No. C010209004 Lic. No. N/A Mileage N/A TM 40004	\$30,000	\$2,000	\$28,000

\*Transfer to NH-L as Commission Pool Vehicle

<b>Estimated Total</b>	<b>\$357,500</b>	<b>\$36,000</b>	<b>\$321,500</b>
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VEHICLES AND EQUIPMENT

**NEW HOPE-LAMBERTVILLE TOLL BRIDGE**

**Vehicular and Maintenance Equipment**

Recommended New Units	Items To Be Replaced, Sold, or Transferred	Estimated Purchase	Estimated Sale	Estimated Net
Small Tools/Misc. Equipment	New Items	\$5,000	\$0	\$5,000
ETC Transponders	New Items	\$52,500	\$0	\$52,500
Upgrade Print Shop Equip.	New Items	\$25,000	\$0	\$25,000
2009 Ford F-250 4x4 Super Duty	New Item	\$35,000	\$0	\$35,000
2009 Portable VMS Sign with Radar	New Item	\$18,000	\$0	\$18,000
<b>Estimated Total</b>		<b>\$135,500</b>	<b>\$0</b>	<b>\$135,500</b>

VEHICLES AND EQUIPMENT

**SOUTHERN DIVISION TOLL-SUPPORTED BRIDGES**

**Vehicular and Maintenance Equipment**

Recommended New Units	Items To Be Replaced, Sold, or Transferred	Estimated Purchase	Estimated Sale	Estimated Net
Small Tools/Misc. Equipment	New Items	\$5,000	\$0	\$5,000
<b>Estimated Total</b>		<b>\$5,000</b>	<b>\$0</b>	<b>\$5,000</b>

# VEHICLES AND EQUIPMENT

## **INTERSTATE 78 TOLL BRIDGE**

### **Vehicular and Maintenance Equipment**

Recommended New Units	Items To Be Replaced, Sold, or Transferred	Estimated Purchase	Estimated Sale	Estimated Net
Small Tools/Misc. Equipment	New Items	\$5,000	\$0	\$5,000
ETC Transponders	New Items	\$52,500	\$0	\$52,500
Welcome Center Restroom Fixtures	Old Restroom Fixtures	\$60,000	\$0	\$60,000
2009 Aerial Lift Bucket Truck	1990 Aerial Lift Bucket Truck Ser. No. 1GDM7D1Y4LV509875 Lic. No. SGB23L Hours 1,067 Mileage 13,538 I78 20127	\$175,000	\$5,000	\$170,000
2009 Hybrid SUV	*2002 Chevrolet Blazer, 4WD Ser. No. 1GNDDT13X23K171663 Lic. No. SG21859 Mileage 46,947 I78 11001	\$30,000	\$0	\$30,000
Cab for John Deere Gator Tractor	New Item	\$5,500	\$0	\$5,500
*Transfer to NH-L as Commission Pool Vehicle				
<b>Estimated Total</b>		<b>\$328,000</b>	<b>\$5,000</b>	<b>\$323,000</b>

*2009 VEHICLES AND EQUIPMENT*

**EASTON-PHILLIPSBURG TOLL BRIDGE**

**Vehicular and Maintenance Equipment**

Recommended New Units	Items To Be Replaced, Sold, or Transferred	Estimated Purchase	Estimated Sale	Estimated Net
Small Tools/Misc. Equipment	New Items	\$5,000	\$0	\$5,000
ETC Transponders	New Items	\$52,500	\$0	\$52,500
Portable Crash Attenuator	New Item	\$25,000	\$0	\$25,000
Car/Truck Lift for Maintenance Garage	New Item	\$30,000	\$0	\$30,000
Salt Bin Roll-up Curtains (for two (2) salt bins)	New Item	\$16,000	\$0	\$16,000
Glare Screen System for Roadway	Glare Screens need Replacement	\$25,000	\$0	\$25,000
2009 Crew Cab 4x4 Pickup Truck	2002 F-250 SuperCab Pickup Ser. No. 1FTNX21F22EA45057 Lic. No. SG20769 Mileage 115,313 EP 12001	\$40,000	\$5,000	\$35,000
2009 Hybrid SUV	2001 Ford Crown Victoria Ser. No. 2FAFP73W61X206124 Lic. No. MG93923 Mileage 81,911 EP 10002	\$30,000	\$4,000	\$26,000
2009 Medium Dumptruck	*1997 Ford F800 Dump Truck Ser. No. 1FDXF80EXVVA16641 Lic. No. SG12123 Mileage 24,355 EP 15033	\$130,000	\$0	\$130,000
* Transfer to I-78				
<b>Estimated Total</b>		<b>\$353,500</b>	<b>\$9,000</b>	<b>\$344,500</b>

VEHICLES AND EQUIPMENT

**NORTHERN DIVISION TOLL-SUPPORTED BRIDGES**

**Vehicular and Maintenance Equipment**

Recommended New Units	Items To Be Replaced, Sold, or Transferred	Estimated Purchase	Estimated Sale	Estimated Net
Small Tools/Misc. Equipment	New Items	\$5,000	\$0	\$5,000
	<b>Estimated Total</b>	<b>\$5,000</b>	<b>\$0</b>	<b>\$5,000</b>

# VEHICLES AND EQUIPMENT

## **PORTLAND-COLUMBIA TOLL BRIDGE**

### **Vehicular and Maintenance Equipment**

Recommended New Units	Items To Be Replaced, Sold, or *Transferred	Estimated Purchase	Estimated Sale	Estimated Net
Small Tools/Misc. Equipment	New Items	\$5,000	\$0	\$5,000
ETC Transponders	New Items	\$52,500	\$0	\$52,500
2009 Ford F-550 Dump Truck	*1999 Ford F-550 4x4 Dump Truck Ser. No. 1FDAF57F3XEC46737 Lic. No. SG14823 Mileage 29,054	\$45,000	\$0	\$45,000
* Transfer to M-M				
<b>Estimated Total</b>		<b>\$102,500</b>	<b>\$0</b>	<b>\$102,500</b>



VEHICLES AND EQUIPMENT

**DELAWARE WATER GAP TOLL BRIDGE**

**Vehicular and Maintenance Equipment**

Recommended New Units	Items To Be Replaced, Sold, or Transferred	Estimated Purchase	Estimated Sale	Estimated Net
Small Tools/Misc. Equipment	New Items	\$5,000	\$0	\$5,000
ETC Transponders	New Items	\$52,500	\$0	\$52,500
<b>Estimated Total</b>		<b>\$57,500</b>	<b>\$0</b>	<b>\$57,500</b>

VEHICLES AND EQUIPMENT

**MILFORD-MONTAGUE TOLL BRIDGE**

**Vehicular and Maintenance Equipment**

Recommended New Units	Items To Be Replaced, Sold, or Transferred	Estimated Purchase	Estimated Sale	Estimated Net
Small Tools/Misc. Equipment	New Items	\$5,000	\$0	\$5,000
ETC Transponders	New Items	\$52,500	\$0	\$52,500
<b>Estimated Total</b>		<b>\$57,500</b>	<b>\$0</b>	<b>\$57,500</b>

2009 VEHICLES AND EQUIPMENT

**SUMMARY BY DISTRICT**

LOCATION	Estimated Pur. Price	Estimated Sale Price	Estimated Net Price
Trenton-Morrisville	\$357,500	\$36,000	\$321,500
New Hope-Lambertville	\$135,500	\$0	\$135,500
Southern Div. Toll-Supported	\$5,000	\$0	\$5,000
<i>District 1 Total</i>	<b>\$498,000</b>	<b>\$36,000</b>	<b>\$462,000</b>
Interstate 78	\$328,000	\$5,000	\$323,000
Easton-Phillipsburg	\$353,500	\$9,000	\$344,500
Northern Div. Toll-Supported	\$5,000	\$0	\$5,000
<i>District 2 Total</i>	<b>\$686,500</b>	<b>\$14,000</b>	<b>\$672,500</b>
Portland-Columbia	\$102,500	\$0	\$102,500
Delaware Water Gap	\$57,500	\$0	\$57,500
Milford-Montague	\$57,500	\$0	\$57,500
<i>District 3 Total</i>	<b>\$217,500</b>	<b>\$0</b>	<b>\$217,500</b>
<b>TOTAL</b>	<b>\$1,402,000</b>	<b>\$50,000</b>	<b>\$1,352,000</b>

**2009 VEHICLES & EQUIPMENT \$1,402,000**



## 2009-2010 CAPITAL PLAN ESTIMATED EXPENDITURES



### SUMMARY OF EXPENDITURES

#### CAPITAL PROGRAM ESTIMATED EXPENDITURES

	<i>2009</i>	<i>2010</i>
Toll Bridge Facilities	\$85,161,000	\$33,343,000
Toll-Supported Bridge Facilities	\$21,323,000	\$114,091,000
Commission Initiatives & System-Wide Projects	\$34,706,000	\$16,497,000

<i>Subtotal</i>	<i>\$141,190,000</i>	<i>\$163,931,000</i>
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#### VEHICLE / EQUIPMENT GROSS PURCHASES

	<i>2009</i>	<i>2010</i>
Vehicular and Maintenance Equipment	\$1,402,000	\$1,500,000

<i>Subtotal</i>	<i>\$1,402,000</i>	<i>\$1,500,000</i>
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	<i>2009</i>	<i>2010</i>
<b><i>TOTAL 2009 - 2010 CAPITAL PLAN</i></b>	<b><i><u>\$142,592,000</u></i></b>	<b><i><u>\$165,431,000</u></i></b>

## 2009-2010 CAPITAL PLAN ESTIMATED EXPENDITURES



<b><u>TOLL BRIDGES</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>
<u>Trenton-Morrisville</u>	\$29,840,000	\$2,021,000
<u>New Hope-Lambertville Toll-Supported Bridge</u>	\$5,564,000	\$499,000
<u>Interstate 78</u>	\$32,141,000	\$8,556,000
<u>Easton-Phillipsburg</u>	\$573,000	\$1,315,000
<u>Portland-Columbia</u>	\$850,000	\$335,000
<u>Delaware Water Gap</u>	\$8,787,000	\$20,263,000
<u>Milford-Montague</u>	\$7,406,000	\$354,000
<b><i>Subtotal</i></b>	<b><i>\$85,161,000</i></b>	<b><i>\$33,343,000</i></b>
<b><u>TOLL-SUPPORTED BRIDGES</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>
<u>Lower Trenton</u>	\$10,000	\$11,000
<u>Calhoun Street</u>	\$588,000	\$12,607,000
<u>Scudder Falls</u>	\$17,149,000	\$79,890,000
<u>Washington Crossing</u>	\$1,310,000	\$1,978,000
<u>New Hope-Lambertville</u>	\$20,000	\$11,000
<u>Centre Bridge-Stockton</u>	\$5,000	\$6,000
<u>Lumberville-Raven Rock Pedestrian Bridge</u>	\$456,000	\$1,838,000
<u>Uhlertown-Frenchtown</u>	\$30,000	\$32,000
<u>Upper Black Eddy-Milford</u>	\$767,000	\$10,198,000
<u>Riegelsville</u>	\$752,000	\$6,224,000
<u>Northampton Street</u>	\$50,000	\$52,000
<u>Riverton-Belvidere</u>	\$116,000	\$1,233,000
<u>Portland-Columbia</u>	\$70,000	\$11,000
<b><i>Subtotal</i></b>	<b><i>\$21,323,000</i></b>	<b><i>\$114,091,000</i></b>
<b><u>COMMISSION INITIATIVES &amp; SYSTEM-WIDE PROJECTS</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>
	<b><i>\$34,706,000</i></b>	<b><i>\$16,497,000</i></b>
<b><i>TOTAL CAPITAL PLAN EST. EXPENDITURES</i></b>	<b><i>\$141,190,000</i></b>	<b><i>\$163,931,000</i></b>

## 2009-2010 CAPITAL PLAN ESTIMATED EXPENDITURES



### BRIDGES, ROADWAYS, SIDEWALKS, & APPROACHES SUMMARY

<b><u>DISTRICT I</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>
<u>Trenton-Morrisville Toll Bridge</u>	\$28,465,000	\$271,000
<u>Lower Trenton Toll-Supported Bridge</u>	\$0	\$0
<u>Calhoun Street Toll-Supported Bridge</u>	\$578,000	\$12,596,000
<u>Scudder Falls Toll-Supported Bridge</u>	\$17,139,000	\$79,879,000
<u>Washington Crossing Toll-Supported Bridge</u>	\$1,300,000	\$1,967,000
<u>New Hope-Lambertville Toll-Supported Bridge</u>	\$0	\$0
<u>New Hope Lambertville Toll Bridge</u>	\$5,266,000	\$0
<u>Centre Bridge-Stockton Toll-Supported Bridge</u>	\$0	\$0
<u>Lumberville-Raven Rock Pedestrian Bridge</u>	\$446,000	\$1,827,000
<b><i>District I Total</i></b>	<b><i>\$53,194,000</i></b>	<b><i>\$96,540,000</i></b>
<b><u>DISTRICT II</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>
<u>Uhlerstown-Frenchtown Toll-Supported Bridge</u>	\$0	\$0
<u>Upper Black Eddy-Milford Toll-Supported Bridge</u>	\$752,000	\$10,182,000
<u>Riegelsville Toll-Supported Bridge</u>	\$742,000	\$6,213,000
<u>Interstate 78 Toll Bridge</u>	\$32,091,000	\$8,220,000
<u>Northampton Street Toll-Supported Bridge</u>	\$0	\$0
<u>Easton-Phillipsburg Toll Bridge</u>	\$334,000	\$787,000
<u>Riverton-Belvidere Toll-Supported Bridge</u>	\$111,000	\$1,227,000
<b><i>District II Total</i></b>	<b><i>\$34,030,000</i></b>	<b><i>\$26,629,000</i></b>

## 2009-2010 CAPITAL PLAN ESTIMATED EXPENDITURES



### BRIDGES, ROADWAYS, SIDEWALKS, & APPROACHES SUMMARY

<u><b>DISTRICT III</b></u>	<u><b>2009</b></u>	<u><b>2010</b></u>
<u>Portland-Columbia Toll Bridge</u>	\$830,000	\$236,000
<u>Portland-Columbia Pedestrian Bridge</u>	\$60,000	\$0
<u>Delaware Water Gap Toll Bridge</u>	\$8,602,000	\$19,683,000
<u>Milford-Montague Toll Bridge</u>	\$7,227,000	\$0
<b>District III Total</b>	<b>\$16,719,000</b>	<b>\$19,919,000</b>

	<b>2009</b>	<b>2010</b>
<b>BRIDGES, ROADWAYS, SIDEWALKS &amp; APPROACHES TOTAL</b>	<b>\$103,943,000</b>	<b>\$143,088,000</b>

### FACILITIES AND GROUNDS SUMMARY

<u><b>DISTRICT I</b></u>	<u><b>2009</b></u>	<u><b>2010</b></u>
<u>Trenton-Morrisville Toll Bridge</u>	\$1,375,000	\$1,750,000
<u>Lower Trenton Toll-Supported Bridge</u>	\$10,000	\$11,000
<u>Calhoun Street Toll-Supported Bridge</u>	\$10,000	\$11,000
<u>Scudder Falls Toll-Supported Bridge</u>	\$10,000	\$11,000
<u>Washington Crossing Toll-Supported Bridge</u>	\$10,000	\$11,000
<u>New Hope-Lambertville Toll-Supported Bridge</u>	\$20,000	\$11,000
<u>New Hope Lambertville Toll Bridge</u>	\$298,000	\$499,000
<u>Centre Bridge-Stockton Toll-Supported Bridge</u>	\$5,000	\$6,000
<u>Lumberville-Raven Rock Pedestrian Bridge</u>	\$10,000	\$11,000
<b>District I Total</b>	<b>\$1,748,000</b>	<b>\$2,321,000</b>



## 2009-2010 CAPITAL PLAN ESTIMATED EXPENDITURES



### FACILITIES AND GROUNDS SUMMARY

<b><u>DISTRICT II</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>
<u>Uhlerstown-Frenchtown Toll-Supported Bridge</u>	\$30,000	\$32,000
<u>Upper Black Eddy-Milford Toll-Supported Bridge</u>	\$15,000	\$16,000
<u>Riegelsville Toll-Supported Bridge</u>	\$10,000	\$11,000
<u>Interstate 78 Toll Bridge</u>	\$50,000	\$336,000
<u>Northampton Street Toll-Supported Bridge</u>	\$50,000	\$52,000
<u>Easton-Phillipsburg Toll Bridge</u>	\$239,000	\$528,000
<u>Riverton-Belvidere Toll-Supported Bridge</u>	\$5,000	\$6,000
<b><i>District II Total</i></b>	<b><i>\$399,000</i></b>	<b><i>\$981,000</i></b>

### FACILITIES AND GROUNDS SUMMARY

<b><u>DISTRICT III</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>
<u>Portland-Columbia Toll Bridge</u>	\$20,000	\$99,000
<u>Portland-Columbia Pedestrian Bridge</u>	\$10,000	\$11,000
<u>Delaware Water Gap Toll Bridge</u>	\$185,000	\$580,000
<u>Milford-Montague Toll Bridge</u>	\$179,000	\$354,000
<b><i>District III Total</i></b>	<b><i>\$394,000</i></b>	<b><i>\$1,044,000</i></b>

	<b><u>2009</u></b>	<b><u>2010</u></b>
<b><i>FACILITIES AND GROUNDS TOTAL</i></b>	<b><i>\$2,541,000</i></b>	<b><i>\$4,346,000</i></b>

## 2009-2010 CAPITAL PLAN ESTIMATED EXPENDITURES



### EQUIPMENT PURCHASES

#### 2009 VEHICLE & EQUIPMENT PURCHASES

<u>Toll Facility</u>	<u>Estimated Purchase Price of New Units</u>	<u>Estimated Sell Price of Used Units</u>	<u>Estimated Net Cost</u>
Trenton-Morrisville	\$357,500	\$36,000	\$321,500
New Hope-Lambertville	\$135,500	\$0	\$135,500
Interstate Route 78	\$328,000	\$5,000	\$323,000
Easton-Phillipsburg	\$353,500	\$9,000	\$344,500
Portland-Columbia	\$102,500	\$0	\$102,500
Delaware Water Gap	\$57,500	\$0	\$57,500
Milford-Montague	\$57,500	\$0	\$57,500
Southern - Toll-Supported Bridges	\$5,000	\$0	\$5,000
Northern - Toll-Supported Bridges	\$5,000	\$0	\$5,000
	<u>\$1,402,000</u>	<u>\$50,000</u>	<u>\$1,352,000</u>

***TOTAL 2009 GROSS VEHICLE & EQUIPMENT PURCHASES***

**\$1,402,000**

***ESTIMATED 2010 GROSS VEHICLE & EQUIPMENT PURCHASES\****

**\$1,500,000**

*\*The \$1.5M 2010 Vehicle & Equipment Expense is a Planned Budget Amount. 2009 Vehicle & Equipment Expense are based on the "actual" estimates shown in the "Vehicles and Equipment" section of the 2008 Annual Inspection Report.*

## ***SCHEDULE OF INSURANCE***

### ***I. CURRENT SCHEDULE OF INSURANCE (2009)***

The Delaware River Joint Toll Bridge Commission currently has in effect the following principle types and amounts of insurance coverage:

#### **A. General Liability**

\$	2,000,000	General Aggregate Limit
\$	2,000,000	Products/Completed Operations Aggregate Limit
\$	1,000,000	Personal/Advertising Injury Limit
\$	1,000,000	Each Occurrence Limit
\$	300,000	Fire Damage Limit, Any One Fire
\$	15,000	Medical Expense Limit, Any One Person

The above General Liability limits apply for all bridges (Toll and Toll-Supported Bridges).

The above General Liability limits apply per each location.

Coverage includes Independent Contractors, Medical Payments, Contractual Liability, Fire Damage, Legal Liability, Employees as Additional Insured, Host Liquor Liability, Incidental Medical Malpractice, Broad Form Property Damage Liability, Non-owned Watercraft Liability (under 26ft), Limited Worldwide Products Liability and Extended Bodily Injury Liability.

#### **B. Commercial Automobile Liability**

\$	1,000,000	Bodily Injury/Property Damage Combined Single Limit, Each Accident
\$	35,000	Uninsured/Underinsured Motorist Coverage (PA & NJ) (\$1,000,000 applies to PPV's, \$35,000 applies to all other vehicles)
\$	50,000	Garagekeepers Liability
(Lesser of ACV or Cost of Repair)		Hired Car Physical Damage Coverage

Deductible on Comprehensive and Collision

\$	500	Cost New Less than \$29,999
\$	1,000	Cost New \$30,000-\$49,999
\$	2,000	Cost New Greater Than 50,000

#### **C. Umbrella Liability**

\$	25,000,000	Each Occurrence, Annual Aggregate
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There is an excess umbrella policy with a \$25,000,000 limit. The total coverage of \$50,000,000 is inclusive of all Bridges, Vehicles, and Operations.

## ***SCHEDULE OF INSURANCE***

### **D. Building & Contents Insurance**

\$	1,000,000	Extra Expense
\$	10,000,000	Loss Limit Location #1
\$	5,000,000	Loss Limit Locations 2-7
\$	500,000	Unnamed Locations
\$	5,000	Deductible

(Additional sub-limits and deductibles apply)

Coverage extensions include: Debris Removal, Pollutant Cleanup and Removal, Newly Acquired Buildings and Personal Property, Personal Property of Others/Employees, Valuable papers-Cost of Research, Property Off Premises within 1,000 feet, Outdoor Property - Trees, Shrubs and Plants, Property in Transit (Special Form Only) and Fences and Signs.

### **E. Equipment Floater Limits (Included in Building Policy)**

\$	2,280,800	Specific Limits Apply Per Schedule
\$	240,756	Miscellaneous Unscheduled Tools
\$	1,000	Deductible

### **F. Bridge Property Coverage**

#### **Loss Limits:**

\$	50,000,000	Loss Limit – Primary
\$	50,000,000	Loss Limit – Excess of \$50,000,000 per Occurrence
\$	375,000,000	Loss Limit – Excess of \$100,000,000 per Occurrence

#### **Values:**

### **Toll Bridge Summary**

#### **Trenton-Morrisville Facility**

\$	24,100,000	Bridge
\$	18,100,000	Viaducts
\$	9,378,237	Use/Occupancy

#### **New Hope-Lambertville Facility**

\$	30,500,000	Bridge
\$	6,800,000	Viaducts
\$	2,374,689	Use/Occupancy

## ***SCHEDULE OF INSURANCE***

### Interstate Route 78 Facility

\$	34,300,000	Bridge
\$	26,100,000	Viaducts
\$	38,881,866	Use/Occupancy

### Easton-Phillipsburg Facility

\$	18,200,000	Bridge
\$	4,000,000	Viaducts
\$	9,404,786	Use/Occupancy

### Portland-Columbia Facility

\$	16,400,000	Bridge
\$	4,200,000	Viaducts
\$	1,737,063	Use/Occupancy

### Delaware Water Gap Facility

\$	45,000,000	Bridge
\$	26,881,266	Use/Occupancy

### Milford-Montague Facility

\$	12,100,000	Bridge
\$	1,206,526	Use/Occupancy

### **All Seven (7) Bridges**

\$	<b>180,600,000</b>	<b>Bridges</b>
\$	<b>59,200,000</b>	<b>Viaducts</b>
\$	<b>89,864,433</b>	<b>Use and Occupancy</b>
\$	<b>329,664,433</b>	<b><i>TOTAL (Toll Bridges)</i></b>

### **Toll-Supported Bridge Summary**

<u>Lower Trenton</u>	\$	14,100,000
<u>Calhoun Street</u>	\$	17,700,000
<u>Scudder Falls</u>	\$	54,100,000
<u>Washington Crossing</u>	\$	12,200,000
<u>New Hope-Lambertville</u>	\$	14,600,000
<u>Centre Bridge-Stockton</u>	\$	11,500,000
<u>Lumberville-Raven Rock</u>	\$	2,900,000
<u>Uhlerstown-Frenchtown</u>	\$	13,100,000
<u>Upper Black Eddy-Milford</u>	\$	10,000,000
<u>Riegelsville</u>	\$	8,600,000
<u>Northampton Street</u>	\$	12,200,000
<u>Riverton-Belvidere</u>	\$	9,500,000

## ***SCHEDULE OF INSURANCE***

<u>Portland-Columbia</u>	\$ 3,200,000
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**All Thirteen (13) Bridges      \$ 183,700,000**

**GRAND TOTAL: TWENTY (20) BRIDGES: \$513,364,433**

Use and Occupancy Deductible – 5 days, All other 1% of Loss (\$50,000 Minimum)

Flood Coverage - \$250,000,000 Annual Aggregate - Multiple Policies

Earthquake Coverage – \$150,000,000 Annual Aggregate - Multiple Policies

Boiler & Machinery Coverage Insured under separate policy

### **G. Public Officials / Employee Liability**

\$	10,000,000	Each Loss
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\$	10,000,000	Aggregate
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## Retention

\$ 50,000 Corporate Reimbursement

\$ 50,000 Entity Coverage

\$ 35,000 Employee Coverage

Excess policy provides additional \$10,000,000 Per Claim/Annual Aggregate

**H. Workers Compensation Coverage** - The Graham Company is not the broker for this coverage

## Statutory Benefits for Medical, Disability, Funeral Expenses and Rehabilitative Expenses

**\$500,000 Bodily Injury by Accident – Each Accident**

**\$500,000 Bodily Injury by Disease – Policy Limit**

**\$500,000 Bodily Injury by Disease – Each Employee**

## **I. Commercial Crime Coverage**

\$	10,000	Forgery or Alteration, \$1,000 deductible
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\$ 250,000	Money In-Out for Theft, Disappearance and Destruction, \$10,000 deductible
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\$ 5,000,000	Employee Dishonesty, \$50,000 Deductible
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Coverage includes all locations.

## ***SCHEDULE OF INSURANCE***

### ***II. INSURANCE REQUIREMENTS FOR 2009***

In accordance with Section 708 of the Bridge System Revenue Bond Resolution, the following types of insurance are required to be maintained by the Commission to the extent as reasonably obtainable:

#### **MULTI-RISK INSURANCE**

The Commission currently maintains insurance for full replacement of all twenty (20) Toll and Toll-Supported Bridges and their approach structures (viaducts). In 1999 the Commission supplemented the full insurance coverage for the thirteen (13) Toll-Supported Bridges. The full replacement costs are reviewed annually and updated accordingly to follow current inflation and construction costs.

TranSystems has re-assessed each of the twenty (20) Toll and Toll-Supported Bridges and their associated approach structures (viaducts) with respect to the structures replacement costs. Most of the bridges, when and if replaced, will be required to be re-constructed in accordance with current standards, codes and practices, in lieu of a replacement in kind. A simple cost per square foot (the overall bridge length multiplied by its overall width) was used in the development of replacement costs for all of the Toll and Toll-Supported Bridges and their approach structures (viaducts). Square foot unit costs may vary between bridges due to specific characteristics such as the need for deep foundations, feature crossed and aesthetics.

The 2008 Estimated Replacement Costs for the twenty Toll and Toll-Supported Bridges and their approach structures are listed below:

<u>TOLL FACILITY</u>		<u>BRIDGE</u>		<u>APPROACH STRUCTURES</u>
Trenton-Morrisville	\$	43,600,000	\$	20,400,000
New Hope-Lambertville	\$	43,000,000	\$	9,400,000
Interstate Route 78	\$	50,400,000	\$	33,600,000
Easton-Phillipsburg	\$	10,200,000	\$	10,700,000
Portland-Columbia	\$	18,400,000	\$	3,800,000
Delaware Water Gap	\$	68,000,000	\$	0
Milford-Montague	\$	15,600,000	\$	0
<i>SUBTOTALS</i>	\$	<i>249,200,000</i>	\$	<i>77,900,000</i>

<u>TOLL-SUPPORTED FACILITY</u>		<u>BRIDGE</u>		<u>APPROACH STRUCTURES</u>
Lower Trenton	\$	17,900,000	\$	0
Calhoun Street	\$	10,700,000	\$	0
Scudder Falls	\$	44,400,000	\$	5,600,000
Washington Crossing	\$	5,600,000	\$	0
New Hope-Lambertville	\$	8,900,000	\$	0
Centre Bridge-Stockton	\$	7,200,000	\$	700,000
Lumberville-Raven Rock *	\$	2,500,000	\$	0
Uhlerstown-Frenchtown	\$	7,100,000	\$	0
Upper Black Eddy-Milford	\$	6,300,000	\$	0
Riegelsville	\$	4,000,000	\$	0
Northampton Street	\$	7,500,000	\$	0
Riverton-Belvidere	\$	4,900,000	\$	0

## ***SCHEDULE OF INSURANCE***

Portland-Columbia *	\$	3,400,000	\$	0
<i>SUBTOTALS</i>	\$	<i>130,400,000</i>	\$	<i>6,300,000</i>

\* Pedestrian Bridge

**Total (All Bridges) Replacement Cost for 2008 = \$ 463,800,000**

### **USE AND OCCUPANCY INSURANCE**

The Commission currently maintains Use and Occupancy Insurance for all of its seven (7) Toll Facilities. The Commission has provided the anticipated 2009 revenues presented below.

<u>TOLL FACILITY</u>	<u>2009 ANTICIPATED REVENUE</u>
Trenton-Morrisville	\$ 8,882,610
New Hope-Lambertville	\$ 2,058,528
Interstate Route 78	\$ 36,300,475
Easton-Phillipsburg	\$ 9,105,203
Portland-Columbia	\$ 1,679,293
Delaware Water Gap	\$ 24,437,661
Milford-Montague	\$ 1,150,872
<b>(Total Toll Revenue)</b>	<b>\$ 83,614,642</b>
Interest on Investments	\$ 3,927,000
Other Income	\$ 389,000
<b>(TOTAL PROJECTED REVENUE - 2009)</b>	<b>\$ 87,930,642</b>

### **WAR-RISK INSURANCE**

The Commission does not maintain this type of insurance for any of its bridges, as it is not reasonably obtainable due to its excessive cost. However the Commission does maintain coverage for terrorism.

### **PUBLIC LIABILITY – PROPERTY DAMAGE – BODILY INJURY**

Public Liability and Property Damage are maintained by the Commission under its General Liability and Auto Liability insurance coverage, which provides a maximum coverage of \$1,000,000. In addition the Commission carries \$50,000,000 maximum coverage in Excess Liability Insurance on all Bridges, Vehicles and Operations and \$500,000 in Business Travel Accident Insurance.



## ***SCHEDULE OF INSURANCE***

### **BLANKET REAL AND PERSONAL PROPERTY INSURANCE- ADMINISTRATIVE & MAINTENANCE BUILDINGS, CONTENTS, TOLL BOOTHS, ETC.**

The Commission currently maintains Building and Contents Insurance in the amount of \$27,189,000. Estimated replacement costs for all Toll Facility Administration Buildings, Maintenance Buildings and Garages and Toll Plazas were recalculated, based upon the overall square-foot area of each facility originally calculated and increased by a factor of 1.5% and rounded. The estimated replacement costs for 2009 are as follows:

<u>LOCATION</u>	<u>2009 ESTIMATED REPLACEMENT VALUE</u>
Trenton-Morrisville	\$ 8,444,000
New Hope-Lambertville	\$ 3,485,000
Interstate 78	\$ 4,044,000
Easton-Phillipsburg	\$ 4,080,000
Portland-Columbia	\$ 1,641,000
Delaware Water Gap	\$ 3,696,000
Milford-Montague	\$ 2,293,000
Belvidere (Storage Bldg.)	\$ 256,000
New Hope Toll Supported (Garage)	\$ 180,000
15 Toll Supported Bridge Officer Shelters	\$ 217,000
Lumberville-Raven Rock (Bridge Tender house)	\$ 266,000
<b>TOTAL</b>	<b>\$ 28,602,000</b>

### **OTHER INSURANCE**

Following good business practice and conforming to the laws of the State of New Jersey and the Commonwealth of Pennsylvania, the Commission carries additional insurance to that which is required by the Bridge System Revenue Bond Resolution. Among this additional coverage is a \$10 million Public Officials Liability insurance.

## ***SCHEDULE OF INSURANCE***

### ***III. CONCLUSIONS AND RECOMMENDATIONS FOR 2009***

In general the Commission's overall insurance coverage is adequately provided; however, the amounts of the following coverage's should be adjusted:

- The Multi-Risk Insurance coverage should be adjusted for each Toll and Toll-Supported Bridge Facility to reflect the estimated 2009 bridge (and approach structure) replacement costs, as outlined above.
- The Use and Occupancy Insurance should be adjusted to reflect the estimated 2009 anticipated revenues in conformance with the Bridge System Revenue Bond Resolutions.
- The Blanket Building and Contents Insurance should be adjusted to reflect the 2009 estimated property replacement values published above.

## **PAINT CONDITION RATINGS**

- EXCELLENT** - No problems noted.
- GOOD** - Some minor problems, but paint is sound and functioning as intended to protect the metal surfaces.
- SATISFACTORY** - Surface or freckled rust has formed or is forming. The paint system may be chalking, peeling or showing signs of paint distress, but there is no exposure of metal.
- FAIR** - Surface or freckled rust is prevalent. There may be exposed metal and/or beginning signs of active corrosion, but there is little to no section loss of steel members.
- POOR** - The overall paint system has failed which has consequently caused corrosion and significant section loss to steel members. Exposed metal and/or corrosion is typical throughout the bridge. A new paint system is required.

NOTE: Paint system ratings for a bridge will be an overall condition. Although localized areas may exhibit a better or worse condition, the rating encompasses the majority of the bridge paint system for the entire bridge.

## **BRIDGE CONDITION RATINGS**

<b><u>EXCELLENT</u></b> -	New bridge.
<b><u>VERY GOOD</u></b> -	No problems noted.
<b><u>GOOD</u></b> -	Some minor problems.
<b><u>SATISFACTORY</u></b> -	Some minor deterioration of structural elements.
<b><u>FAIR</u></b> -	Minor section loss, deterioration, spalling and/or scour of primary structural elements.
<b><u>POOR</u></b> -	Advanced section loss, deterioration, spalling and/or scour of primary structural elements.
<b><u>SERIOUS</u></b> -	Seriously deteriorated primary structural elements.
<b><u>CRITICAL</u></b> -	Facility should be closed until repairs are performed.
<b><u>IMMENENT FAILURE</u></b> -	Facility is closed. Study of repairs is feasible.
<b><u>FAILED</u></b> -	Facility is closed and beyond repair.

NOTE: These condition ratings are used to describe the existing, in-place bridge as compared to its as-built condition or its posted weight restriction. These ratings provide an overall characterization of the general condition of the entire bridge. These ratings do not describe a localized or nominally occurring instance of deterioration or disrepair or reflect structural or geometric adequacy.

## **COST ESTIMATING**

The costs associated with the repairs and rehabilitation for various elements at the bridge facilities are estimated based upon the following criteria as applicable or available:

- 1) **BID PRICES**: Quantities are developed during routine inspections for the appropriate repair (square foot, cubic yard, etc.). A unit cost is developed using standard bid items most resembling the repair. Inflation, if required, is used to increase unit costs for repair next year.
- 2) **COMMISSION PERSONNEL/HISTORY**: Maintenance staff are interviewed about the materials and length of time required for certain repairs. Maintenance staff are also asked about previous work relating to the proposed work and the costs relating to them. Depending on the year and extent of the previous work, the proposed costs are adjusted accordingly.
- 3) **EXPERIENCE**: Some of the proposed repairs/rehabilitation cannot be accurately quantified and no previous related work is available. Costs are then developed based upon experience of similar tasks. A length of time to complete the job is assumed and costs are approximated.

NOTE: Cost Estimates for major rehabilitation work include a 20% increase in cost to account for engineering services to prepare the contract documents and supervise construction.



***APPENDIX A:***  
***BRIDGE LISTING***





<b>Bridge Name</b>	<b>Structure Type</b>	<b>No. Of Spans</b>	<b>Structure Length (FT - IN)</b>
<b>Trenton-Morrisville Toll Bridge</b>	Steel Multi-Girder	12	1324 - 6
Washington Street Overpass (Pa)	Steel Multi-Girder	1	52 - 9 c-c brg.
South Pennsylvania Avenue Overpass (Pa)	Steel Multi-Girder	1	63 - 7 c-c brg.
Ramp "IY" Overpass (NJ) (Bridge St.)	Steel Multi-Girder	3	132 - 9 c-c brg.
Union Street Overpass (NJ)	Steel Multi-Girder	1	74 - 6 c-c brg.
Ramp "C" over Route 29 (NJ)	Steel Multi-Girder	3	183 - 3
Ramp "N" Over Union Street (NJ)	P/S Concrete Girder	3	168 - 0 c-c brg.
Center Street Underpass (NJ)	Riveted Steel Plate Girder	1	91 - 3 c-c brg.
Broad Street Underpass (NJ)	Steel Multi-Girder	1	76 - 11 c-c brg.
Ramp 'N' Overpass (NJ)	Steel Multi-Girder	1	77 - 1 c-c brg.
Route 29 Overpass @ TMTB (NJ)	P/S Concrete Spread Box Beams	3	118 - 0
Ramp 'Y' Overpass (Long Ramp) (NJ)	Steel Multi-Girder	4	282 - 0 c-c brg.
<b>Lower Trenton Toll-Supported Bridge</b>	Subdivided Warren Truss	5	1021 - 7
<b>Calhoun Street Toll-Supported Bridge</b>	Iron Phoenix Truss	7	1273 - 3
<b>Scudder Falls Toll-Supported Bridge</b>	Riveted Steel 2 Girder/Floorbeam/Stringer	10	1740
Taylorville Road Overpass (Pa)	Steel Multi-Stringer	3	134 - 0 c-c brg.
Pennsylvania Canal Overpass (Pa)	Steel Multi-Stringer	1	61 - 4
<b>Washington Crossing Toll-Supported Bridge</b>	Double Warren Truss	6	876 - 7
<b>New Hope-Lambertville Toll-Supported Bridge</b>	Pratt Truss	6	1045 - 6.5
<b>New Hope Lambertville Toll Bridge</b>	Steel 2 Girder/Floorbeam/Stringer	10	1682
Route 32 Overpass (Pa)	Concrete Rigid Frame	1	83 - 7
Route 29 Overpass @ NHLTB (NJ)	Steel Multi-Stringer	3	185 - 0 c-c brg.
<b>Centre Bridge-Stockton Toll-Supported Bridge</b>	Riveted Steel Warren Truss	6	824 - 10
Pennsylvania Canal Bridge	P/S Concrete Adjacent Box Beams	1	63 - 0
<b>Lumberville-Raven Rock Pedestrian Bridge</b>	Suspension	4	688 - 3
<b>Uhlertown-Frenchtown Toll-Supported Bridge</b>	Riveted Steel Warren Truss	6	950 - 10
<b>Upper Black Eddy-Milford Toll-Supported Bridge</b>	Warren Truss	3	699 - 9.25
<b>Riegelsville Toll-Supported Bridge</b>	Suspension	3	576 - 9.875
<b>Interstate 78 Toll Bridge WB</b>	Steel Multi-Girder	7	1222
<b>Interstate 78 Toll Bridge EB</b>	Steel Multi-Girder	7	1222
Morgan Hill Road Bridge Overpass (Pa)	P/S Concrete Spread Box Beams	2	210 - 0 c-c brg.
Cedarville Road Overpass (Pa)	P/S Concrete I-Beams	4	Unknown
I-78 over Route 611 (Pa) WB	P/S Concrete Spread Box Beams	3	197 - 6 c-c brg.
I-78 over Route 611 (Pa) EB	P/S Concrete Spread Box Beams	3	199 - 9 c-c brg.
Carpentersville Road Overpass (NJ)	Steel Multi-Stringer	2	203 - 0 c-c brg.
Edge Road Overpass (NJ)	Steel Multi-Stringer	2	272 - 0 c-c brg.
I-78 WB over Route 519 (NJ)	Steel Multi-Stringer	2	237 - 10 c-c brg.
I-78 EB over Route 519 (NJ)	Steel Multi-Stringer	2	236 - 5 c-c brg.
I-78 WB over Ramp C (NJ)	Steel Multi-Stringer	1	112 - 6 c-c brg.
I-78 EB over Ramp C (NJ)	Steel Multi-Stringer	1	116 - 11 c-c brg.
Service Road Overpass (Pa)	P/S Concrete Adjacent Box Beams	1	43 - 0 c-c brg.
<b>Northampton Street Toll-Supported Bridge</b>	Cantilever Truss	3	550 - 0 Pin to Pin
<b>Easton-Phillipsburg Toll Bridge</b>	Petit Thru-Truss	1	539 - 8 Pin to Pin
Broad Street Viaduct (NJ)	Riveted Steel 3 Girder/Floorbeam/Stringer	5	431 - 4
Third Street Overpass (Pa)	Steel Multi-Stringer	1	83 - 0 c-c brg.
Pedestrian Tunnel (Pa)	Reinforced Concrete Box Culvert	1	Unknown
Bank Street Overpass (Pa)	Steel Multi-Stringer	3	120 - 0 c-c brg.
Route 611 Overpass (Pa)	P/S Concrete Adjacent Box Beams	1	34 - 0 fc-fc abut.
<b>Riverton-Belvidere Toll-Supported Bridge</b>	Riveted Steel Double Warren Truss	4	652 - 5
<b>Portland-Columbia Toll Bridge</b>	Riveted Steel Multi-Girder	10	1309
Route 46 Overpass (NJ)	Riveted Steel Multi-Girder	1	96 - 1
Locust Street Overpass (NJ)	Steel Multi-Stringer	4	170 - 0 c-c brg.
<b>Portland-Columbia Pedestrian Bridge</b>	Steel Thru-Deck Girder	4	770
<b>Delaware Water Gap Toll Bridge EB</b>	Riveted Steel Multi-Girder	17	2398 - 6 c.c Brg. Abut.
<b>Delaware Water Gap Toll Bridge WB</b>	Riveted Steel Multi-Girder	16	2462 - 10 c.c. Brg. Abut.
<b>Milford-Montague Toll Bridge</b>	Steel Deck Truss	4	1150

