



Delaware River Joint Toll Bridge Commission

2019 ANNUAL REPORT
'BRIDGES AS ART'



▲ Northampton Street Toll-Supported Bridge

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▲ Centre Bridge–Stockton Toll–Supported Bridge



PHOTOGRAPHY/GRAPHICS CREDITS

A variety of in-house, amateur, contractor, mass media, and governmental/institutional photographic/graphic resources were used to publish this annual report. Aside from the Bridges as Art depictions, contributors to this report included: Ron Saari; Trenton Evening Times; Justin Bowers; Trenton Public Library's Trentoniana Room; McCormick Taylor; Jed Varju; Stokes Creative Group; AECOM; Joseph Jingoli & Son, Inc.; Trumbull Corporation; Jacobs Engineering Group, Inc.; Gannett Fleming; Halkin Mason Photography; USA Architects; and Joe Donnelly.

Front Cover:

Daniel Garber (American, 1880-1958)

The Bridge at New Hope, 1952 (July)

Oil on Canvas

Frances Lehman Loeb Art Center, Vassar College, Poughkeepsie, New York, bequest of Elinore Ridge, class of 1926

Scudder Falls Bridge Rehabilitation Project

Section Photo: Trumbull Corporation

Old Scudder Falls Bridge Section Photo: Ron Saari

Projects Section Photo: Halkin Mason Photography

EXECUTIVE DIRECTOR'S MESSAGE



Welcome to the Delaware River Joint Toll Bridge Commission's latest annual report. The following pages will attest to the broad range of accomplishments the Commission experienced in 2019.

We opened our first new bridge in 30 years when the upstream span of the Scudder Falls Toll Bridge opened to traffic in July – the eighth toll crossing in the Commission's 85-year history. Days later, we initiated all-electronic tolling for the first time.

We occupied a new administrative building, replacing a Truman-era facility that had outlived its usefulness. We opened a trailhead adjacent to the Delaware Canal towpath in Lower Makefield, PA., broadening the Commission's public-service mission in the process. And we increased our salt-storage capacity for combating dangerous winter conditions.

Along the way, we kept our facilities secure, collected tolls, maintained our bridges and roadways, and – of course – kept the river region's motorists and commerce moving.

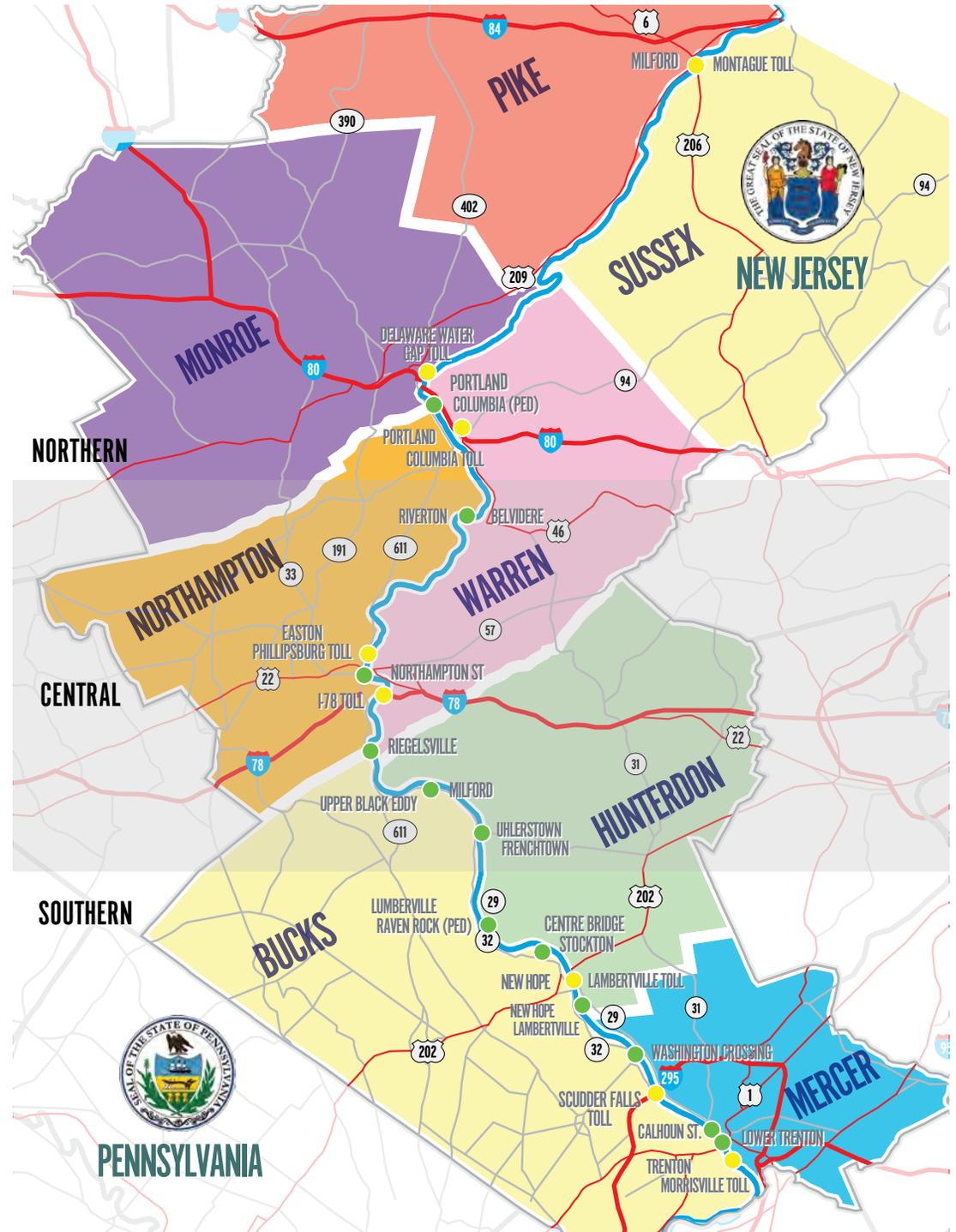
None of this would have been possible without our Commissioners and our dedicated workforce – men and women who are truly committed to the mission of providing safe and efficient travel between Pennsylvania and New Jersey every day.

A handwritten signature in black ink that reads "Joe J. Resta". The signature is fluid and cursive.

JOE RESTA
DRJTBC
Yardley, PA

MISSION STATEMENT

The Delaware River Joint Toll Bridge Commission provides safe and efficient river crossings between Pennsylvania and New Jersey. Stretching roughly 140 miles from the Philadelphia/Bucks County, Pa. boundary northward to the New Jersey/New York state line, the Commission’s jurisdiction encompasses a diverse geographic region featuring bustling cities, quaint river towns, and scenic portions of the Delaware River where nature’s beauty abounds. Committed to moving job commuters, commercial freight carriers, pedestrians and recreationists, the Commission strives to deliver quality customer service, sound fiscal management, and dependable ground-transportation facilities for the growing bi-state river region.



Note: The previously non-toll Scudder Falls Bridge was phased out of service starting approximately 11 p.m. July 9. At that time, Pennsylvania-bound traffic was shifted onto the new Scudder Falls Toll Bridge’s first completed span (upstream replacement); New Jersey-bound traffic temporarily continued to cross the old bridge. Approximately 6 p.m. July 26, New Jersey-bound traffic also moved onto the new replacement bridge structure and the old bridge was retired from service.

COMMISSIONERS

New Jersey

MICHAEL B. LAVERY, Chairman
LORI CIESLA
ALADAR G. KOMJATHY
YUKI MOORE LAURENTI, Treasurer
GARRETT LEONARD VAN VLIET



LAVERY



CIESLA



KOMJATHY



MOORE LAURENTI



VAN VLIET

Pennsylvania

WADUD AHMAD, Vice Chairman
JOHN D. CHRISTY
DANIEL GRACE
PAMELA JANVEY, Secretary
AMY ZANELLI



AHMAD



CHRISTY



GRACE



JANVEY



ZANELLI

About The Commission

The Delaware River Joint Toll Bridge Commission is a bistate agency that owns and operates eight toll bridges and 12 toll-supported bridges – two of which are pedestrian-only crossings. The agency’s assigned jurisdiction includes portions of five counties in New Jersey and four counties in Pennsylvania. The service region has a population of more than 2 million people.

Funding for the operation, upkeep and maintenance of the Commission’s bridges and related facilities is derived solely from revenues collected at the agency’s toll bridges. The Commission receives neither federal nor state tax subsidies.

A 10-member board of Commissioners — five from each state — governs the Commission. New Jersey members are nominated by the Governor and confirmed by that state’s Senate for three-year terms. The Pennsylvania members are appointed by the governor and serve at his/her pleasure. Commissioners meet monthly to review reports, provide oversight and set policies carried out by the Executive Director and professional staff.

The Commission’s bridges carried an average of 380,200 vehicles per day in 2019. Total operating revenue earned in 2019 was \$144,995,216. The Commission’s 2019 operating budget was \$72.6 million. The agency has roughly 400 full-time employees.

STAFF

JOSEPH J. RESTA
Executive Director

SEAN M. HILL
Deputy Executive Director
of Operations

ROY W. LITTLE, P.E.
Chief Engineer

ARNOLD J. CONOLINE, JR.
Chief Administrative Officer

JOSEPH F. DONNELLY, JR.
Deputy Executive Director
of Communications

JAMES M. PETRINO
Chief Financial Officer

KEVIN SKEELS
Assistant Chief Engineer

QIYAN (TRACY) ZHAO
Comptroller

CHARMAINE KENT-GRAVES
Assistant Comptroller

JODEE INSCHO
Director of Community Affairs

JULIO A. GURIDY
Director of Contract Compliance

YVONNE KUSHNER
Director of E-Z Pass

JOANNA M. CRUZ
Director of Human Resources

JOHN BENCIVENGO
Director of Information Technology

LEVAR TALLEY
Director of Maintenance

LENDELL JONES
Senior Director of
Maintenance & Toll Operations

WILLIAM WRIGHT
First Senior Director of Operations

MATTHEW M. HARTIGAN
Senior Director of Public
Safety & Bridge Security

J. ERIC FREEMAN
Director of Public
Safety & Bridge Security

DAVID K. BURD
Director of Purchasing

MICHELE GARA
Director of Toll Operations

JOHN MILLS
Senior Director of
Training & Employee Safety

JACK BAUM
Director of Training
& Employee Safety



▲ Lower Trenton Toll-Supported Bridge



▲ New Hope-Lambertville Toll Bridge

BRIDGES AS ART

Daniel Garber is one of the most heralded Pennsylvania Impressionists. Born in 1880, he was the son of Mennonite parents in Indiana. Mr. Garber had a long association with the Pennsylvania Academy of Fine Arts, first as a student and later as an instructor. He established a studio in Lumberville, PA. in 1907 and became a central figure in the New Hope art community. Paintings along the Delaware River are among his most coveted works. He died in 1958. **COVER**

Michael Budden is a Central Jersey artist and high school art instructor. Born in 1957, his career has evolved over the decades. He was an award-winning wildlife painter in the 1980s. Introduced to plein-air painting by a friend in 1989, Mr. Budden proceeded to paint seascapes and landscapes — including scenes along the Delaware River. He shifted to urban locales — primarily New York City landmarks and street scenes — around 2006. **Page 11**

Myles Cavanaugh was born to an artistic family in 1974 and “identifies with his home-base Bucks County (PA.) Impressionists.” He attended the Pratt Institute in Brooklyn. He travelled and painted abroad after completing his studies in fine art. Upon returning to the United States, Mr. Cavanaugh became active in the Lambertville, N.J. art scene. His painting portfolio includes scenes along the Jersey Shore, the Delaware River region, and New York and Philadelphia skylines. **Page 8**

James Gurney is an artist, author and art school lecturer. Born in California in 1958, he taught himself to draw by reading books about illustrators Norman Rockwell and Howard Pyle. He is best known for his illustrated Dinotopia book series. Mr. Gurney has produced U.S. postage stamps and paperback book covers. He also is a dedicated plein-air artist and sketcher. His subjects have included portraits, small-town street scenes, and landscapes in the vicinity of his hometown Rhinebeck, N.Y. **Page 50**

Karen Marchetti pieced together her first quilt top in 2003. (Yes, that image of the Lower Trenton Bridge’s iconic “Trenton Makes The World Takes” sign is a quilt.) She turned her quilting hobby into a career two years later by establishing her Creative Longarm Quilting studio. Ms. Marchetti grew up in Hamilton Square, N.J., a short distance from Trenton. She now resides in southeast Florida, where she teaches and promotes the art of quilting. **Page 7**

James “Jay” McPhillips is a former Comedy Central TV staffer and New York City ad agency art director. He worked for many years in Princeton, N.J., where he was the McCarter Theatre’s graphic designer. He later became an independent designer of pun-inspired bumper stickers, t-shirts and other creations sold online and in area galleries and shops. Now based in Doylestown, PA., Mr. McPhillips frequently produces oil paintings of Delaware River bridges and river-region street scenes and nightspots. **Inside Back Cover**

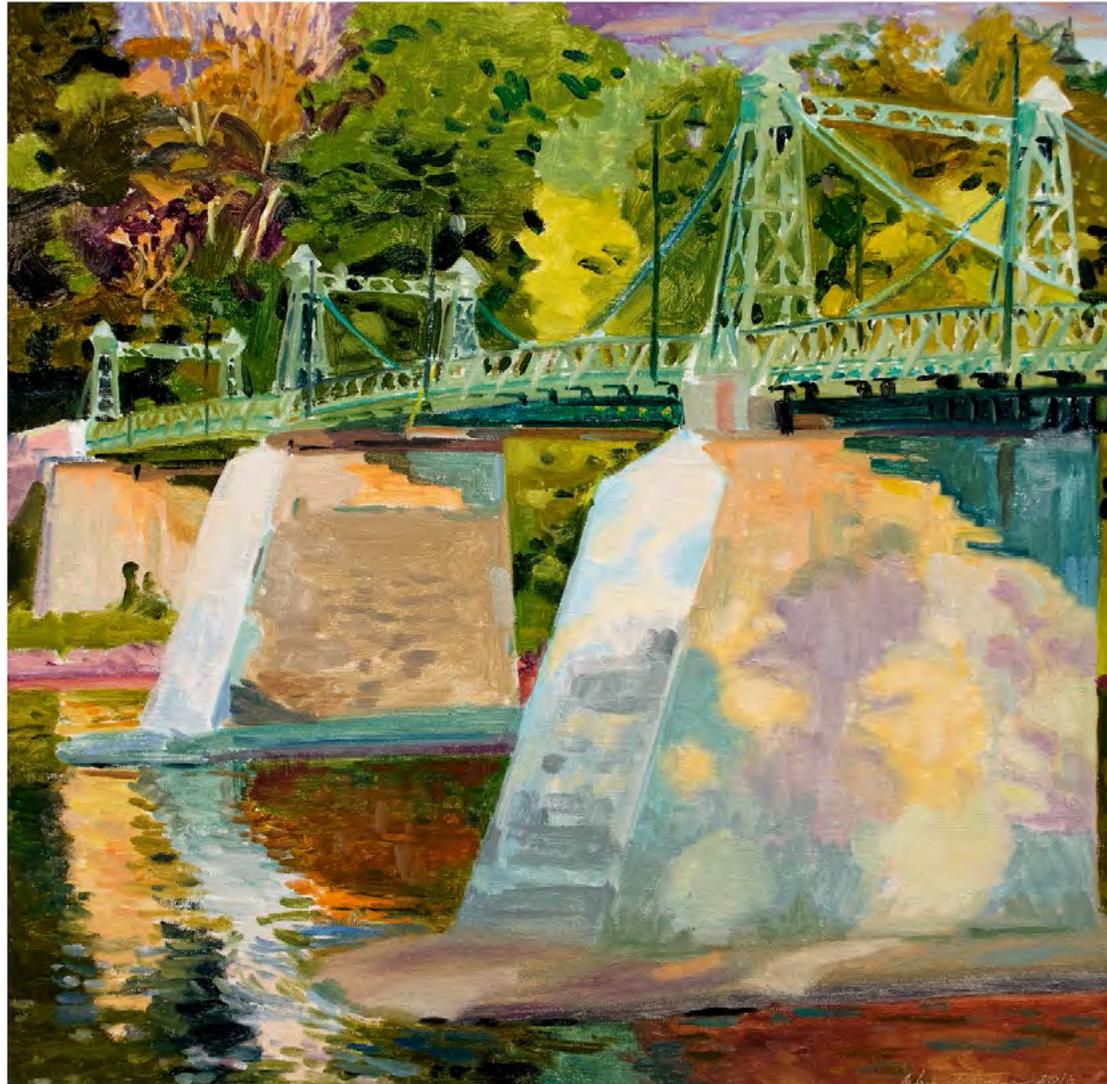
Mr. and Mrs. Rose are Robert Rose, an illustrator, and Rebecca (White) Rose, a graphic designer. They met while attending Philadelphia College of Art. After working in advertising for many years, Mr. Rose graduated with honors from the French Culinary Institute and became a chef. Mrs. Rose was a partner in a Manhattan design firm for over 15 years. The Milford, N.J. residents have collaborated artistically since 2000. Their black-and-white illustrations of seven different Commission bridges can be found on t-shirts, note cards, and coffee mugs. **Pages 1, 36, 37**

John Reilly was born in Brooklyn, N.Y. in 1942 and studied advertising art at the School of Art and Design in Manhattan. He operated a Madison Avenue sales promotion agency that included clients like Bacardi Rum, Johnson & Johnson, and Nabisco. Residing in Califon, N.J., Mr. Reilly fulfilled a lifetime dream in the 1980s by studying fine art and becoming a plein-air painter. His subjects often were Central Jersey street scenes and landscapes. He operated the Reilly Gallery in Lambertville for a short time in the 1990s, but is now retired. **Inside Front Cover**

John Schmidtberger is a painter, gallerist, and cartoonist from Upper Black Eddy, PA. “Poetic realism” is the term he uses to describe his oil paintings of buildings, landscapes, and street scenes in and around Frenchtown, N.J. — where he owns a gallery. Mr. Schmidtberger grew up in Hackettstown, N.J. and studied painting, drawing, sculpture, and printmaking at the University of Pennsylvania. He paints from direct observation without the use of photographs and with little or no retouching. **Pages 10, 44-45**

Colette Sexton's passion for painting was instilled in her while growing up in Bucks County, PA. She holds degrees from the School of the Art Institute of Chicago and the University of Oregon. After extensive travels in the U.S. and abroad, she became active in Lambertville's local art scene. Her painting technique is contemporary, yet she finds inspiration in the area's historic towns and architecture. Her works include river scenes, sunsets, and the New Hope-Lambertville Bridge. **Page 52**

Luiz Vilela was raised on his family's coffee plantation in Brazil. He now resides in Lambertville, N.J. He has worked as a graphic designer for advertising agencies and theatrical productions and as a book illustrator. Mr. Vilela holds degrees from the Federal University of Rio de Janeiro and the Pratt Institute in New York City. Mr. Vilela primarily produces oil paintings, but he also is proficient in watercolor, charcoal, pastel and pencil on paper. His paintings include portraits, river scenes, and local landmarks. **Back Cover**



▲ Riegelsville Toll-Supported Bridge

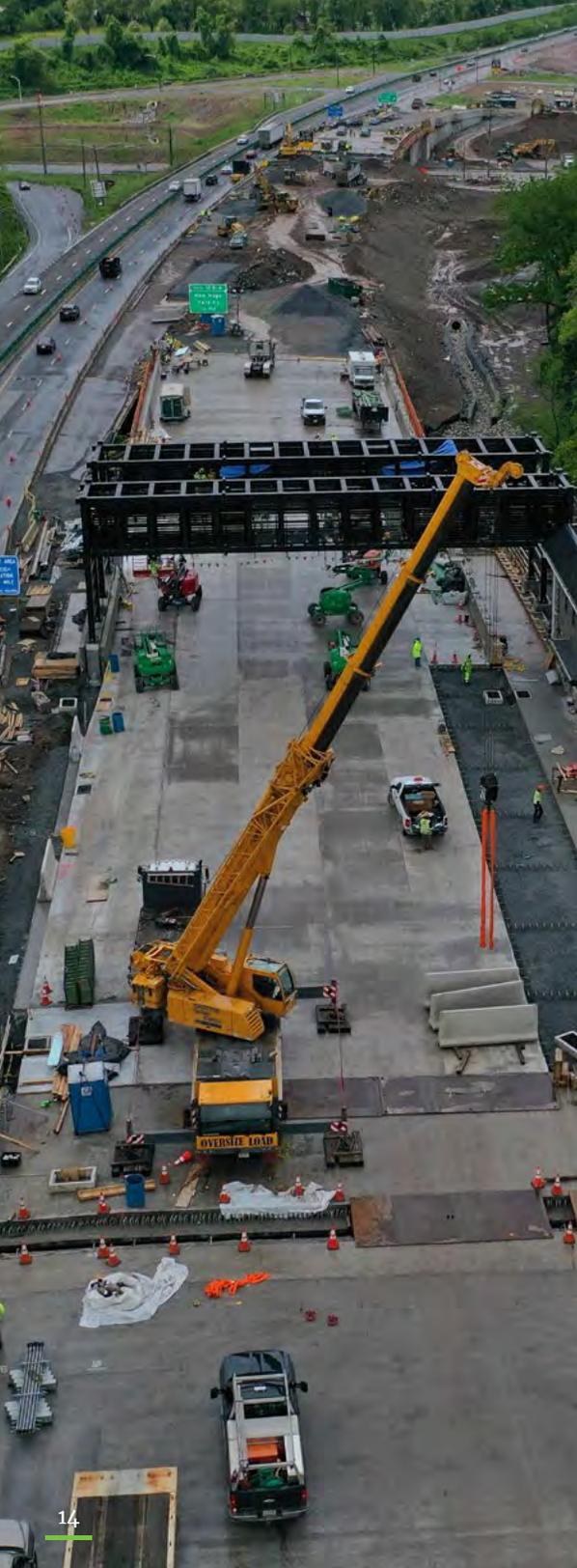


▲ Washington Crossing Toll-Supported Bridge





SCUDDER FALLS



Scudder Falls Toll Bridge's First Completed Span Makes July Opening

The Commission's eighth toll bridge opened to traffic – in the Pennsylvania-bound direction only – approximately 11 p.m. July 9.

The occasion was marked without ceremony or fanfare, as I-295 NB lanes on the bridge's New Jersey side were routed away from the nearly 60-year-old, functionally obsolete Scudder Falls Bridge and onto the newly completed upstream span of the Scudder Falls Toll Bridge. Toll collections, however, were held in abeyance for a little more than four additional days; the bridge's all-electronic toll gantry (E-ZPass and TOLL-BY-PLATE) came on line 12:00:01 a.m. July 14.

The partial bridge opening was the climax to the first construction stage for the 4.4-mile-long Scudder Falls Bridge Replacement Project, which is now projected to reach final completion in spring 2022. This initial work stage began in spring 2017. It was considered to be the most challenging and difficult of the three-stage project due to the breadth of construction tasks, the need for multiple narrow or confined work zones, the time-constraints of some environmental restrictions, and the execution of construction activities amid the constant presence of moving traffic through the project corridor. Oftentimes, lane or ramp closures and accompanying detours were necessary at or around the bridge crossing's flanking interchanges.

In the end, the motoring public endured a series of temporary challenges and inconveniences to utilize a new bridge with upgraded, realigned approaches and safer, redesigned flanking interchanges. The improvements underscored the purpose of the newly instituted toll charges at this formerly non-toll river crossing.

Project elements completed or significantly completed in 2019 included:

- **Upstream bridge span** – This new structure is currently configured to carry two lanes of PA-bound traffic and two lanes of NJ-bound traffic. An auxiliary lane brings PA-bound traffic onto the highway from the I-295/Route 29 interchange in New Jersey. A temporary concrete divider separates two opposing directions of traffic; this will be removed in 2021 when the second span reaches completion immediately downstream and begins serving NJ-bound traffic only. The upstream span will then carry only PA-bound traffic. The concrete deck for a contiguous shared-use pedestrian/bicycle path was installed on the new span's upstream side, but it will take two more years before approach walkways can connect the new facility with towpaths for the Delaware Canal on the Pennsylvania side and the Delaware and Raritan Canal on the New Jersey side.
- **I-295 approaches to new bridge** – In tandem with the construction of the new bridge, I-295 was widened on the Pennsylvania side and realigned/reconstructed on the New Jersey side. These new approaches on both sides of the bridge were phased into service on a schedule similar to that of the bridge. On the New Jersey side, an uninterrupted four-day-long high-intensity construction cycle (HICC) with a single travel lane was used to bring the I-295 NB segment on line. The new approaches currently are carrying traffic in both directions. They will be transitioned to carry only PA-bound traffic once the second bridge span opens in late summer 2021.

- Three new approach bridges** – An often overlooked facet of the Scudder Falls project is the construction of new approach bridges to carry I-295 traffic to and from the Scudder Falls Toll Bridge. The largest of these approach bridges is on the New Jersey side, a two-span, steel-beam structure that carries traffic across NJ Route 175/River Road, the Delaware & Raritan Canal, and the NJ Route 29 northbound bypass lane. The other two approach bridges are on the Pennsylvania side: a simple-span, pre-cast-concrete-beam structure across the Delaware Canal and a simple-span, steel-beam structure across Taylorsville Road. All three bridges have concrete decks topped with a polyester-polymer-concrete finish layer – the same surface on the nearby Scudder Falls Toll Bridge. The new approach bridges replace pothole-ridden predecessor spans that became a jaw-jarring experience for increasingly frustrated motorists and a confounding maintenance challenge for state transportation agency road crews. Each of the new approach spans went into service at different junctures prior to the opening of the first completed toll bridge span. Identical structures are now being constructed at these three locations to serve the downstream toll bridge span once it is completed and opened to traffic in late summer 2021.



- I-295/NJ Route 29 interchange** (Exit 76 in New Jersey) – A Philadelphia radio station once described this interchange’s former configuration of multiple ramp mergers and at-grade intersections as “kamikaze.” It was reconstructed during the project’s first stage. Instead of a folded-diamond design, it now features two roundabouts to handle traffic exchanges between I-295 and Route 29. A series of new ramps now handle traffic exiting or entering I-295. Meanwhile, two bypass lanes allow Route 29 motorists to completely circumnavigate the roundabouts and ramps. A new drainage basin was installed within the loop ramp carrying Route 29 traffic onto the Scudder Falls Toll Bridge toward Pennsylvania. Additional alignment and drainage work will occur on the interchange’s southern side in conjunction with the second bridge span’s construction in 2020 and 2021.



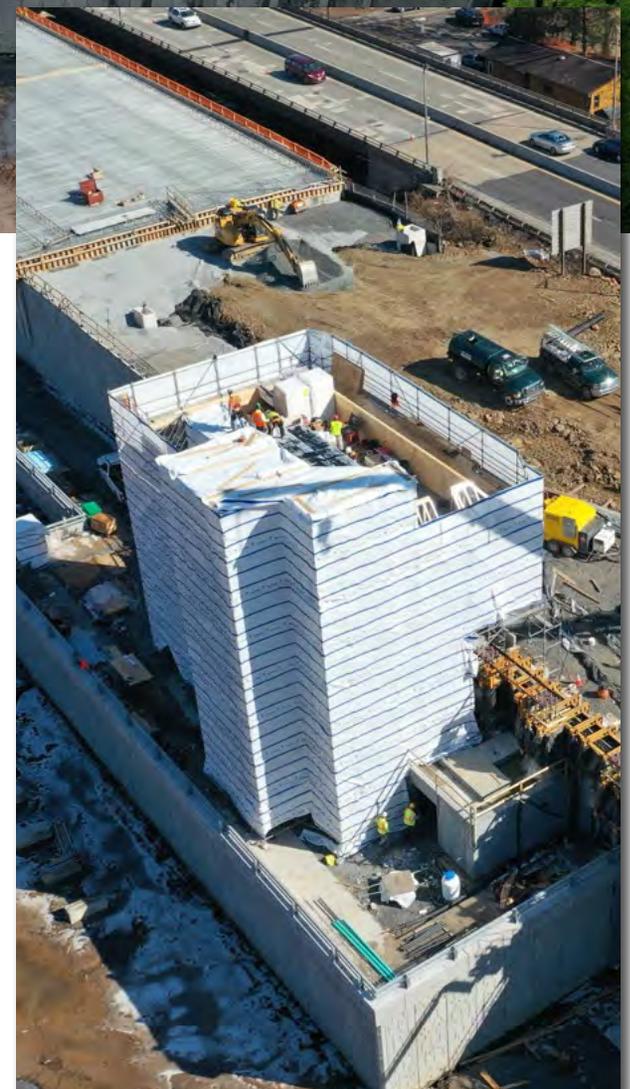
- I-295/Taylorsville Road interchange** (Exit 10 in Pennsylvania) – Incrementally, this interchange underwent a series of changes in the project’s first stage. On the south side, the on-ramp to I-295 toward New Jersey was extended farther west to lengthen the space for accelerating into mainline traffic. This also allowed for drainage basin construction in an enlarged infield. On the northern side of I-295, the former slip ramp to Taylorsville Road northbound was permanently shut down and a newly extended exit ramp was established to carry exiting traffic for Taylorsville Road in both directions. The exit ramp now fans out to three lanes: one dedicated solely to traffic toward Yardley, and the other two for traffic toward New Hope or nearby Woodside Road, both of which are controlled by traffic-control signals at Taylorsville Road. As on the other side of I-295, the infield now serves as a storm basin. More work will occur at the interchange’s southern side during the project’s second stage.





- **All-Electronic-Tolling/Bridge Monitor (AET/BM) Building** – A slender four-story, steel-reinforced-concrete and steel building was completed and occupied shortly before the Scudder Falls Toll Bridge’s upstream span opened to traffic. The structure houses the servers and electrical equipment necessary to run two nearby AET gantries that assess tolls for vehicles traveling in the Pennsylvania-bound direction across the bridge. A small detail of security personnel also are assigned to the building on a 24/7 basis. They monitor traffic and assist in identifying vehicle breakdowns or accidents on or around the bridge. The building has an elevator, two garages, storage space, a small kitchen, and lockers. An elevated walkway off the building’s roof connects with catwalks on the two nearby tolling gantries.

- **All-Electronic-Tolling (AET) Gantries** – Dual box-frame overhead steel gantries were lifted into place on twin posts during the months leading to the bridge’s opening. Video cameras, vehicle profile readers, and toll-auditing cameras were installed on each gantry. One gantry also was outfitted with antennae for detecting E-ZPass toll transponders. They currently span both the New Jersey- and Pennsylvania-bound travel lanes, but only assess tolls on vehicles heading into Pennsylvania. After the bridge’s second span is completed and opened in 2021, only Pennsylvania-bound traffic will cross beneath the gantries. The gantries are over 17-feet above the road surface. They are positioned 31 feet apart. One gantry records a passing vehicle’s rear image while the other captures the same vehicle’s front image. Each gantry has catwalks to multiple hatches from which technicians can access tolling equipment suspended above the roadway. The design mitigates the number of lane closures that might be needed periodically for repairing, replacing or re-calibrating electronic tolling equipment.



Tale of the Tape: After 770 Construction Days, Scudder Falls Toll Bridge's Upstream Span Begins Service

GENERAL

The Scudder Falls Toll Bridge's upstream span is the first of two parallel structures that will carry I-295 traffic between New Jersey to Pennsylvania. This inaugural span was constructed adjacent to, and just north of, the existing bridge. Construction of this new bridge began May 30, 2017. It opened to traffic in the Pennsylvania-bound direction only approximately 11 p.m. July 9. Toll collections began with an all-electronic system on July 14. The span went into full temporary service – carrying traffic in both directions – on July 26, 2019, thus supporting the demolition of the former functionally obsolete Scudder Falls Bridge and the construction of the second parallel replacement span. The construction of the downstream span is on-going and is expected to open in a limited configuration by late summer 2021. Full project completion is expected by late May 2022.

The Scudder Falls Bridge Replacement Project's major elements include:

- Replacement of the nearly 60-year-old Scudder Falls Bridge with a dual-span steel multi-girder bridge that will have six thru-travel lanes, three auxiliary lanes, shoulders, and a dual-use walkway when fully completed in the second half of 2021;
- Improvement/widening/replacement of 4.4 miles of approach roadways and bridges between the I-295/PA Route 332 Interchange (Exit 8) in Pennsylvania and the I-295/Bear Tavern Road Interchange (Exit 75) in New Jersey;
- Reconfiguration of the I-295/Taylorville Road Interchange (Exit 10) in Pennsylvania;
- Reconstruction of the I-295/Route 29 Interchange (Exit 76) in NJ with new ramps, connector lanes, two roundabouts, and drainage;
- Installation of noise-abatement walls where warranted along the project's Pennsylvania and New Jersey highway segments;
- Erection of an all-electronic-tolling gantry to assess tolls via E-ZPass and TOLL-BY-PLATE billing on vehicles moving at highway speeds in the Pennsylvania-bound direction across the new bridge;
- Construction of an adjoining Bridge Monitor/ All Electronic Tolling Building; and
- Development of a wetlands-mitigation area near the bridge's Pennsylvania abutment.

The awarded bid for the overall project was \$396 million, which includes a \$99,943,285 cost for constructing the two parallel replacement bridge spans.



SUBSTRUCTURE

The upstream bridge span consists of six reinforced concrete piers constructed on reinforced concrete pile caps. The pile caps at piers 1, 2, 3, 5 and 6 are supported by six five-foot-diameter reinforced concrete caissons socketed into subsurface rock; the pile cap at pier 4 is supported by eight five-foot-diameter reinforced concrete caissons socketed into rock. The two abutments are reinforced concrete stub structures founded on steel H-piles driven to rock. The Pennsylvania abutment is protected by sloping rock armor and the New Jersey abutment is behind a mechanically stabilized earth (MSE) wall.

SUPERSTRUCTURE

The upstream bridge is a seven-girder, seven-span continuous steel structure with a 10-inch-thick reinforced-concrete deck topped by an inch-thick polyester-polymer concrete (PPC) overlay. The structure consists of a 191-foot, 6-inch span on the Pennsylvania side, five 279-foot-long interior spans, and 227-foot, 6-inch end span on the New Jersey side. The total bridge length is 1814 feet from the center of abutment bearings. The bridge has a 0.68-percent downward grade from New Jersey to Pennsylvania.

The reinforced concrete deck measures 88 feet, 1-¹/₄ inches out to out.

It is designed to carry three 12-foot-wide through lanes and one 12-foot-wide auxiliary lane to accommodate merging traffic accelerating onto I-295 from a NJ Route 29 interchange on-ramp in New Jersey and decelerating off I-295 to a Taylorsville Road interchange off-ramp in Pennsylvania. The right shoulder is 12-foot wide and the left median shoulder is 13-foot, 2-³/₄ inches wide. The right barrier is 2-foot, 2-¹/₄ inches wide. The left median barrier is 1-foot, 8 inches wide. The structure has a shared-use pedestrian/bicycle pathway on the upstream side; this facility is expected to connect the canal towpaths in both Pennsylvania and New Jersey around the time the second parallel bridge span opens in late summer 2021. The shared use pathway will be 10-foot wide with a foot-wide curb, sightseeing bump outs, and an anodized aluminum railing.

An approximate list of materials used to construct the replacement bridge's first completed (upstream) span follows:

Substructure quantities:

6,520 CY of Excavation
4,260 CY of No. 57 Coarse Aggregate
7,010 CY of Class A Cement Concrete
600 CY of Class AA Cement Concrete

7,890 LB of Fabricated Structural Steel, Galvanized
1,220,480 LB of Reinforcement Bars, Galvanized
2,100 LF of Steel Beam Bearing Piles, HP 14 x 89
420 LF of 60" Diameter Drilled Caisson, Shaft Section

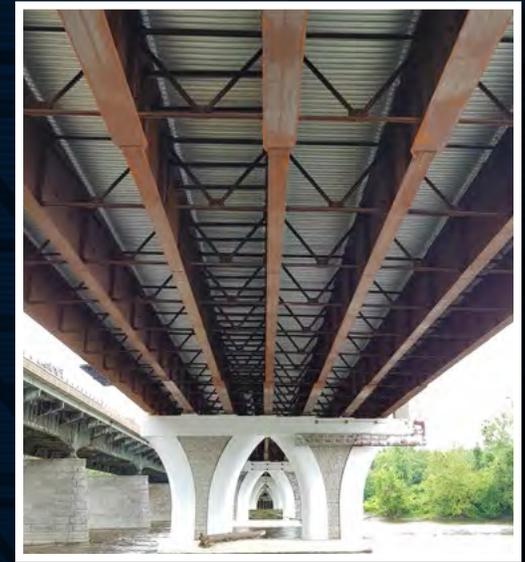
800 LF of 54" Diameter Drilled Caisson, Rock Socket
1,770 SF of Mechanically Stabilized Earth Wall (MSE Wall)
1,350 SF of Architectural Concrete Surface Treatment

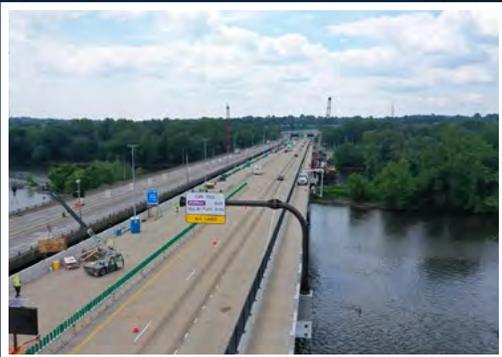
Superstructure quantities:

5450 CY of Class AAAP Cement Concrete, Deck
780 CY of Class AA Cement Concrete, Barriers
553 LF of Sound Barrier with Clear Acrylic Panels

1,630 LF of Protective Fence
1,640 LF of Pedestrian Railing
220 LF of Modular Joins System
10,020,340 LB of Fabricated Structural Steel, Unpainted

56 High Load Multi-Rotational Bearings
35,690 SF of Architectural Concrete Surface Treatment
1,873,200 LB of Reinforcement Bars, Galvanized
18,510 CF of Polyester Polymer Concrete (PPC) Overlay





New Bridge Features Polyester-Polymer Concrete Overlay

The Scudder Falls Toll Bridge and its three nearby I-295 approach bridges feature a relatively new driving surface: polyester-polymer concrete (PPC).

This roughly 1-inch-thick, high-density material is considered to be longer lasting and less impervious to water, salt, and petroleum-based spills and stains than conventional Portland-based concrete. Transportation agencies across the country increasingly are using PPC to extend the life of bridge decks, reducing wear due to traffic and deterioration caused by harsh winters.

PPC has already been applied on millions of square feet of bridge decks across the country. It has been demonstrated to last more than 35 years in actual applications (the first overlays were placed in 1983), but the Commission's project consultants anticipate that the product could last up to 100 years at Scudder Falls.



Video Explains TOLL BY PLATE Billing Process At the New I-295/Scudder Falls Toll Bridge
TOLL BY PLATE customers encouraged to Save Money By Getting E-ZPass Accounts from the Bridge's Toll Processor

Pennsylvania-bound motorists who cross the I-295/Scudder Falls Toll Bridge without a properly mounted and operational E-ZPass transponder will soon receive TOLL BY PLATE invoices in the mail.

Invoices are sent via U.S. Mail 30 days after an initial toll transaction or when \$50 in accumulated tolls are recorded, whichever occurs first. All-electronic toll (AET) collections began at the new bridge on July 14.

While cashless AET facilities are increasingly being used around the country and around the world, some motorists may be unfamiliar with the Scudder Falls Toll Bridge's toll collection system. For this reason, a video has been produced to help TOLL BY PLATE customers understand how the new bridge's billing and payment process works. The new video may be accessed on [Vimeo](#) and on [YouTube](#).



The video is 6-minutes-20-seconds long. It consists of video footage, animation, and other graphic content, accompanied by background music and narration. It explains how the toll-assessment and billing process works from split seconds before a PA-bound vehicle passes at highway speeds beneath the bridge's overhead toll gantry to when the vehicle's registered owner receives a mailed TOLL BY PLATE invoice for accumulated tolls.

The video further explains that TOLL BY PLATE rates are significantly higher than E-ZPass rates and that motorists risk fees and penalties if they do not provide payment by prescribed due dates. (The Class 1 passenger vehicle toll for a TOLL BY PLATE transaction is \$2.60 compared to a \$1.25 base E-ZPass toll for the same vehicle.)

Because of the inherent savings for E-ZPass use, the video encourages TOLL BY PLATE customers to get E-ZPass as a more convenient — and cost-effective — way to pay tolls at the new bridge. The entity that processes all of the toll transactions at the new bridge is the New Jersey E-ZPass Customer Service Center and may be reached at www.ezpassnj.com or 1-888-AUTO-TOLL. This regional toll processor, which is not a New Jersey state government agency, has served the Delaware River Joint Toll Bridge Commission for more than five years.



Please visit www.scudderfallsbridge.com for the latest travel advisories, construction updates, progress photos, E-ZPass/toll information, and more.

For answers to frequently asked questions (FAQs) about tolling at the Scudder Falls Toll Bridge go to: www.scudderfallsbridge.com/tolling/

Motorists, residents and other interested parties may submit questions or comments via any of the methods below:

Webmail www.scudderfallsbridge.com/contact
Email info@scudderfallsbridge.com
Toll-free information line 1-855-495-7726



DRJTBC Ushers in Inaugural All-Electronic Tolling System With Ad Campaign, Presentations, Banners, Website Changes

Before the Commission's first all-electronic tolling (AET) facility came online at the Scudder Falls Toll Bridge, the agency made a concerted effort to raise public awareness of the approaching bridge opening, the ease of cashless toll collections, and the money-saving advantages of E-ZPass.

The outreach campaign appears to have been well-founded and successful. E-ZPass penetration rates at the newly tolled river crossing exceeded projections from the outset. By year's end, E-ZPass use at Scudder Falls was on the cusp of eclipsing 90 percent of recorded toll transactions.

Plans to bring on AET were sowed many months – even years – before the new bridge came on line. The Commission, for example, announced in late 2009 that the planned replacement bridge would be operated as a tolled crossing. This well-publicized announcement began a drumbeat to get people prepared to pay for using a river crossing that previously had been free to cross in either direction.

In 2015, the Commission rolled out a proposed toll schedule for the bridge. Six advertised hearings were held, each featuring a video of how the bridge's all-electronic toll system would work for motorists with E-ZPass and those who would be sent invoices in the mail for their tolls. In the course of this process, a tolling section was developed for the project website. The website subsequently was overhauled to emphasize project construction activities in 2017, but tolling remained an important component on that platform – and continues to be to this day.

Likewise, tolling was included in presentations about the project that were given over the years to construction industry groups, civic and business organizations, and various elected officials and governmental bodies.

With construction of the new bridge's first span progressing rapidly in 2018, the Commission began intensifying outreach efforts to raise public attention about the approaching onset of tolling at Scudder Falls. Here are some of the major aspects of that multi-lateral effort involving communications/community affairs personnel and multiple consultants:

Advertising Campaign – cable TV, billboards, banners, radio, traffic services

Planning for the public outreach advertising campaign began in late 2018, when Commission staff and consultants reviewed the existing traffic and demographic studies that had been performed throughout the planning process. The goal of these reviews was to paint a clear picture of the most common bridge users and form a strategy to most effectively reach those users.

Traffic studies proved effective in showing that more than 65 per-cent of bridge users were job commuters living in Bucks County, Pennsylvania who work in Mercer County, New Jersey. These bi-state commuters were a particularly meaningful target audience due to the fact they could be eligible for the frequent commuter discount program offered through the Commission's back-office E-ZPass service provider.

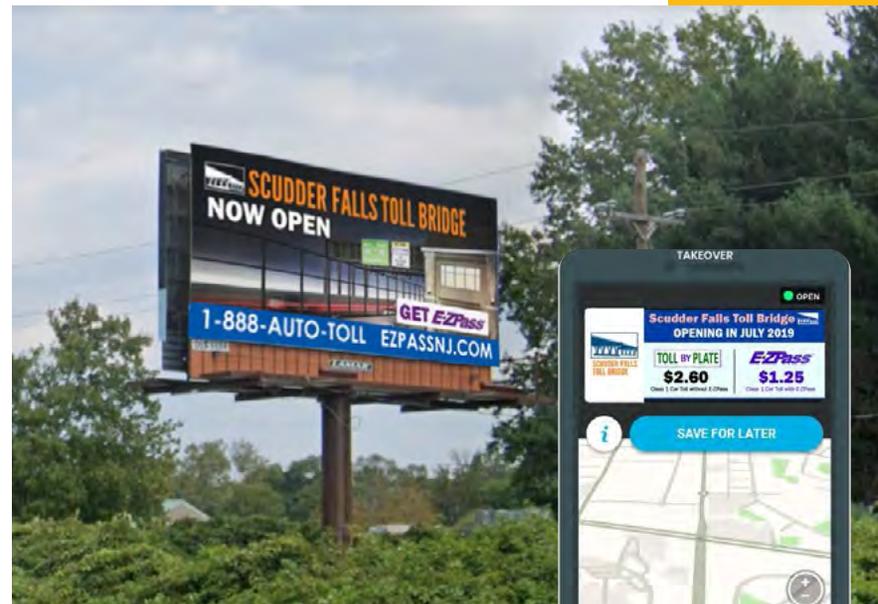
The resulting underlining strategy was simple: deliver a tolling-is-coming-to-the-new-bridge message at every possible touch point for a traditional car commuter. This meant reaching people before and after work, in their car, and on their smartphone.

The advertising campaign focused on five major components: outdoor billboards, broadcast radio, localized cable television, in-car navigation, and entertainment streaming services. Outdoor elements included flanking billboards along I-295 in Pennsylvania and New Jersey, as well as a large banners that were installed on both sides of the AET gantry directly prior to its opening. Traditional broadcast radio was focused on two primary markets: Trenton-area stations and larger Philadelphia news/sports radio stations. Localized cable television ads were produced by Comcast Spotlight using drone footage and other repurposed AET images from the Commission. The ads were targeted to users in lower and central Bucks County, as well as Mercer and Hunterdon counties in New Jersey. Digital streaming and in-car navigation ads were targeted to a tighter market surrounding the bridge crossing, as well as in several commuter "pockets" as determined by local traffic surveys.

Given the demographics, slightly less than half of the total budget was expended on radio. Localized cable consumed approximately 20 per-cent of the total budget, and the remaining 30 per-cent was a mix of digital, streaming audio/video, outdoor, and traditional print.

In all cases, the advertising buys were targeted to reach more than 90 percent of individuals within specific geographic areas. This was achieved through either high-frequency saturation (targeted around the July 2019 bridge opening) or through extended-term buys that enabled long-tail local cable TV and billboards to continue through the end of 2019).

Alex Styer of Bellevue Communications, the Commission's media consultant, was integral in the process of creating the advertising plan, the securing of advertising buys, and the crafting of various components. The Commission's Communications Department honed the messaging, crafting the bulk of advertising copy.





Updating of Educational Video on New Bridge's AET System

In the spring, the Commission prescribed a series of updates to be made to an AET educational video that McCormick Taylor produced for the Scudder Falls Toll Bridge's 2016 rate-setting hearings. One significant change was updating the narration and graphics to reflect the 2018 re-designation of the orphan I-95 segments in New Jersey and Pennsylvania to I-295.

Using filmed footage, animation, graphics and narration, the 3-1/2-minute-long video explained how the new bridge's AET system would work while outlining the benefits of cashless toll collection. It also mentioned how E-ZPass customers would pay lower rates compared to TOLL BY PLATE customers who cross the bridge without valid E-ZPass transponders in their cars.

The video was a collaborative effort involving Commission staff; McCormick Taylor, the Scudder Falls project's public involvement consultant; Michael Baker International, the project's design consultant; and Stokes Creative Group, a sub-consultant to Baker and McCormick Taylor.

Posted on the YouTube and Vimeo hosting platforms, the video was prominently promoted on the DRJTBC and Scudder Falls project websites. It also was publicized in a press release that kicked off the free-media countdown to the new bridge's opening. McCormick Taylor further promoted the video – and other tolling news – in postcard mailings to the project's customer database.

Road Show of Presentations

A series of presentations were given to governmental officials, business organization and interested civic groups before and after the new bridge opened.

These presentations provided the latest information on the project's progress as well as an explanation of what the toll rates would be and how they would be collected without toll booths. McCormick Taylor played a key role in this process by constructing a PowerPoint program intended to educate the public about the tolling process to be utilized at Scudder Falls.

Audiences included business-oriented groups like Rotary and Kiwanis clubs, municipal meetings in Ewing and Lower

Makefield, and transportation oriented organizations such as the Central Jersey Transportation Forum, TMA Bucks, and the Delaware Valley Regional Planning Commission's regional technical committee. Individualized presentations also were given to elected officials and their staffs.

The Commission's communications department further spread the word by tacking on the Scudder Falls tolling message to various bridge-history slide programs that were presented at public libraries and other outlets during late 2018 and through 2019.

Delaware River Port Authority

ABOUT BOARD INFO CONTACT PROJECTS DOING BUSINESS

Scudder Falls Toll Bridge

Toll rates for the Scudder Falls Toll Bridge opened August 28, 2016. The bridge's first operational span opened to traffic on June 15, 2016. Toll collections began shortly after midnight on the morning of August 28. Toll rates changed in the Pennsylvania-bound direction only. All electronic toll (E-ZPass) access tolls as vehicles move at highway speeds over Pennsylvania's toll-free road. 100 mph.

HOME / TRAVEL INFO / SCUDDER FALLS TOLL BRIDGE RATES

Rates apply only to the Scudder Falls Toll Bridge only. A view on the bridge's TOLL BY PLATE tolling process may be viewed [HERE](#). A view on the bridge's Electronic Toll (E-ZPass) collection system may be viewed [HERE](#).

| CLASS | VEHICLE DESCRIPTION | TOLL RATES | | |
|--------------------------------|--|---------------|---------|-----------|
| | | TOLL BY PLATE | E-ZPASS | |
| CLASS 1 (Passenger Vehicle) | Includes vehicles with up to 2 axles and less than 8'6" tall. A passing vehicle with a trailer or vehicle in tow is charged an additional toll regardless of the number of tolling axes. | 2-axle | \$2.60 | \$1.25 |
| | | | | \$0.75* |
| CLASS 2 (Light Truck) | Includes any 2-axle vehicle 8'6" or above in height. Among vehicles in this class are small box trucks, flatbed trucks, school buses, small recreational vehicles, certain appliance vans, and certain conversion vans. | 2-axle | \$8.35 | \$7.00 |
| | | | | \$6.50** |
| | Includes vehicles with 2 or more axles, combinations of Class 2 vehicles or light trucks with trailers, vehicles in tow (combined total of 2 or more axles), and Class 1 vehicles with tow trucks/goodsmen's trailers in tow. | 2-axle | \$14.25 | \$12.75 |
| | | | | \$11.48** |
| | Includes vehicles with 2 or more axles, combinations of Class 2 vehicles or light trucks with trailers, vehicles in tow (combined total of 2 or more axles), and Class 1 vehicles with tow trucks/goodsmen's trailers in tow. | 4-axle | \$19.00 | \$17.00 |
| | | | | \$15.30** |
| CLASS 3 (UP Heavy Truck) | Among vehicles in this class are large box trucks, tractor trailers, Recreational Vehicles, commercial buses, charter buses, and other commercial vehicles. Heavy trucks are charged at the rate of \$4.75 per axle TOLL BY PLATE, \$4.25 per axle with E-ZPass, or \$2.99 (discount) per axle with E-ZPass during off-peak hours (6:00am - 5:00pm). | 3-axle | \$33.75 | \$21.25 |
| | | | | \$19.15** |
| | | 4-axle | \$28.50 | \$25.50 |
| | | | | \$22.95** |
| | | 5-axle | \$33.25 | \$29.75 |
| | | 6-axle | | \$26.75** |

Per-axle rates for Class 3 and above are \$4.25 E-ZPass and \$4.75 TOLL BY PLATE.

*Commuter discount - 40% savings - minimum 30 toll-free trips per month with an E-ZPass transponder issued by the Commissioner of Transportation - the regional toll collector - the regional E-ZPass Customer Service Center, which also carries E-ZPass equipment and toll processing for the following agencies: Delaware River Port Authority, New Jersey Turnpike, South Jersey Transportation Authority, Delaware River Port Authority, Delaware River & Bay Authority, the Burlington County Bridge Commission, and the Cape May County Bridge Commission.

**Off-peak discount - 10% discount 6:00 p.m. - 5:59 a.m. with any commercial E-ZPass transponder.

On June 8, 2017, the Commission ceased charging different rates for cash and E-ZPass transactions for RVs with either a trailer or a car in tow. As a result, any RV with a trailer or car in tow is to be charged at the heavy truck base rate of \$4.25 per axle E-ZPass or \$4.75 per axle TOLL BY PLATE.

E-ZPass customers with questions or disputes are urged to contact the Commission's Customer Service Center at 1-888-368-8465 (1-888-ADRIAN-TOLL) or by visiting www.drapa.com. Cash or E-ZPass customers with additional toll questions may contact the Commission's E-ZPass Department during weekday business hours by calling 1-800-351-6014.

Free Media Efforts

To further foster a conversational buzz about the approaching onset of tolling at Scudder Falls, the Commission utilized its website and press releases to generate news articles and posts on social media platforms.

For example, the Scudder Falls Toll Bridge's toll-rate schedule was newly featured with a graphically enhanced webpage on the Commission's public website. Previously, the toll rates appeared as a statistical document on the agency's website and in the tolling section of the Scudder Falls project website. The new webpage was touted on the website's homepage, in a press release distributed to local media outlets, and through posts on various Facebook community pages viewed by Scudder Falls commuters.

A series of other press releases were issued in the lead-up to the bridge opening. These included a detailed history of the former Scudder Falls Bridge that was about to be removed from service; the announcement of the schedule for opening the bridge; and the rollout of an animated video that explains how the new bridge would be transitioned into service and the travel impacts that commuters could encounter beforehand. That video, which was produced by Stokes Creative Group, was recorded during hundreds of hits within a day of release - a clear indication of mounting public anticipation about the new bridge, the interim travel impacts, and the impending start of tolling.

Second Bridge Span Becomes Primary Focus of Project Construction

Months before the first motorists began to use the Scudder Falls Toll Bridge's first completed span, construction crews unceremoniously kicked off the project's second stage of work.

This work began in December 2018 with the installation of bulkheads and trestle construction along the New Jersey riverbank downstream of the old Scudder Falls Bridge. These structures would be used as a work platform for removing the old bridge and constructing the new toll bridge's second span. These activities continued until the onset of environmental restrictions that prohibit river-bottom disturbances from March 15 to July 1.

In late April, crews began preparations for removing the old bridge. This involved the removal of paint chips and other debris that had collected in bird-deterrent netting installed beneath the old Scudder Falls Bridge several years earlier. The netting was a precautionary measure to ensure that birds – notably peregrine falcons – did not nest beneath the old bridge during construction of the new bridge.

Once the collected debris was vacuumed away, crew removed the netting itself and began installing temporary wooden shielding beneath the portions of the old bridge that crossed over NJ Route 29 and River Road in Pennsylvania. The shielding ensured safe travel for motorists crossing beneath the old bridge when demolition activities began months later.

On July 1, the project's contractor began mobilizing and bringing in materials to construct the temporary in-river work platforms for old bridge removal and new bridge construction from the Pennsylvania side.

Demolition work on the old bridge accelerated almost immediately after the Pennsylvania-bound traffic was shifted onto the new replacement span late July 9. Saw cutting of the old bridge reinforced concrete parapets began the very next morning and heavy equipment began the process of converting a portion of the Pennsylvania-bound roadway into a construction access ramp. Demolition of the old bridge's deck went full-bore a month later after the shift of New Jersey traffic onto the new replacement bridge. This ended the overlap of the project's first two major construction stages.

At this point, Stage 2 work expanded beyond the bridge. Crews began the process of setting foundations for three new approach bridges that will eventually carry New Jersey-bound I-295 traffic to and from the second replacement span once it gets constructed. When completed, these approach structures will cross Taylorsville Road and the Delaware Canal in Pennsylvania, and Route 175, the Delaware & Raritan Canal, and the Route 29 northbound bypass lane in New Jersey.

Other Stage 2 work underway at the close of 2019 included:

- Constructing the Pennsylvania access ramp to the new bridge's dual-use bike-ped facility;
- Building a retaining wall at the NJ Route 175 entrance ramp to I-295 SB;
- Pouring of the second replacement span's land-based New Jersey pier;
- Setting the pile for that span's New Jersey abutment;
- And installing the cofferdam for the in-river pier closest to the New Jersey riverbank.

Only a small portion of the old bridge remained along the river at the end of 2019. The deck was completely gone. Eight of that structure's 10 spans of structural steel and five of its nine pier foundations were removed.



Electronic Sensors, Devices Form Heart Of Scudder Falls' All-Electronic Tolling Facility

The Commission's first All-Electronic Tolling (cashless) facility is a blend of low-tech and high-tech elements that are melded together to assess tolls on Pennsylvania-bound vehicles traveling across the Scudder Falls Bridge at highway speeds.

The facility includes two overhead steel gantries outfitted with transponder readers, vehicle-profiling devices, cameras, and strobes; axle-detection loops embedded in the concrete road surface; and an adjacent concrete and steel building that, among other functions, houses the location's computer servers. Elevated walkways inside the gantries afford technicians easy access for maintaining the pieces of equipment suspended above the roadway.

The equipment arrays are oriented to blanket both the travel lanes and shoulders to ensure every passing vehicle gets recorded despite its rate or path of motion, including cross-lane reads. Working in unison with the embedded roadway sensors and the nearby servers, the equipment-laden gantries frame the transactions that occur at the tolling point.

Each gantry stands roughly 32 feet high, providing approximately 22 feet of clearance above the road surface. The front gantry is oriented to read the rear license plates of passing vehicles and the rear gantry, which is slightly wider, is oriented to read front license plates.

The breakdown of the system's in-lane equipment is as follows:

Front Gantry

- 6 DVAS toll-auditing cameras
- 6 OPUS vehicle profile readers
- 6 VCAR boxes, each containing two license-plate-reading cameras and strobes

Rear Gantry

- 6 DVAS toll-auditing cameras
- 12 OPUS vehicle profile readers
- 11 E-ZPass transponder reading antennas
- 6 VCAR boxes containing two license-plate-reading cameras and strobes

Roadway Surface Sensors

- 12 six-foot by six-foot square ORT Intelligent Sensor Queuing loops (two for each travel lane/shoulder)
- 12 ten-foot by 31.5-inch rectangular ORT Paypoint Sensor Array loops (two for each travel lane/shoulder)
- 5 six-foot by six-foot diamond loops
- 2 six-foot by six-foot by 8.5 foot half-diamond loops
 - » Diamond and half-diamond loops are situated between lanes and/or shoulders to detect vehicles changing lanes



Glossary

DVAS = Digital Video Acquisition System; **OPUS** = Optical Profile Unifying System™; **ORT** = Open Road Tolling; **VCARS** = Vehicle Capture and Recognition System







OLD
SCUDDER
FALLS
BRIDGE



Original Scudder Falls Bridge Fades into History – Piece by Piece

A commuter landmark for more than 58 years, the old Scudder Falls Bridge provided passage across the Delaware River to its final passenger vehicle on the evening of July 26, 2019.

A “state-of-the-art” bridge when constructed in the late 1950s, the river crossing became the bane of rush-hour commuters during its later years due to its obsolete design and capacity limitations that spawned frequent bottlenecks during peak travel times.

The bridge simply outlived its usefulness. It wasn’t designed to handle the traffic demands that began mushrooming in the 1970s and ascended to new levels of commuter frustration with daily logjams in the 1980s, 1990s, and the 2000s. During its first full year of operation in 1962, the bridge carried an average of 4,338 vehicles per day. That number increased exponentially to an average of 60,340 vehicles per day in 2016, the final year prior to the start of the bridge replacement project. To put that in perspective, for each vehicle that traversed the bridge each day in 1962, a multiplier of almost 14 more vehicles used the river crossing on a daily basis in 2016.

The original Scudder Falls Bridge’s story actually begins more than 60 years ago in the unlikelyst of places – the Atlantic Ocean’s tropical waters. In August 1955, two destructive hurricanes struck the Delaware River region within five days of each other. The back-to-back storms dumped over a foot of water, swelling the Delaware River to its highest levels on record.

Hurricane Connie’s rains arrived first. On August 13, its torrential downpours ended a hot summer drought that had left the ground hard and less absorbent, triggering increased runoff into the Delaware. The second storm – Hurricane Diane – curved through Pennsylvania and

across New Jersey August 18–19, deluging much the same area as Connie. The region’s rain-swollen waterways overflowed at new historical crests.

The resulting record flooding destroyed four “free” bridges that were jointly owned at the time by New Jersey and Pennsylvania. The two states annually paid the Delaware River Joint Toll Bridge Commission (DRJTBC) tax subsidies to operate and maintain the bridges on their behalf. Among the four decimated river crossings was the Yardley–Wilburtha Bridge, a steel truss structure that replaced a covered-wooden predecessor that was swept away in the 1903 “Pumpkin Flood.” The steel bridge opened December 26, 1904 and was operated as a privately owned tolled crossing until purchased jointly by Pennsylvania and New Jersey for \$67,500 and freed of tolls on December 21, 1922. Located about four miles north of downtown Trenton, it handled more than 2 million vehicular crossings in 1954.

At approximately 9 a.m. on Saturday, August 20, a house that washed off its foundations upriver lodged itself against a Yardley–Wilburtha Bridge midriff truss. Three Pennsylvania bridge spans, already swamped at the time, quickly went asunder. The *Doylestown Intelligencer* newspaper described the bridge’s final moments: “...the current, using the house as a battering ram, pushed through the center section of the bridge and swept it away.”

Almost immediately after the waters receded, Yardley business owners sought to have a temporary structure erected in place of the Yardley–Wilburtha Bridge. These merchants noted that the crossing held significant importance to the local economy by providing a link to residents across the river in Ewing Township and Trenton.



Plans were initiated in September for the Army Corps of Engineers to erect temporary Bailey structures to replace the demolished Yardley-Wilburtha truss sections. Portable, pre-fabricated Bailey trusses were developed by the British in the early 1940s for use during World War II and were a plentiful surplus at the time of the 1955 flood. The Bailey-truss-endowed Yardley-Wilburtha crossing opened to vehicular traffic after a man dressed as Santa Claus fastened the last connection pin on December 23.

Planning, siting, financing and constructing a permanent replacement bridge proved more challenging. Months of back-and-forth discussions among the states, the municipalities and the Commission dragged on into 1956 before an initial proposal was rolled out to construct a more-elevated, all-steel replacement bridge approximately 100 feet upstream of the damaged Yardley-Wilburtha Bridge.

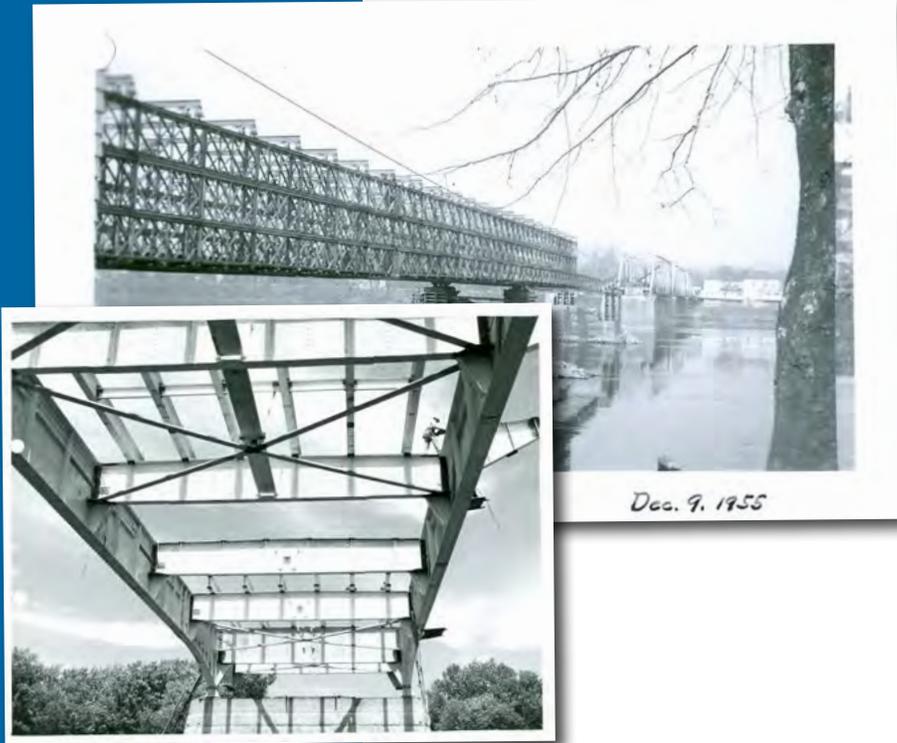
It is worth noting the historical context and national sentiment related to investments in transportation infrastructure at the time. The

replacement-bridge discussing occurred amid a major push by then President Dwight Eisenhower to invest heavily in the creation of a unified national highway transportation system amid the Cold War.

In June 1956, President Dwight Eisenhower signed the Federal-Aid Highway Act of 1956, which would create a 41,000-mile “National System of Interstate and Defense Highways” to provide for safe and efficient continental travel by reducing traffic jams and unsafe roads. Advocates also championed what they saw as another important benefit to the country’s national defense: “In case of atomic attack on our key cities, the road net [would] permit quick evacuation of target areas.”

The national embrace of Eisenhower’s highway building idea notwithstanding, the size, scope, and location of the initial Yardley-Wilburtha replacement plan garnered strong opposition in Yardley. Residents, elected officials and business owners said the envisioned structure would create a “Chinese Wall” that would negatively impact





the business district and be aesthetically unappealing. Additional opposition mounted because the Yardley Library and the historic John L. M. Yardley Estate, constructed in 1728 and from which the borough draws its name, were directly in the path of the proposed bridge and its approach roadways. The controversy surrounding the proposed location prompted the Commission and the two states to explore other potential sites for a new river crossing.

In February 1957, the Bucks County Planning Commission entered the fray, proposing a relative rural site approximately 1.3 miles north of the Yardley-Wilburtha Bridge and just downriver of a set river rapids that generations of area residents called Scudders Falls, Scudder's Falls, or Scudders' Falls (see accompanying article). The planners pitched that this location linking Lower Makefield Township, PA and Ewing Township, N.J. could serve both local traffic and longer-distance travelers.

The DRJTBC's commissioners at a March 22, 1957 meeting unanimously embraced the county planners' site idea. The bridge's design and construction moved briskly after that. An engineering firm, Michael Baker, Jr. Inc., was hired in June to prepare the bridge plans. A public open house

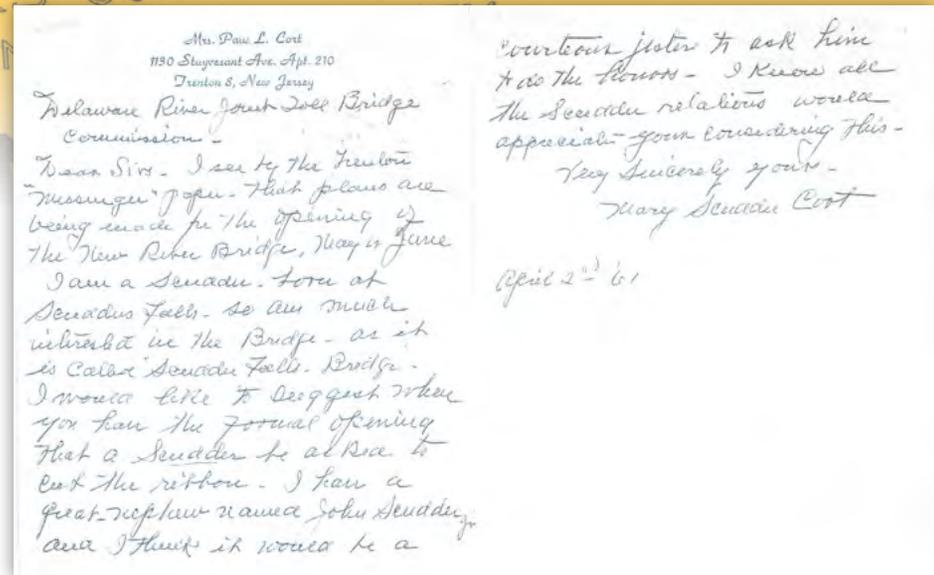
SCUDDERS FALLS BRIDGE

BEEN LOWER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA
AND EWING TOWNSHIP, MERCER COUNTY

It's Scudder, Not Scudders

The Scudder Falls Bridge was named for its geographic location, a long-standing practice of the Delaware River Joint Toll Bridge Commission. The bridge naming, however, necessitated some last-minute corrective actions as a respectful concession to the distinguished Scudder family that had settled in the area over 250 years earlier.

The Scudder lineage started with Richard Betts Scudder, who moved to Trenton in 1696 and proceeded to purchase a 500-acre tract along the Delaware River between Trenton and Washington Crossing in 1709. A grandson – Amos Scudder – further cemented the family's local legacy when as New Jersey Militia ensign who guided roughly half of General Washington's troops to Trenton for their successful surprise attack of Hessian troops on December 26, 1776.



on the project was held in February 1958. Two construction contracts were awarded in June – one for the bridge’s substructures of abutments and piers; the other for the superstructure of steel-plate girders, steel supports, and the concrete road deck and parapets. New Jersey led the bidding process and both contracts were awarded to the Conduit and Foundation Company of Philadelphia, PA. The DRJTBC’s engineering department provided inspection services for the project.

The construction was financed by New Jersey, Pennsylvania and the former federal Bureau of Public Roads. Each state covered 25 percent shares of the project’s cost. Federal participation was the remaining 50 percent of the project costs, with that share of money coming from old U.S. Highway funds. The bridge was not constructed as a federal Interstate Highway System bridge. Several years passed before its approaches were melded into the interstate system.

Substructure construction began August 8, 1958 and reached completion July 16, 1959. Superstructure work began May 25, 1959 with the first delivery of fabricated steel. Erection of steel took 14 weeks and 4 days, ending on September 4, 1959. Two iron workers died during this phase: James D. Wiley, Jr., 23, of Lambertville and John Post, Jr., 29, of Trenton. On June 30, 1959,

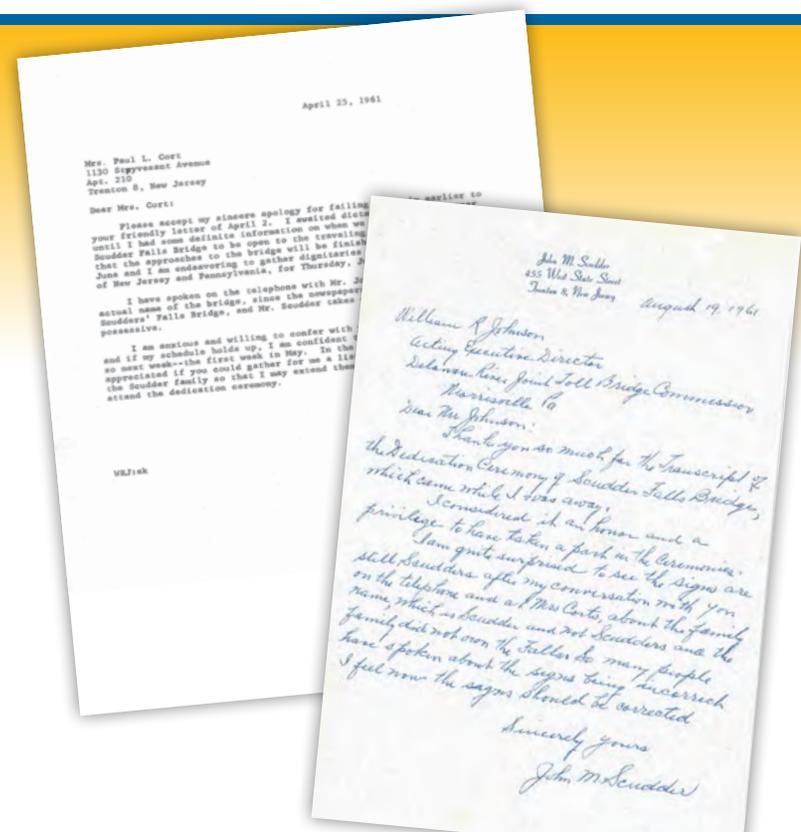
the two men were crushed when a crane boom buckled and fell on them. According to a *Trenton Evening Times* article published July 1, 1959, the 80-foot boom was being used to lift steel off a delivery truck from Bethlehem, PA. when it failed. The article said both men were employed by a subcontractor, the Lehigh Valley Construction Company of Allentown, PA.



Richard Betts Scudder’s property became Scudder Farm as his descendants multiplied and prospered. The sprawling Scudder tract’s proximity to some nearby river rapids caused them to be known as Scudder Falls. Indeed, the family never owned the namesake river section, which became colloquially debased over time as either Scudders Falls or Scudder’s Falls.

The Commission initially employed the pluralized vernacular derivative in 1956 when naming the project to replace the flood-ravaged Yardley-Wilburtha Bridge. The bridge plan sheets all said Scudders Falls. Initial road signs also were worded as Scudders Falls.

In advance of the bridge opening ceremony, communications were initiated between the Commission and Scudder family descendants. An elderly Scudder descendant – Mary Scudder Cort of Trenton – was the first to alert officials to the oversight. Her nephew, retired Trenton businessman John Montgomery Scudder, reinforced his family’s wishes for corrective action when asked to cut the ceremonial ribbon at the bridge’s opening. Seeking to make amends, the Commission and the New Jersey and Pennsylvania highway departments changed as many errant pluralized Scudders references as they could before the bridge’s opening.



Records show approximately 2,500 gallons of paint were applied in three coats to the superstructure's steel work. Laying of the concrete roadways began August 4, 1959 and required 12 weeks and 4 days to complete.

The bridge's construction reached completion October 29, 1959, but the 1,740-foot-long structure remained unused for 20 months because it lacked approach roadways. During this interim period, an interchange connecting the bridge with Route 29 was constructed on the New Jersey side. Meanwhile, the Pennsylvania approach was extended a short distance, abruptly dead ending at Taylorsville Road, just north of Yardley. These initial approaches were constructed by George M. Brewster & Son, Inc. of Bogota, N.J. and completed in the first half of 1961.

A target opening date of January 5, 1961 had to be postponed due to bad weather. In early December 1960, the Bridge Commission's acting executive director, William R. Johnson, announced that premature low temperatures would necessitate an early winter work stoppage until the spring months. As the *Bristol Daily Courier* explained at the time, the contractor working on the approach roadways "had been notified by telegram from both the Pennsylvania and New Jersey Highway Departments that work was to stop. (The) reason is that .75 mile of approach roadway on the Pennsy side will be of concrete. The temperature must be at least 40 degrees before the concrete can be poured."

The bridge's formal dedication and opening took place June 22, 1961 (see accompanying article). Shortly after the ceremony, a *Bristol Daily Courier* editorial heralded the bridge as a "beautiful structure" that "signals the beginning of a new era of easy transportation between Pennsylvania and New Jersey." Nonetheless, many expressed disappointment at the absence of a major highway approach on the Pennsylvania side. Things weren't that much better on the New Jersey side, but the bridge connected with a river-hugging state highway, Route 29, and construction of a short highway segment was progressing quickly to the northeast. This four-lane roadway segment opened in November 1961 as NJ Route 129. Extending about two miles to Scotch Road in Ewing, it was lightly used.

Several years passed before the bridge was linked to a major highway in Pennsylvania. This was largely due to the complexity of mapping a new highway segment to replace the inefficient Route 1 segment through Bucks County while expediting interstate travel from Maine to Florida through the area. During this planning in the Philadelphia and Bucks County region, the roadway was typically referred to as the Delaware Expressway. It would eventually come to be known as I-95.

The Delaware Expressway's route through Lower Bucks County was finalized in December 1965. Then, in July 1967, the Pennsylvania Department of Highways issued a bid request for a 5.95-mile segment of the Expressway that stretched from Woodbourne in Middletown Township to the Scudder Falls Bridge. In December 1969, a limited-access segment of I-95 from the Scudder Falls Bridge to the relocated Route 1 interchange west of Woodbourne officially opened to motorists. In October 1972, the other portions of Bucks County's 18-mile-long I-95 segment finally reached completion. This resulted in a complete, unbroken highway route through Bucks County that the *Doylestown Intelligencer* heralded as the new "Main Street."

Efforts to extend the NJ Route 129 approach stalled through the 1960s and into the early 1970s. This was largely due to stalemates over how to route I-95 from the Scudder Falls Bridge northward through that state. This question ultimately was never settled. Still, transportation planners recognized the necessity for extending Route 129 further into Mercer County after Pennsylvania completed its I-95 segment to the Scudder Falls Bridge. The highway extension on the New Jersey side opened October 31, 1974. Accordingly, the roadway was designated I-95 from the Scudder Falls Bridge to a location east of Route 31 in Hopewell Township. The remainder of the new highway segment was signed I-295 to Route 1 near Bakers Basin in Lawrence Township. (Note: These orphan I-95 segments in Bucks and Mercer counties were re-designated as I-295 in 2018, when the I-95/Pennsylvania Turnpike (I-276) interchange was completed, rerouting I-95 onto the Delaware River Bridge and connecting with the New Jersey Turnpike for uninterrupted travel between Florida and Maine for the first time.)

Scudder Falls Bridge traffic rose after the completed I-95 approach highways created a free-flowing beltway around Trenton. A November 25, 1975 Trenton Evening Times article reported that a comparison of traffic figures in October 1974 and October 1975 showed a 62.17 percent increase – from 500,939 crossings in October 1974 to 812,358 crossing in October 1975. The traffic surge was not caused by an influx of long-distance travelers using I-95. Rather, the increases were largely attributable to job commuters, namely New Jersey residents going to work in Philadelphia and Bucks County, Pa. motorists traveling to jobs in and around Trenton, N.J.

Traffic rates accelerated more in the 1980s, when strong economic expansion fueled new office and retail developments along Mercer County's Route 1 corridor. This growth solidified the Scudder Falls crossing as a "commuter bridge." Over time, the overarching weekday job commuting trend involved Bucks County residents inundating the bridge in the New Jersey-bound

1961 Scudder Falls Bridge Opening: Speeches, Prayers, and 'Mr. First'

The formal dedication and opening of the new bridge took place on Thursday, June 22, 1961.

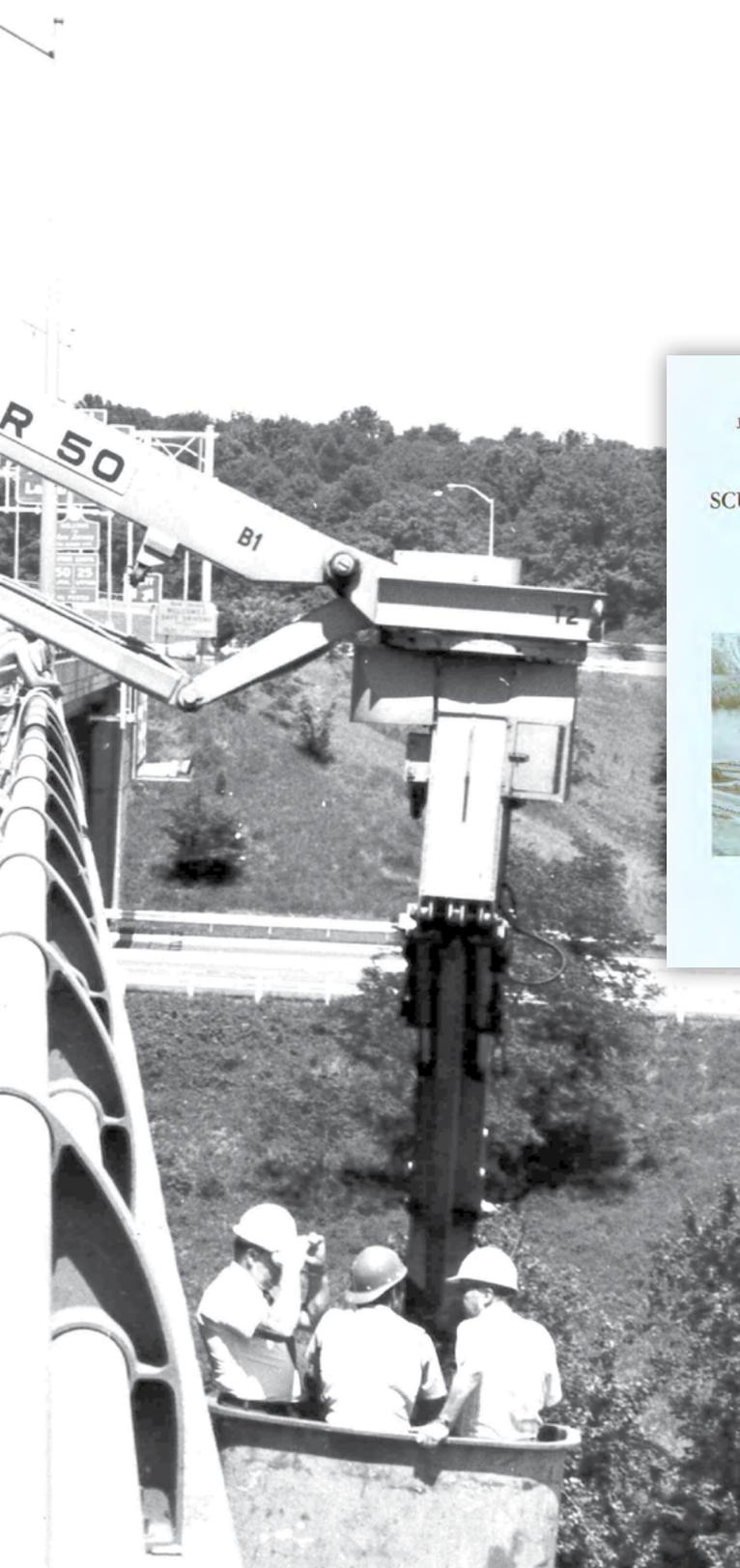
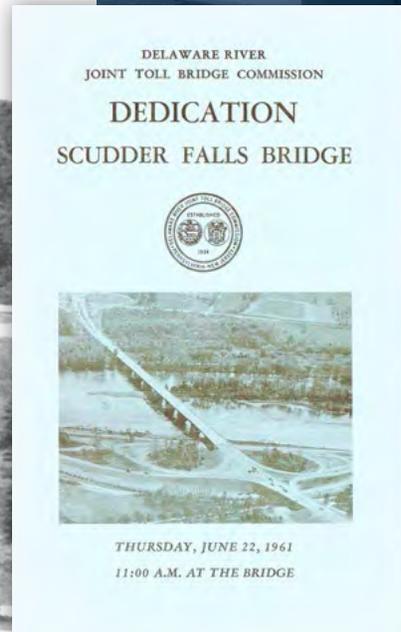
A temporary covered platform was erected atop the bridge deck for the occasion. David J. Goldberg, the vice chairman of the Delaware River Joint Toll Bridge Commission and later the first Commissioner of the New Jersey Department of Transportation, served as master of ceremonies.

Shirley Malmsbury of Morrisville, PA sang the National Anthem. Father Joseph W. McLaughlin, pastor of the Church of Our Lady of Good Counsel in West Trenton, delivered the invocation. Speakers included Harlo P. Beshenbossel, district engineer for the federal Bureau of Public Roads; Captain G. Harrison Hilt of the U.S. Army Corps of Engineers; Park H. Martin, Pennsylvania's secretary of highways; and Dwight R. G. Palmer, New Jersey's state highway commissioner. John Montgomery Scudder of Trenton made some brief remarks before cutting the ceremonial ribbon. Reverend William Stimson, pastor of St. Andrew's Episcopal Church of Yardley, gave the benediction.

The first motorist to cross the formally dedicated bridge was Omero C. Catan, who had earned the nickname "Mr. First" due to a hobby he adopted of being the first person to drive over new bridges, or through new tunnels, or along newly opened highway segments around the country.

Catan, a Teaneck, N.J. resident who worked as a field manager for the New York City-based catering firm Harry M. Stevens, Co., often drove a vehicle festooned with flags to mark his first crossings. Among the more than 500 recorded firsts recorded by Catan were the Lincoln Tunnel on Dec. 22, 1937 and the Delaware River Turnpike Bridge on May 25, 1956.

According to a Levittown Times article, Catan – mustachioed and sporting a bowtie – was the first to arrive at the Scudder Falls Bridge site 6:30 a.m. (The ceremonies didn't begin until 11 a.m.) He was also the first in line to drive across the bridge upon its 12:30 p.m. opening. Catan told the newspaper: "I get so many requests now to be the first across and so on, that I can't possibly make them all. But everybody requests my presence on opening day. Like one man said, 'You brought good luck to others on opening, and we'd like you to give us that blessing.'"





direction during morning peak periods and then re-inundating the bridge Pennsylvania-bound during the evening reverse commute. Some of these Bucks County residents were former New Jersey residents who moved to new housing developments in and around Newtown, Pa.

Rising traffic rates exposed the inherent volume limitations and safety issues with the Scudder Falls Bridge and its approaches. The confusing adjoining highway interchanges were cited as a cause of wrong-way accidents on the bridge. The bridge also lacked a steel-reinforced concrete median divider to prevent crossover accidents for its first 20 years of operation. This finally was rectified in 1981 when the two states, which still jointly owned the bridge, secured federal funds to make a series of structural and operational improvements.

After the two states and the U.S. Congress revised the DRJTBC's Compact in 1987, the states transferred ownership of the Scudder Falls Bridge and 12 older non-toll bridges to the Commission (see accompanying article). The Compact was written in a manner to allow Commission to toll the Scudder Falls location while prohibiting tolling of any of the other conveyed bridges. A corresponding joint-state law clarified that the Commission could not toll Scudder Falls unless it were to one day be replaced. As a practical matter, the geometry and logistics would have prevented the Commission from tolling Scudder Falls at the time of the ownership transfer. There was inadequate space around the bridge to allow for a toll plaza to process cash toll transactions. (E-ZPass technology was not in use anywhere in the country at that time.)

Ownership aside, a red flag about the bridge's structural integrity arose after a portion of the Mianus Bridge along I-95 in Connecticut collapsed in 1983, killing three motorists. A

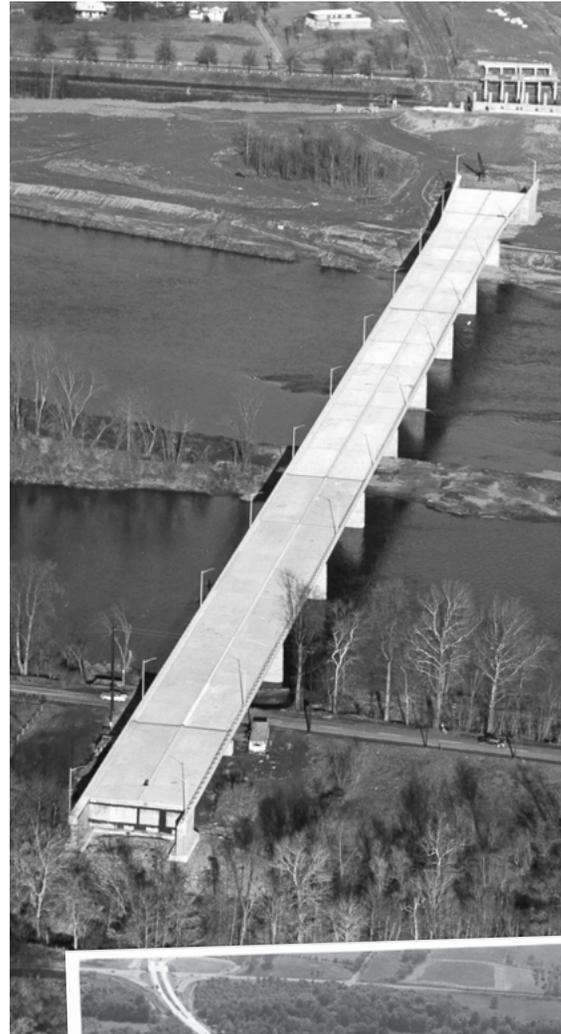
National Transportation Safety Board (NTSB) investigation later determined that the probable cause of the Mianus collapse was an undetected lateral displacement at one of the bridge's pin-and-hanger connections. Investigators further cited corrosion-induced forces arising from poor inspection and maintenance practices by the State of Connecticut. Like Mianus, the Scudder Falls Bridge also had pin-and-hanger suspension assemblies on non-redundant girders. Unlike Mianus, the Commission regularly inspected and maintained its bridge. Nonetheless, the Commission hired a contractor to install an auxiliary support system at each Scudder Falls pin-and-hanger location in 1991.

While these retrofits mitigated any possibility of a Mianus-like collapse at Scudder Falls, they did nothing to address the bridge's operational deficiencies and mounting traffic volumes. These shortcomings were fully articulated for the first time in the *Traffic Study of Trenton-Morrisville Bridge Crossings* over the Delaware River, a report compiled for the Commission in 1990. In September 2000, the DRJTBC commissioned another study defining the transportation needs within a nine-mile area around Trenton, including the Scudder Falls Bridge. A subsequent *Southerly Crossings Corridor Study: Phase 1 Transportation Study* completed in August 2002 identified the Scudder Falls Bridge and its adjoining approach highways and interchanges as the highest priority among bridge projects in the Commission's southernmost service jurisdiction. The Commission responded by inserting a new project into its relatively new Capital Improvement Program: the I-95/Scudder Falls Bridge Replacement Project.

The envisioned 4.4-mile long project was comprehensive. In addition to a new bridge, the undertaking sought to correct a litany of

deficiencies that plagued the entire travel corridor on both sides of the bridge. This included the approach highways and dangerous interchanges. A Memorandum of Agreement among the Commission, the New Jersey Department of Transportation, and the Pennsylvania Department of Transportation was completed in January 2003. This jumpstarted a nearly 10-year-long environmental documentation process that included multiple presentations, traffic studies, hearings, and public outreach. In late 2009, the Commission released the project's Environment Assessment (EA) and announced that the replacement bridge would have an all-electronic toll collection system in the Pennsylvania-bound direction. After issuing an addendum to the EA in 2011, the project's environmental review process formally culminated with the Federal Highway Administration's issuance of a pivotal Finding of No Significant Impact in June 2012. The Commission then weighed the options of carrying out the project as a public-private partnership or proceeding with a conventional design-bid-build procurement. The Commission decided to take the latter approach in July 2014.

A final design contract for the project was awarded in 2015 and a toll schedule for the new bridge was approved in 2016. The Commission hired a contractor and issued bonds to finance the project in early 2017. This set in motion the construction that led to the opening of the first completed replacement span and the shutdown and partial removal of the old traffic-challenged, functionally obsolete Scudder Falls Bridge this past year.



PA and NJ Owned the Scudder Falls Bridge Nearly 28 Years

The Delaware River Joint Toll Bridge Commission (DRJTBC) did not always own the Scudder Falls Bridge.

While the agency played an important role in constructing and later maintaining and operating the bridge, it originally was jointly owned by New Jersey and Pennsylvania.

That's the way the ownership structure worked for the 13 non-toll DRJTBC-system bridges that were purchased or constructed by the two states prior to a sweeping revision to the toll agency's federal Compact in 1987.

Under the updated Compact, the Commission was assigned outright ownership of the former joint-states-owned non-toll bridges – effective July 1, 1987. The Commission henceforth used a share of the proceeds collected at its toll bridges to operate these non-toll crossings as “toll-supported” bridges. The Compact, however, was worded in a manner allowing for replacement of the Scudder Falls Bridge as a tolled crossing at a later date.

The final ownership timeline for the bridge was as follows:

- Pennsylvania and New Jersey jointly owned the bridge from the end of construction on October 29, 1959 to July 1, 1987 – 27 years, eight months, and two days.
- The Bridge Commission owned the structure from July 1, 1987 through its removal from service on July 26, 2019 – 32 years and 25 days.



▲ Uhlerstown–Frenchtown Toll–Supported Bridge



▲ Lumberville-Raven Rock Toll-Supported Bridge





OUTDOOR
PROJECTS



Staff Occupy New Headquarters Near Scudder Falls Toll Bridge

The Commission has a new home. On September 16, the agency's professional staff moved into a modern two-story, wing-shaped office building in Lower Makefield, PA.

This new 35,000-square-foot headquarters was constructed during 2018-19. It includes offices, training rooms, conference rooms, common areas, IT/data center facilities, mechanical rooms, and receiving and storage areas. It features energy-efficient elements such as natural daylighting, rooftop solar panels, sustainable building elements and other life-cycle cost-savings features. The design utilizes a large glass curtainwall and incorporates elements of a truss-bridge structure. The employee parking lot has ground-water recharging features like several storm drainage inlets that lead to an underground storm water management retention system.

Land clearing, utilities installations, girder erection and the roof were the major elements of the building's construction in 2018. This year's work involved the completion of mechanicals, framing and drywall finishing, painting, parking lot and roadway paving, and a sundry other tasks to make the building ready for occupancy.

The facility has fuel pumps for Commission administrative vehicles and a loading/service entrance. As per assurances given to Lower Makefield

Township, no maintenance facilities or functions will be housed at this location. Site-wide landscaping was conducted in the aftermath of construction.

The building replaces the agency's outdated and dysfunctional Morrisville, PA, administration building – a cramped four-story, limestone-faced art-deco-styled structure conceived during the Truman Administration. That old building reached the end of its useful life after 66 years of service. The plan is to make the new building the central hub of Commission operations, allowing the agency to later repurpose its Morrisville location.

In addition to the former Morrisville workforce, the new building houses select personnel who previously worked at the Commission's administration buildings adjacent to the Easton-Phillipsburg (Route 22) and New Hope-Lambertville (Route 202) toll bridges.

The building rests on a three-acre buildable section of a 10-acre parcel the Commission purchased from Lower Makefield Township, PA. in 2016. The property is easily accessible via the I-295/Taylorsville Road interchange (exit 51) and is close to the Commission's new Scudder Falls Toll Bridge, the first span of which was completed in July. (The office building project is a separate undertaking, not part of the much broader and longer-duration toll bridge project.)



The office-building project had three other facets, which also were completed in 2019:

- Reconstruction and right-sizing of a nearby park-n-ride lot;
- Adaptive reuse of a nearby field-stone residence that dates back to 1799 so that it can serve as a trailhead for recreationists using the nearby Delaware Canal towpath and a shared bike-ped path projected to open on the Scudder Falls Toll Bridge in 2020; and
- Installation of a semi-permeable asphalt bike-ped connector path between the park-n-ride lot and the 1799 House.

Repurposed 1799 House Trailhead Opens On PA Side of Scudder Falls Toll Bridge

A former late-18th century dwelling opened in November as an adaptively repurposed trailhead facility near the Scudder Falls Toll Bridge's Pennsylvania abutment.

The field-stone structure – property records show it dates from the year 1799 – has lavatories, access ramps compliant with the Americans with Disabilities Act (ADA), and an open lobby with the building's original stone fireplace and wooden mantel. A bicycle rack and benches are outside the building. A pervious-asphalt path connects the trailhead with a nearby Commission owned and maintained park-and-ride lot.

Dubbed the 1799 House, the structure was repurposed to serve walkers, runners, bicyclists, and other recreationists using the nearby Delaware Canal towpath or, in the future, a new dual-use path being constructed on the new Scudder Falls Toll Bridge's upstream span. Upon completion in late summer 2021, the bridge's dual-use path will link Pennsylvania's Delaware Canal towpath with New Jersey's Delaware & Raritan Canal towpath.

The Commission acquired the 1799 House from private owners in late 2016, one in a series of land purchases made in the lead up to the Scudder Falls Bridge Replacement Project. The former residence, however, was overhauled under an entirely separate project: the construction of a new Commission headquarters building on a nearby adjoining 10-acre parcel bordered by the canal, I-295, Taylorsville Road and Woodside Road in Lower Makefield, PA.

The adaptive reuse of the 1799 House – its prior address was 1167 Woodside Road – began during summer 2018. The stone exterior was restored, structural members were replaced, a new metal roof was installed, and a new foundation was constructed. The building now has new flooring and new windows. The original internal rafters were exposed above the open lobby. Other improvements include upgraded interior and exterior lighting, and new electrical, plumbing and heating/ventilation/air-conditioning service.

The new facility is expected to be open dawn to dusk on a daily basis, just like the nearby canal towpath. The Commission intends to operate and maintain the trailhead facility in perpetuity.



Two Salt-Storage Projects Enhance Winter Storm Response Capability

Construction on two new salt-storage barns took place during 2019, significantly enhancing the Commission's ability to fight winter storms and icy road conditions.

The new salt facilities were erected under separate contracts on the grounds of administration building/maintenance facilities at two locations:

- The Easton-Phillipsburg (Route 22) Toll Bridge in Phillipsburg, N.J., which services that toll bridge and five central-region toll-supported bridges – Uhlerstown-Frenchtown, Upper Black Eddy-Milford, Riegelsville, Northampton Street (Easton-Phillipsburg), and Riverton-Belvidere.
- The New Hope-Lambertville (Route 202) Toll Bridge in Solebury, PA, which services that toll bridge and four southern-region toll-supported bridges at Washington Crossing, New Hope-Lambertville (truss), Centre Bridge-Stockton and Lumberville-Raven Rock (pedestrian-only).

The new structures replace aging, undersized salt sheds that had a series of design and operational deficiencies. These include insufficient capacity, structural and drainage issues, poor lighting, and limited ingress/egress for purposes of unloading/loading road salt.

The new salt barns are of similar design to the high-arch gambrel structures constructed at the Portland-Columbia Toll Bridge in 2010 and the Milford-Montague Toll Bridge in 2017-18.

The barn at Easton-Phillipsburg is 4,000 square feet with the capacity to store 2,000 tons of salt. The building also has an attached 400-square-foot open-style lean-to on one side and a 400-square-foot enclosed shed on the other side to house maintenance-related equipment and supplies.



The 2,021-square-foot structure at New Hope-Lambertville can store 500 tons of salt. The building also features a 1,138-square-foot lean-to-styled roof on one side that can be used for storage of maintenance vehicles and equipment. Under the project, a nearby timeworn garage building was demolished, but an adjoining shed was outfitted with a new concrete floor, siding and roof to provide additional storage space for equipment and dry goods.

The bulk of construction on the two salt sheds occurred in 2019, but some uncompleted aspects of the New Hope-Lambertville facility will carry over into early 2020.

The two salt barns are part of an ongoing effort by the Commission to upgrade and expand its storm-response capabilities. The new facilities should enable the agency to fight multiple storms without the need for numerous commodity resupply over the course of each winter.



Design Work Underway for New Southern Region Support Facilities

With the opening of new executive offices at Scudder Falls, the Commission moved ahead with parallel plans to overhaul its Morrisville administration building site and design an entirely new maintenance facility in the Langhorne section of Middletown Township, PA.

The dual-prong effort aims to improve the maintenance, security, toll collection and salt storage capabilities in in the Commission's Southern Region, which includes nine bridges – from the Trenton–Morrisville (Route 1) Toll Bridge to the Lumberville–Raven Rock Toll–Supported Pedestrian Bridge.

A substantial portion of the nearly 70-year-old Morrisville location is expected to be rebuilt. Under the plan, the location's aging, outmoded four-story administration building will be razed and replaced with a smaller and more contemporary structure that would serve as a security and toll hub. The site also will be outfitted with a larger, more environmentally sound salt building and new utility-service lines.

Meanwhile, the Commission plans to slightly down-scale its maintenance presence at Morrisville by constructing a new facility on a six-acre tract the agency purchased in Middletown Township in late 2018 and early 2019.

The tract includes a former turkey farm with two former residences and several outbuildings (shacks and trailers). The site is near the intersection of Big Oak and Woodbourne roads and is bordered by a landscaping business, railroad tracks, and a PECO electric utility substation. The property is zoned for light industry and is roughly equidistant to the Trenton–Morrisville (Route 1) Toll Bridge and the Commission's new Scudder Falls (I-295) Toll Bridge.

Final design for the re-use of the Morrisville site was already underway at the time agency staff moved into their new quarters at Scudder Falls on September 16. The Commission's board of directors, however, did not formally authorize final design work for the Langhorne location until later in the month.

The goal is to construct the new Morrisville salt shed in time for the 2020–21 winter storm season. The installation of new utility lines for the Morrisville location also is expected to be completed in 2020. This should allow for demolition of the site's Truman-era administration building in early 2021, followed by the construction of the envisioned security/toll hub structure in 2021–22.

At Langhorne, the Commission has hired a contractor for site clearing. That work is expected to reach completion in spring 2020. Final design should reach completion in the summer, allowing a construction contract to be awarded in the fall and work to begin in early 2021. The priority would be to have the site's salt-storage facility completed in time for winter 2021–22 and the larger maintenance building and vehicle yard finished sometime in 2022.

The Langhorne site would primarily handle the routine maintenance needs of the new dual-span Scudder Falls (I-295) Toll Bridge and the Commission's new administrative office building at Scudder Falls. In limited, more-complex instances, the Langhorne location also could provide repair/maintenance services for the Trenton–Morrisville Toll Bridge and the New Hope–Lambertville (Route 202) Toll Bridge and six smaller, Southern Region toll-supported bridges: Lower Trenton ("Trenton Makes"), Calhoun Street, Washington Crossing, New Hope–Lambertville, Centre Bridge–Stockton, and Lumberville–Raven Rock (pedestrian).







YEAR IN REVIEW



Year in Review: New Contracting Program, Scofflaw Trucking Lawsuits, More Financial Savings Highlight a Busy 2019

While the marquee Scudder Falls Bridge Replacement Project garnered significant attention in 2019, the agency managed to score a series of successes on financial, legal and contractual fronts during the year.

Outlook Improves for Commission Finances

In February, Moody’s Investor Service revised the Commission’s financial outlook to stable instead of the previous negative status while reaffirming A1 rating for the DRJTBC’s revenue bonds.

In explaining its rationale, Moody’s cited the Commission’s independent rate-setting ability and low toll rates that provide economic flexibility if it were to become necessary to raise tolls. Moody’s further explained its stable outlook reflected an expectation of the Commission completing its Scudder Falls bridge project on time and on budget by the end of 2021.

Other factors that figured into the Moody’s evaluation included:

- Long history of stable traffic volumes
- Progress in funding its post-retirement benefits liability of retirees
- Closed flow of funds and no funding of non-bridge-related development with Commission funds
- Good management and governance practices

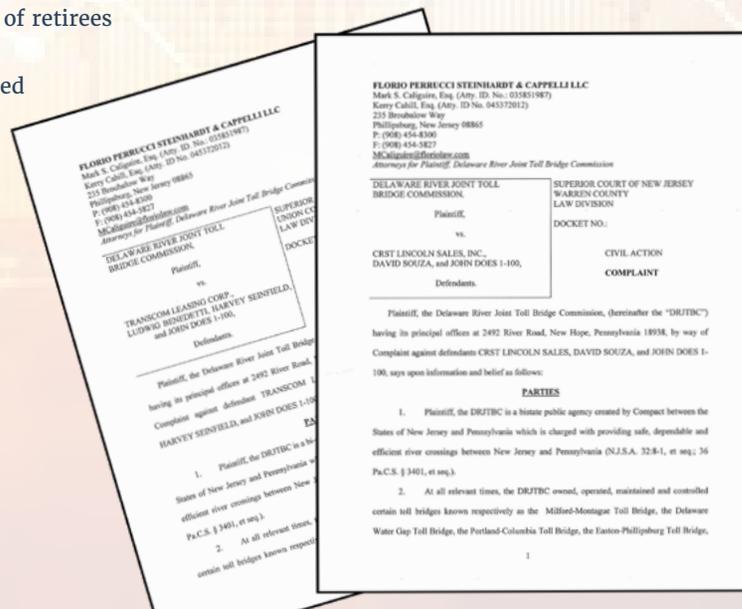
Lawsuits Target Scofflaw Trucking Firms for Overdue Tolls

Joining a growing trend among toll agencies regionally and nationally, the Commission initiated legal action against 20 trucking firms that repeatedly evaded payment at the DRJTBC’s toll plazas.

The lawsuits marked the first time the Commission went to court to collect from toll scofflaws. Each lawsuit involved a trucking company – and its respective owners – that rung up repeated violations while ignoring multiple notices to make payment.

In July, the Commission announced that the crackdown resulted in payments from two trucking companies:

- CRST International, Inc. based in Cedar Rapids, Ia. paid \$43,188.15 in outstanding toll and violation administrative fees recorded at Commission toll bridges between February 2016 and July 2019.
- Transcom Leasing Corp. based in Union, N.J. paid \$5,000 in outstanding tolls recorded between April 2014 and October 2018.



I-78 Road Repairs Usher in New Small-Project Procurement Program

A new procurement tool was utilized for the first time in 2019 to help the Commission secure contractors for smaller, short-duration repair and improvement projects.

This new Job Order Contracting process enables the Commission to pursue projects that previously would not have attracted competitive bids from multiple contractors. The program enables the Commission to secure smaller contractors for an assigned period to quickly begin smaller individual construction activities based on publicly bid percentage mark ups. Over time, it is hoped that Identified Business Enterprise contractors will choose to directly take part in the program.

Commissioners approved the program in 2018, authorizing procurements of one contractor to handle small bridge/road projects and another contractor to handle building/facility projects in respective portions of the Commission's service jurisdiction.

In September, a roughly eight-week-long repair project along the Commission's 4.2-mile I-78 roadway segment in New Jersey became the agency's first executed job-order contract. The work primarily addressed a series of deteriorated asphalt joints along both directions of the highway east of the I-78 Toll Bridge. Other tasks involved pothole repairs, striping and reflective marker replacement where removed during the joint repairs. All of the work was conducted during low-traffic-volume overnight periods.

In October, the Job Order Contracting program was used to replace or reset several pier stones on the Washington Crossing, New Hope-Lambertville, and Lumberville-Raven Rock toll-supported bridges. The pier stones had been dislodged during flood events. The stones were re-installed and pointed with mortar.



A video of the Delaware River Joint Toll Bridge Commission's 4.2-mile-long New Jersey I-78 segment may be viewed on YouTube at: <https://www.youtube.com/watch?v=jPz0lw3to7k&feature=youtu.be>



Bond Transactions Reduce Debt, Eliminate Rate Fluctuations, Enhance Capital

Two financial transactions during the year enabled the Commission to reduce its prior debt service obligations, eliminate unanticipated interest rate fluctuations, and establish a construction fund for upcoming capital projects.

The two transactions – one involving bond redemptions and the other a refunding deal – were bolstered by advantageous bond market conditions and strong grade-A credit ratings for Commission bonds. Combined, the two transactions enabled the Commission to do the following:

- Defeasé slightly more than \$50.73 million of outstanding bonds and associated interest expense;
- Redeem \$98.4 million of risk-prone variable rate bonds and a like amount of interest rate swaps;
- Create an \$85 million construction fund for three large capital projects and various smaller projects over the next several years; and
- Achieve a combined net present value savings of \$4.3 million.

On July 2, the Commission completed a transaction that optimized the use of its general fund balance by allocating \$55.6 million to an escrow account specifically dedicated to redeeming portions of bonds that were issued in 2012 and 2015. As a result of this action, the Commission reduced its prior debt service by a total of \$68.3 million.

On July 31, the Commission received the proceeds of a second transaction involving a combined \$173.37 million bond offering that went to pricing on

July 16. This transaction involved the sale of \$73.64 million Bridge System Revenue Bonds, Series 2019A, and \$99.73 million Bridge System Revenue Refunding Bonds, Series 2019B.

The Commission received orders for the bonds from 51 different investors, including 28 new buyers that did not previously hold Commission bonds. The total amount of orders for bonds was \$1.35 billion, or 7.7 times the amount of bonds offered for sale. Based on this demand, the Commission achieved a true interest cost (TIC) of 2.2 percent.

The Series 2019A bonds were issued to finance a new \$85 million construction fund for several upcoming projects. These included – but were not limited to – the following:

- Construction of a new southern region operations facility, maintenance garage and salt storage facility to be built on recently purchased Commission property in Langhorne, PA that provides tactical access to I-295 and Route 1;
- Demolition and reconstruction of toll operations and maintenance facilities on the site of the Commission's obsolete administration building adjacent to Route 1 in Morrisville;
- Floor-system replacement and rehabilitation of the Commission's Northampton Street Toll-Supported Bridge linking Easton, PA and Phillipsburg, NJ.

Proceeds from the Series 2019B bonds were used to redeem the Commission's outstanding Series 2007B variable-rate bonds and terminate their associated swap agreements that had been in place since 2007.

Maintenance Crews Get Good Grades on I-78 Exit Ramp

In March, Commission maintenance forces planned and executed an in-house project to rectify a nettlesome drainage and roadway-freezing issue along the I-78 Eastbound exit ramp to Routes 22 and 173 in Pohatcong, N.J.

Ostensibly a grading project, the work involved the removal of 20 tons of soil and the placement of 60 tons of three-inch stone along the ramp. A berm was established next to a grassy drainage bowl. Roughly 2,500 feet of shoulder and grounds was regraded.

The improvements worked as planned, preventing highway-runoff from spilling across the exit lane during and after rain, snow, and icing events. The situation had been particularly problematic in wintertime, as maintenance crews increasingly had to salt the ramp repeatedly due to refreezing. Now that threat has been mitigated.

The short-duration project was carried out by maintenance personnel assigned to the I-78, Portland-Columbia and Delaware Water Gap toll bridges. The work was planned and managed by I-78 Maintenance Foreman Bob Varju and Assistant Foreman Nat Amato.





▲ Milford-Montague Toll Bridge

Statements of Net Position

| | December 31, 2019 | 2018 |
|--|------------------------|------------------------|
| ASSETS | | |
| Current Assets | | |
| Unrestricted Assets: | | |
| Cash and Cash Equivalents | \$16,449,375 | \$26,042,912 |
| EZPass, Pay by Plate and Violations Receivable (net of allowance for uncollectibles) | 9,925,233 | 6,690,567 |
| Other Receivables | 326,802 | 351,853 |
| Fiduciary Fund Receivable | 1,134,633 | 1,065,316 |
| Prepaid Expenses | 251,955 | 1,463,057 |
| Total Unrestricted Assets | 28,087,998 | 35,613,705 |
| Restricted Assets: | | |
| Cash and Cash Equivalents | 37,810,950 | 27,987,810 |
| Investment Income Receivable | 1,228,937 | 814,143 |
| Total Restricted Assets | 39,039,887 | 28,801,953 |
| Total Current Assets | 67,127,885 | 64,415,658 |
| Non-Current Assets | | |
| Unrestricted Assets: | | |
| Investments | 173,155,564 | 217,567,086 |
| Restricted Assets | | |
| Investments | 223,148,873 | 251,237,133 |
| Prepaid Bond Insurance | 85,725 | 462,854 |
| Total Restricted Assets | 223,234,598 | 251,699,987 |
| Net Other Post-Employment Benefits | | - |
| Capital Assets: | | |
| Capital Assets Not Being Depreciated | 259,748,822 | 458,816,748 |
| Capital Assets Being Depreciated (Net of Accumulated Depreciation) | 638,731,304 | 304,944,589 |
| Total Capital Assets | 898,480,126 | 763,761,337 |
| Total Non-Current Assets | 1,294,870,288 | 1,233,028,410 |
| Total Assets | \$1,361,998,173 | \$1,297,444,068 |

December 31, 2019 2018

DEFERRED OUTFLOW OF RESOURCES

| | | |
|--|---------------------|---------------------|
| Accumulated Decrease in Fair Value Hedging Derivatives | - | \$16,015,297 |
| Deferred Loss on Refunding of Debt | \$23,233,776 | 8,071,787 |
| Deferred Outflows - OPEB | 11,783,277 | 2,143,324 |
| Deferred Outflows - Pension | 20,966,317 | 13,180,882 |
| Total Deferred Outflow of Resources | \$55,983,370 | \$39,411,290 |

LIABILITIES

| Current Liabilities Payable from Unrestricted Assets | | |
|---|-------------------|-------------------|
| Accounts Payable and Accrued Expenses | \$26,350,422 | \$19,234,571 |
| E-ZPass Customer Liability | - | 100,364 |
| Compensated Absences - Current Portion | 109,475 | 148,169 |
| Retainage Payable | 22,651,848 | 17,882,108 |
| Total Current Liabilities from Unrestricted Assets | 49,111,745 | 37,365,212 |

Current Liabilities Payable from Restricted Assets

| | | |
|---|-------------------|-------------------|
| Accrued Interest Payable on Bonds | 16,020,311 | 14,091,883 |
| Bridge System Revenue Bonds Payable - Current Portion | 16,305,000 | 13,840,000 |
| Total Current Liabilities Payable from Restricted Assets | 32,325,311 | 27,931,883 |

Non-Current Liabilities

| | | |
|---|----------------------|----------------------|
| Compensated Absences Payable | 2,370,440 | 2,173,144 |
| Bridge System Revenue Bonds Payable - Non Current Portion | 766,580,972 | 731,927,628 |
| Premium Payment Payable - Derivative Companion Instrument | - | 287,636 |
| Derivative Instrument - Interest Rate Swaps | - | 16,015,297 |
| Net OPEB Liability | 25,033,652 | 14,739,507 |
| Net Pension Liability | 71,686,473 | 57,366,847 |
| Total Non-Current Liabilities | 865,671,537 | 822,510,059 |
| Total Liabilities | \$947,108,593 | \$887,807,154 |

Deferred Inflows of Resources

| | | |
|--|---------------------|---------------------|
| Deferred Inflows-OPEB | \$17,633,561 | \$19,364,779 |
| Deferred Inflows-Pension | 1,886,817 | 4,372,062 |
| Total Deferred Inflows of Resources | \$19,520,378 | \$23,736,841 |

NET POSITION

| | | |
|--------------------------------|----------------------|----------------------|
| Net Invested in Capital Assets | \$323,663,661 | \$224,324,244 |
| Restricted | 76,124,091 | 34,990,737 |
| Unrestricted | 51,564,820 | 165,996,382 |
| Total Net Position | \$451,352,572 | \$425,311,363 |

Traffic Counts

| Annual Average Daily Traffic* | |
|---------------------------------|----------------|
| Toll Bridges | 2019 |
| Trenton-Morrisville Route 1 | 62,000 |
| Scudder Falls Toll I-295** | 20,800 |
| New Hope-Lambertville Route 202 | 12,600 |
| I-78 | 66,400 |
| Easton-Phillipsburg Route 22 | 35,800 |
| Portland-Columbia | 7,800 |
| Delaware Water Gap I-80 | 51,300 |
| Milford-Montague Route 206 | 7,100 |
| Total - Toll Bridges | 263,800 |

| Annual Average Daily Traffic* | |
|---------------------------------------|----------------|
| Toll-Supported Bridges | 2019 |
| Lower Trenton | 15,500 |
| Calhoun Street | 15,400 |
| Scudder Falls I-295*** | 26,500 |
| Washington Crossing | 7,300 |
| New Hope-Lambertville | 12,600 |
| Centre Bridge-Stockton | 5,000 |
| Uhlerstown-Frenchtown | 5,400 |
| Upper Black Eddy-Milford | 3,500 |
| Riegelsville | 3,200 |
| Northampton Street | 16,900 |
| Riverton-Belvidere | 5,100 |
| Total - Toll Supported Bridges | 116,400 |

| | |
|---|----------------|
| Total Commission-Wide Annual Average Daily Traffic | 380,200 |
| Total Commission-Wide Yearly Traffic | 138.7M |



▲ New Hope-Lambertville Toll-Supported Bridge

*Incidences where there are lower traffic counts may be a result of construction, bridge closures, or data-collection issues. Data reflects traffic in both directions. **Scudder Falls Toll Bridge opened to traffic 7/14/19 – Daily average of 44,500 vehicles over ensuing 171 days in 2019. ***First span of replacement toll bridge opened to traffic in PA-bound direction only overnight July 9, 2019. Crossing operated without tolls 194 days in 2019 with daily of 49,900 vehicles during that period.



▲ Centre Bridge–Stockton Toll–Supported Bridge



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Upper Black Eddy-Milford Toll-Supported Bridge

Joseph Resta