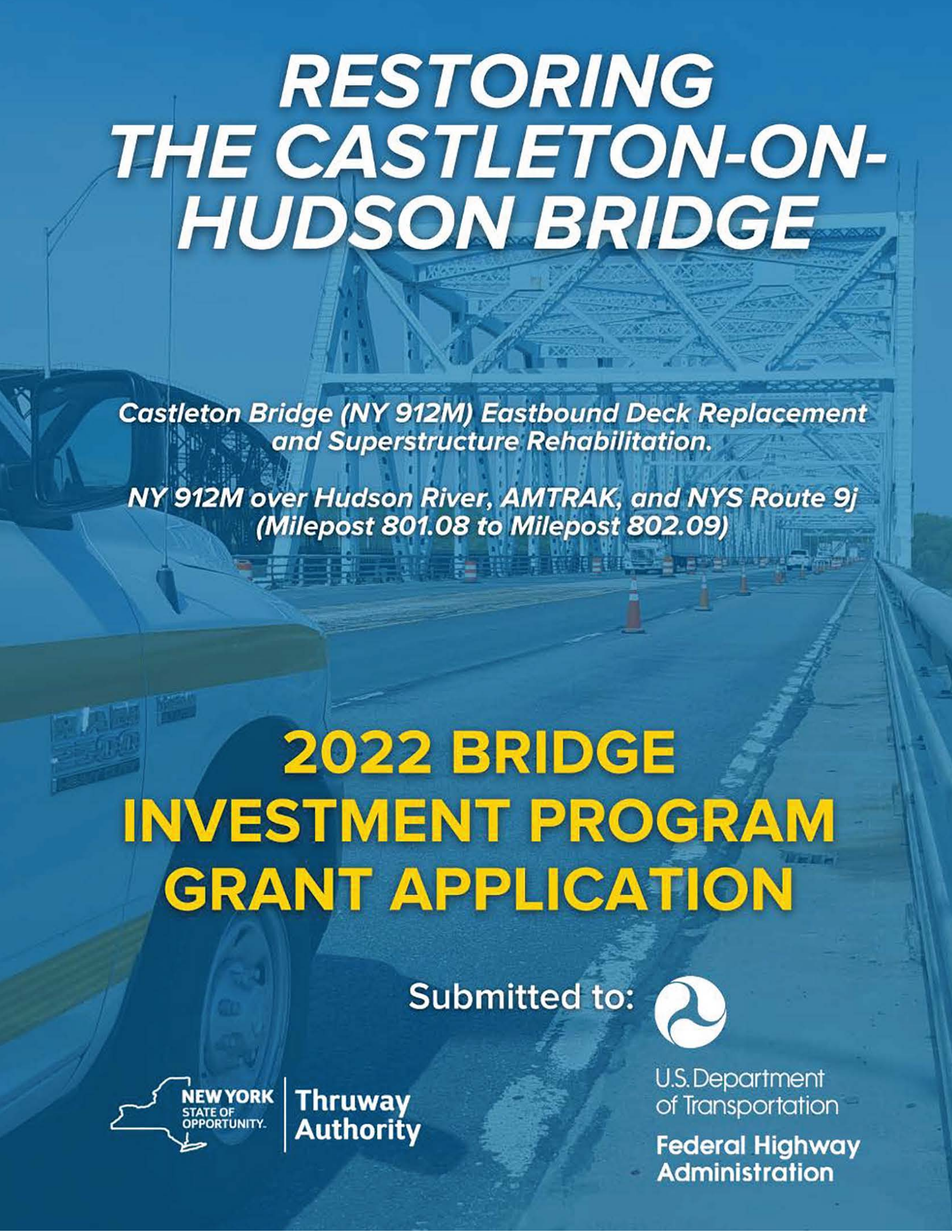
RESTORING THE CASTLETON-ON-HUDSON BRIDGE



Castleton Bridge (NY 912M) Eastbound Deck Replacement and Superstructure Rehabilitation.

NY 912M over Hudson River, AMTRAK, and NYS Route 9j (Milepost 801.08 to Milepost 802.09)

2022 BRIDGE INVESTMENT PROGRAM GRANT APPLICATION

Submitted to:

NEW YORK STATE OF OPPORTUNITY. | Thruway Authority

U.S. Department of Transportation

Federal Highway Administration

TABLE OF CONTENTS

RESTORING THE CASTELTON-ON-HUDSON BRIDGE

FY 2022 BRIDGE INVESTMENT PROGRAM (BIP) BRIDGE PROJECTS APPLICATION

A detailed Project Schedule, Project Budget, Infrared and Ground Penetration Report, and a Design Report providing additional background for this project are included as reference materials for this project, along with additional project information, maps, and graphics. The grant application materials for this project can also be found at *https://www.thruway.ny.gov/oursystem/bridge-investment-grants/*

I. BASIC PROJECT INFORMATION

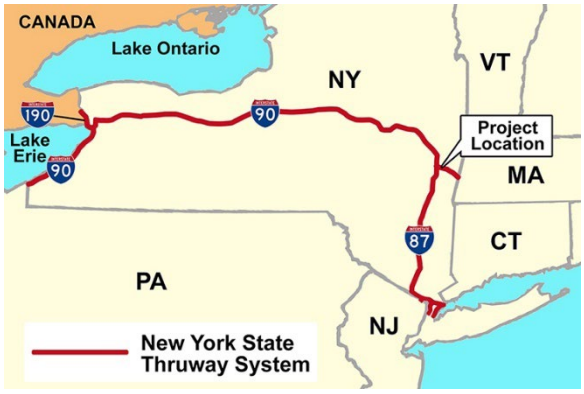
Project Name

Restoring the Castleton-On-Hudson Bridge

Project Location

New York State Thruway Berkshire Connector (NY 912M), spanning between Milepost 800.5 to Milepost 801.6
Towns of Selkirk and Schodack, Albany and Rensselaer Counties, New York

Latitude 42.506332995, Longitude -73.76349196



Eligibility Criteria

Project Description

Project Overview

This project will rehabilitate and strengthen deteriorated sections of conditionally at-risk elements of the Castleton-On-Hudson Bridge (BIN# 5006599). The Bridge is on the National Bridge Inventory under 23 U.S.C. 144(b).

This project addresses the NBI "Poor" rated and quickly deteriorating "Fair" rated elements of the eastbound bridge superstructure. Proposed work includes replacement of the eastbound structural deck with a new superstructure slab with integral wearing surface, steel repairs to girders for the approach spans and truss members of the truss spans, installation of a concrete approach slab at each bridge approach, modification to the existing concrete abutment at each approach, and replacement of non-conforming bridge rail with a conforming steel four rail TL-4 system.

The Authority is currently advancing a $47.6 million project of similar scope, for the westbound area of the superstructure. With completion of these two projects, anticipated service life of the superstructure will be extended by 50 years.

Castleton-on-Hudson Bridge

The Castleton-on-Hudson bridge is a 5,330 foot long, multi span structure with three through truss main spans and 40 multi girder approach spans carrying the Berkshire Connector over the Hudson River. A maximum vertical clearance of 135 feet is provided over a 360 feet wide navigation channel below

Construction of the bridge was completed in 1958. The bridge was originally constructed to provide 25-foot-wide roadway surface in each direction. The bridge section is typically comprised of two 12-foot mainline lanes in each direction, 6-foot left shoulders and 3-foot right shoulders. The estimated two-way Annual Average Daily Traffic (AADT) is about 17,000, with 28-30% truck volume.

Context of Other Infrastructure Investments

The Authority completed a Design Report in 2020 which recommended replacement of the entirety of the bridge deck for the Castleton Bridge and to address numerous other repairs to the superstructure. The Design Report concluded that costs of needed work were beyond the project budget. Thus, a construction project, currently underway, was advanced to complete the proposed scope of work for the westbound and median portions of the superstructure, and to defer replacement of the eastbound deck. The first phase of the currently selective deck repairs to the eastbound portion of the bridge deck, limited to retains short-term functionality.

In 2021, the Authority substantially completed a $355 million project to convert the entire 575-mile New York State Thruway system to cashless tolling. This included the removal of the Canaan Toll Barrier and B1 and B2 Toll Plazas which are located on the same Berkshire section of highway as the Castleton Bridge. In addition to reducing congestion, these projects also significantly contributed to the Authority's efforts to reduce greenhouse gas emissions (GHG) from slowed or idling vehicles at toll barriers.

To further modernize the system, improve resiliency, combat climate change, and provide for community connections across the system, the Authority has advanced and is planning to advance the following projects within the greater project area:

- TABS 18-3 1R Mill and Inlay, Drainage and Safety Improvements between MP B5.70 and MP B17.60 ($11.74 million – Completed 2018)
- TABS 18-20 Rock Remediation on the Berkshire from MP 14.25 to MP 14.80 ($7.1 million – Completed 2018)
- TABS 19-25B Replacement of Interchange B2 Ramp over Berkshire Spur at MP B15.09 ($7.62 million – Completed 2021)
- TABS 20-9B Steel Repairs and Misc. Painting at Rte. 295 over Berkshire Thruway (I-90) at MP B16.26 ($.920 Million – Completed 2021
- TABS 21-1B Rehabilitation of the Castleton-On-Hudson Bridge ($47.6 million – Scheduled completion 2022)
- Bridge Preservation at MP 111.13 (Kaaterskill) and 113.2 (Catskill Creek) ($4 Million – Scheduled completion in 2024)
- Leeds-Old Kings Highway Bridge over Thruway Replacement ($7.5 million – Scheduled completion 2024
- Pavement Resurfacing from MP 801.6 to MP 805.7 (Berkshire Spur) ($7.5 Million – Scheduled completion in 2026)
- Rehabilitation and strengthening of a nearby deteriorated bridges at MP 122.21 (Rt 81) and 134.61 (Rt 396) ($3 million - Scheduled completion in 2026)

Project Description
(continued)

Transportation Challenges and Solutions

Supplemental information providing additional background to the following Transportation Challenges and Solutions is available within the reference Castleton Design Report, and Infrared *and Ground Penetration Report.*

- **Challenge #1: Condition of the existing concrete bridge deck**

  The westbound portion of the deck is being replaced under project TABS 21-1B. Selective concrete repairs were made to the eastbound deck in order to defer replacement until funding for work can be obtained. Prior to the contract work, the Authority performed repairs to the concrete deck monthly as punch-throughs and other deterioration occurred.

  Recent inspections, confirmed by the selective deck repairs performed under the ongoing project, have identified substantial accelerated deterioration of the eastbound concrete deck. Based on the advanced deteriorated condition of the eastbound deck and past performance of repairs, it is anticipated that the repairs made under contract will not last long and the frequency of deck repairs will continue to increase. Since the existing eastbound deck has reached the end of its service life, deck replacement is the only feasible option to economically retain use of the eastbound superstructure.

  Challenge #1 Solution

  This project will replace the eastbound concrete bridge deck. With completion of the eastbound deck replacement, the entire structure will be returned to a state of good repair and require only routine preventative maintenance for the anticipated 50-year service life of the new concrete bridge deck.

- **Challenge #2: Condition of expansion joints in the bridge deck**

  The expansion joints in the bridge deck are in poor condition with many of the joint seals torn away from the deck concrete. These damaged seals are allowing water and debris to leak down onto the steel superstructure elements below. This leakage is causing corrosion of the steel and section loss to the elements. Resultant deterioration has caused few of the members to experience enough section loss to lower their inventory load ratings below HS-20.

  Challenge #2 Solution

  As part of this project, new expansion joints will be provided in the new concrete deck in the same locations as the existing joints. These joints will be typical 2 cell modular joints for the approach spans and 4 cell modular joints for the ends of the truss spans. The replacement of the expansion joints in the eastbound deck will complete the expansion joint replacement for the entire deck and return it to a state of good repair, requiring only routine preventative maintenance for the anticipated 10-year service life of the new expansion joints.

Project Description (continued)

- **Challenge 3: Corroded bridge superstructure steel floor system elements**

  Due to deteriorated expansion joints, some steel stringers and floor beams have significant section loss. The section loss results in a current inventory load rating of less than AASHTO HS-20 Live Load. Also, the approach span facia girders have fatigue sensitive details that require special inspection effort and frequent maintenance repairs.

- **Challenge #3 Solution**

  As part of this project, bridge superstructure steel floor system elements will be examined during the ongoing in-depth bridge inspections. Areas identified as in need of restorative work will be improved using best practices. These superstructure steel members will be returned to a state of good repair and will require only routine preventative maintenance for the anticipated remaining 75-year service life of the structure. Also, while the bridge deck is removed, the fascia girders will be replaced, thus eliminating the fatigue sensitive details.

- **Challenge #4: Non-standard bridge rail**

  The current 4 rail steel bridge rail along the eastbound direction is non-conforming to current standards, per the NYSDOT Bridge Manual. The minimum test level bridge rail required is TL-4.

  Challenge #4 Solution

  This project will replace the bridge rail with current TL-4 rail along the eastbound direction. The bridge rail along the westbound direction is being replaced under an ongoing contract.

- **Challenge #5: Inspection Access to Existing Non-Ratable Fracture Critical Structural Steel Areas**

  As presently configured, interior gusset plate areas (similar in design to the I-35 Minnesota structure which collapsed) at the deck level of the truss spans cannot be rated during inspection due the presence of the adjacent facia girder. Redesign of this structural detail is needed.

  Challenge #5 Solution

  This project will replace the truss facia girders using a design which will allow capability for future inspection and maintainance access to the previously unratable portions of fracture critical gusset plates

- **Challenge #6: Safety**

  Vehicular Safety: Accident data (2017-2021) for this segment of the Berkshire Connector documents 14 accidents including obstruction/debris/pavement (35.7%), unsafe lane changing (21.4%), following to close (7.1%) and failure to keep right (7.1%). Many of these accidents are attributed to vehicles weaving or slowing down to avoid potholes in the deck or due to restrictive travel area associated with the frequent workzone lane restrictions that are utilized in order for Authority Maintenance forces to perform corrective repairs.

  Skid resistance, which is the force that prevents a non-turning (i.e., locked-up) tire from sliding on the pavement's surface is now compromised due to aging of the existing concrete. To address friction deficiency, which controls skid resistance performance, is to install longitudinal or transverse cuts (grooves) into the surface or to provide a new wearing surface.

Project Description (continued)

Maintenance Personnel Safety: The Castleton bridge retains its original physical safety features for use by maintenance personnel. These include fixed ladders with cages, which are currently being phased under Occupational Safety and Health Administration (OSHA) Regulation 1910.28, in favor of ladder safety systems and personal fall arrest systems. Conformance with this OSHA standard is mandatory by 2036.

Challenge #5 Solution

Vehicular Safety: This project contributes to the Safety criteria by reducing the number of crashes on or near the bridge. First, installation of a new structural deck will eliminate the near constant application of workzone lane closures (more prone to incidents) which are currently necessary to remove traffic from damaged areas of the deck so that Maintenance forces can complete repairs.

Secondly, the deck surface friction properties will be returned with replacmenet of the structural deck and wearing surface. Drainage will also be improved by installing larger scuppers will reduce the risk of hydroplanning.

As reflected in the Benefit Cost Analysis, included in Appendix A, calculable benefits for the friction improvements alone amount to $0.7 million over the expected 20-year lifespan of the wearing surface. Although benefits will occur from drainage improvements which install larger scuppers, a benefit value of this improvement was not determined given the lack of industry accepted methodology for calculating benefits for this specific type of improvement.

Maintenance Personnel Safety: A total of 42 safety ladder systems will be improved to meet current Occupational Safety and Health Administration (OSHA) standards. Additionally, the project will replace with eastbound facia girders on the main span using design details which will allow use of the traveler for inspection and maintenance of this area.

- **Challenge #6: Traffic During Construction**

Moving people and vehicles safely and efficiently through the corridor during construction will present an additional challenge. There are no convenient alternative routes for vehicles traveling I-90 West to I-87 South or I-87 North to I-90 East. Detouring traffic along the I-90/I-87 corridor will result in a 27.1-mile detour. Any work to the structure must address the regional transportation needs that the structure provides with minimal disruption.

Challenge #6 Solution

The project will be constructed with an emphasis on maintaining traffic flow and safety. Based on the traffic volumes, it has been determined that existing crossover alignments can be utilized to shift all traffic to the westbound bridge deck providing a two-lane, two-way operation for the project duration.

Project History	Preliminary Design is currently being advanced for this project. In-depth asset management analysis of condition and needs has been completed to define the work scope, including best practices for restorative/resiliency measures and methods of construction. This includes special bridge inspections, ground penetrating GPR of the deck and infrared Thermography (Provided as reference document). A Bridge Rehabilitation Design Report and an Infrared and Ground Penetration Report were completed May 2020 for the entirety of the bridge (Provided as Reference Documents). Although planned to be completed as part of the ongoing westbound deck replacement project, work to the eastbound portions of the bridge were deferred due to lack of funding. Costs incurred on preliminary design and studies total $1.69 million.
Involved Parties	The New York State Thruway Authority will be responsible for the development and delivery of the project. The Authority will coordinate with the New York State Department of Transportation and the Capital District Transportation Council (the local Metropolitan Planning Organization) on the development and implementation of the project. Coordination with local communities and other stakeholders will occur.
BIP Request Amount	Exact amount in year-of-expenditure dollars: $21.0 Million
Total Project Cost	Estimate of in year-of-expenditure dollars: $43.6 Million
Applicant	New York State Thruway Authority (A special purpose district or a public authority with a transportation function)
Maintenance Commitment	The completed project will be maintained by the New York State Thruway Authority as part of its Bridge Asset Management System, a detailed, data-driven, long-range capital and maintenance plan that helps to ensure bridges are maintained in a state of good repair.
Bike and Pedestrian Accommodation required by 23 U.S.C. 217(e)	Bicyclists and Pedestrians are prohibited on interstate highways by New York State law.
Additional Project Information	A detailed Project Schedule, Project Budget, Infrared and Ground Penetration Report, and a Design Report providing additional background for this project are included as reference materials for this project, along with additional project information, maps, and graphics.
State(s) in which project is located	New York
Does the project serve an urban or rural community ?	Rural

List all Project Co-Applicants	None
Identify the Lead Applicant	New York State Thruway Authority
Was an application for USDOT discretionary grant funding for this project previously submitted?	No
Is the project located (entirely or partially) in Federal or USDOT designated areas?	No

II. NATIONAL BRIDGE INVENTORY DATA

Castleton On-Hudson Bridge	
Identification	
Item 1 – State Code & Name	36 – New York
Item 8 – Structure Number	000000005006599
Item 5A – Record Type	1 – On Structure
Item 3 – County Code & Name	001 – Albany County
Item 6 – Feature Intersected	9J, Hudson River, Amtrak Railroad, Binnens Kill, Schodack Landing Road, Schodack Creek
Item 7 – Facility Carried	Berkshire Spur
Item 16 - Latitude	42.506332995
Item 17 – Longitude	-73.76349196
Classification	
Item 112 – NBIS Bridge Length	5330 ft
Item 104 – Highway System of Inventory	1 – On NHS
Item 26 – Functional Classification	01 – Rural Principal Arterial - Interstate
Item 110 – Designated National Network	1 – On National Truck Network
Item 21 – Maintenance Responsibility	31 – State Toll Authority
Item 22 – Owner	31 – State Toll Authority
Age and Service	
Item 27 – Year Built	1958
Item 106 – Year Reconstructed	2022
Item 42 – Type of Service	42A: 1 – Highway; 42B: 8 – Highway-waterway-railroad
Item 28A – Lanes on the Structure	4
Item 29 – Average Daily Traffic	17231
Item 109 – Average Daily Truck Traffic	23.5%
Item 19 – Bypass, Detour Length	27.1 miles
Structure Type and Material	
Item 43 – Structure Type, Main	43A: 4 – Steel Continuous; 43B: 10 – Truss- Thru
Condition	
Item 58 – Deck Condition	4 – Poor Condition
Item 59 – Superstructure Condition	5 – Fair Condition
Item 60 – Substructure Condition	6 – Good Condition
Item 61 – Channel and Channel Protection	6 – Good Condition; 2 – Channel Protection is functioning
Item 62 – Culverts	N – Not a culvert
Geometric Data	
Item 49 – Structure Length	5330 ft.

Item 50 – Curb of Sidewalk Widths	50A: 0 ft.; 50B: 0 ft.
Item 51 – Bridge Roadway Width, curb-to-curb	66.4 ft.
Item 52 – Deck Width, out-to- out	68.5 ft.
Item 32 – Approach Roadway Width	74.0 ft.
Item 47 – Inventory Route, Total Horizontal Clearance	66.4 ft.
Item 53 – Minimum Vertical Clearance over Bridge Roadway	32.0 ft.
Item 54 – Minimum Vertical Underclearance	135.0 ft.
Item 55 – Minimum Lateral Underclearance on Right	0 ft.
Item 56 – Minimum Lateral Underclearance on Left	0 ft.
Load Rating and Posting	
Item 70 – Bridge Posting	5 – Equal to or above legal loads
Item 41 – Structure Open, Posted, or Closed to Traffic	A - Open
Appraisal	
Item 113 – Scour Critical Bridges	5 – Foundations Stable
Inspections	
Item 90 – Inspection Date	November 2020

III. PROJECT SELECTION CRITERIA

More detailed information is included within the separate 2018 Design Report

Criteria #1: State of Good Repair

This project contributes to the State of Good Repair criteria by:

Improving the condition of a bridge in poor condition or in fair condition and at risk of falling into poor condition within the next three years

Although rigorously maintained, the Castleton On-Hudson structure is vulnerable to accelerated deterioration due to their advanced age, original design details, and marine environment location. The condition of these components is beyond the capability of maintenance forces to address and must be addressed by a Capital Project.

The Authority routinely performs inspections to obtain a comprehensive and intensively detailed state-of-repair examination for an entire bridge structure. The last inspection of the Castleton On-Hudson structures was completed in November 2020, identifying numerous critical bridge condition issues. The inspection identified:

- 16,402 linear feet of "Poor" and 97 linear feet of "Severe" condition-rated steel elements
- 98 (51%) fracture-critical steel gusset plates rated in "Poor" condition
- 130 (100%) fracture-critical pin and hanger assemblies rated in "Fair" condition
- 105,656 SF (36%) of concrete deck rated in "Poor" condition, and 84 SF (3%) rated in "Severe" condition, with no portion of the deck receiving a "Good" rating.
- 8,031 SF (16%) of steel deck with open grid rated in "Poor" condition

Failure of one component of a fracture-critical primary support system can result in bridge closure or a catastrophic collapse. Other critical condition issues could lead to lane or load restrictions, which would severely impact mobility and freight along I-90.

Because of the 2020 inspection findings, an in-depth bridge inspection was conducted in 2021 to supplement the data previously gathered for the structural condition of fracture-critical non-redundant members and condition of pin and hanger assemblies. The Authority is undertaking a project to replace the west bound concrete deck and to perform steel repairs to the westbound side. This project will complete repairs to all identified conditionally at-risk members and replace the concrete deck on the eastbound side of the structure. Proposed improvements, such as installing steel plates over areas of section loss and addressing fatigue cracking will restore, and in some instances increase, the full loading capacity of these critical structural elements. With these improvements, the repaired fracture-critical non-redundant steel members will be returned to a state of good repair and require only routine preventative maintenance for the anticipated remaining 75-year service life of the structures.

The primary concern for this project is the condition of the existing concrete bridge deck. The Authority has found it necessary to perform partial and full depth repairs to the bridge deck almost on a monthly basis as punch-throughs and other deterioration are found. The decks have extensive cracking, discoloration, wetness, efflorescence, and spalling that is visible from the underside of the deck.

Expansion joints in the bridge deck are in poor condition with many of the joint seals torn away from the deck concrete. These damaged seals are allowing water and debris to leak down onto the steel superstructure elements below. This leakage is causing corrosion of the steel and section loss to the primary and secondary structural members

Reducing maintenance costs

The Thruway Authority has spent $1.337 Million since 2013 on emergency repairs to the concrete deck of the Castleton Bridge. Most of the repair work was performed by Thruway Maintenance personnel and a portion of the work was extensive enough to require emergency repairs through our On-Demand contract.

Condition based on the NBI data

Castleton On-Hudson Bridge

Item 58 – Deck Condition	*4 – Poor Condition*
Item 59 – Superstructure Condition	*5 – Fair Condition*
Item 60 – Substructure Condition	*6 – Good Condition*

Are the bridge(s) on the project in Fair condition? .

The 2020 Castleton Bridge inspection report assigned the structural deck an NBI rating of "Poor" and the superstructure steel members an NBI rating of "Fair". Given present rates of deterioration, substantial numbers of the "Fair" rated structural steel members are at heightened risk of falling into poor condition within the next 3 because of the extents of section loss which currently exist. Further, the structure is at greater risk given the substantial quantity of fracture-critical non-redundant members existing on the structure. Some of the members are similar in design to the I-35 Mississippi River Bridge that collapsed in Minnesota in August 2007.

Criteria #2: Safety

This project contributes to the Safety criteria by:

Reducing the number of crashes on or near the bridge

Accident data for this segment of the Berkshire Connector (Milepost 800.5 to Milepost 801.6) for the pre-Covid period of 2015-2019 documents a total of 14 crashes. Of these incidents, obstruction/debris/pavement occurred 35.7%, unsafe lane changing occurred 21.4%, following to close occurred 7.1% and failure to keep right occurred 7.1%. Some of these accidents may be attributed to vehicles weaving or slowing down to avoid potholes in the deck.

Replacing the bridge deck will reduce accident occurrences due to bridge deck condition. The reduction in necessary lane closures will improve safety by eliminating traffic queuing, weaving and other maneuvering for lane position that occurs when approaching work zones.

The new concrete deck will also provide an integral wearing surface with increased friction to improve vehicle safety.

Wide edge lines will be used and are identified by the Federal Highway Administration (FHWA) as a Proven Safety Countermeasure that can reduce crashes on all facility types in both urban and rural area. Wide edge lines will be utilized throughout the project limits. In addition, audible roadway delineators (shoulder rumble strips) will be installed to approach pavement areas to notify motorists of unintended lane departures.

Targeting known and documented safety problems with the bridge and protecting motorized and non-motorized travelers or communities from health and safety risks

The current 4 rail steel bridge rail along the eastbound direction does not meet current standards. The minimum test level bridge rail required is TL-4. This project will replace the bridge rail with current TL-4 rail along the eastbound direction. The bridge rail along the westbound direction will be replaced under the ongoing westbound contract.

The proposed work also improves worker safety by reducing the number of times that workers need to be on the roadway to make repairs.

Safety for maintenance personnel will be improved by replacing 42 existing non-conforming fixed ladders with cages with ladder safety systems and personal fall arrest systems. This will bring the structures into compliance with the Occupational Safety and Health Administration's regulation 1910.28(b)(9).

Criteria #3: Mobility and Economic Competitiveness

This project contributes to the Mobility and Economic Competitiveness criteria by:

Improving the mobility, efficiency, and reliability of the movement of people and freight

The project will improve reliable movement of freight and people by eliminating the risk of load restrictions or full closure of a critical local and regional interstate link. The project will improve bridge deck condition and decrease vehicle operating costs. Lower operating costs in more favorable deck conditions arise from lower vehicle maintenance costs, lower depreciation, and lower tire wear, among other factors.

The bridge is located on the New York State Thruway Berkshire Connector (NY 912M). This portion of Berkshire Connector connects the north/south I-87 corridor serving the Greater New York City/New Jersey metro area to Montreal Canada, and the I-90 corridor, the United States' longest Interstate Highway, extending from Boston, MA, to Seattle, WA. .

Restrictions or closing of the bridges would impair mobility and damage the local and regional economies. Should the eastbound portion of the bridge become closed, or load posted due to condition related issues, traffic utilizing the I-90/I-87 corridor via the Berkshire Connector would be forced to use a detour that would add approximately 27.1 miles to their trip or experience delays resulting from crossover two-way two direction traffic patterns associated with placing all traffic on the westbound travel lanes.

As outlined in the BCA, the present worth value between Build and No-Build scenarios of completing the proposed work to the eastbound superstructure to eliminate is $8,844,935. The Build and No-Build scenarios differ based upon the frequency of work zone operations that will be necessary under the alternatives.

48-foot tandem combination trucks are permitted in New York but restricted to the Thruway System and some immediately adjacent highways. The Berkshire highway is a key portion of this network as the connecting portion of I-90 within Massachusetts also allows tandem vehicles from the New York/Massachusetts State line to the Massachusetts Weston Interchange 14 trailer lot.

In addition to lengthy detours, freight operations will be further negatively impacted if condition related closures or load restrictions occur to the Castleton Bridge as alternative routes to not permit tandem trucks.

Criteria #4: Climate Change, Resiliency, and the Environment

This project contributes to the Climate Change, Resilience, and the Environment criteria by:

Improving resiliency of at-risk infrastructure

As discussed under Criteria #1, this project will address critical condition issues on fracture-critical non-redundant members and other bridge components. The bridge will be strengthened against the weathering effects and stresses of storm events of increased frequency and intensity and other weather extreme events that numerous studies identify as being probable in the future.

Resulting in a reduction of air pollution or greenhouse gasses

As demonstrated in the BCA, the project will contribute to efforts to combat climate change by reducing vehicle emissions amounting to 10,500 metric tons.

Criteria #5: Equity, Partnership, and Quality of Life

This project contributes to the Equity, Partnership, and Quality of Life criteria by:

Engaging diverse people and communities

The project is located in a rural area, with very little development in the vicinity of the bridge, which minimizes the potential for direct project impacts to people, communities, or businesses. Given the context of the project, the Authority has engaged a range of potential stakeholders, including:

- Nearby municipalities
- State and local elected officials
- Freight and motorist representative organizations
- Trade organizations
- Local business

The Authority will work with these stakeholders to identify other groups and individuals with a potential interest in the project, including any members of traditionally underserved communities.

It is the policy of the Authority to ensure equal opportunity and to prevent and eliminate discrimination in all its activities, including the areas of construction, consultants, commodities, and professional services. The Authority ensures its compliance responsibility in meeting the requirements for federal Civil Rights law on its Federal Aid-funded transportation projects, including requirements for the participation of Disadvantaged Business Enterprises (DBEs). The Authority is also fully committed to actively promoting Minority and Women-Owned Business Enterprises (MWBE) and Service-Disabled Veteran-Owned Business (SDVOB) opportunities. Participation goals will be set, results reported, and contracts monitored for this project. Further, the Authority incorporates targeted training provisions within its contracts to provide a mechanism which allows for underrepresented groups to become skilled in the various construction trades.

Using planning and engagement in the project design phase to mitigate and prevent physical and economic displacement

While negative physical or economic impacts of the project are expected to be minimal and temporary, consisting primarily of minor disruptions to motorized traffic during construction, the Authority will use information gathered from stakeholder outreach to identify, avoid, or minimize any impacts that were not previously identified.

Providing congestion reduction and improved reliability in the project corridor

As demonstrated in the Benefit Cost Analysis (See Appendix A), the travel time savings that will be achieved by the project are estimated to be 600,500 Personal Vehicle Hours and 237,000 Truck Hours, a $8,844,935 million present-worth benefit.

Criteria #6: Innovation

This project contributes to the Innovation criteria by:

Using innovative financing

The Authority may use of a Best Value bidding procedure for this project. The Best Value process has been used successfully for several Thruway projects in the past.

Traditional bidding procedures award the contract to the lowest responsible bidder. The Best Value bidding procedure is an innovative process that considers quality and efficiency in addition to cost. While price is still a major factor, a bidder with the lowest overall price may not necessarily be awarded the project: it will be awarded to the bidder who demonstrates the best complete understanding and ability to deliver the best project.

Competitive bids are solicited through a two-part process:

- Part one consists of traditional construction plans, proposal, bid items and quantities.
- Part two consists of a description of technical evaluation factors specific to the project, their relative weights, the weighting of price vs. technical evaluation factors, and instructions to the bidders.

Bidders submit a price proposal and a separate technical submission. The technical submissions are not publicly opened or read. Instead, they are reviewed and scored, based on defined project-specific criteria related to quality, schedule, experience, capability, traffic impacts, and the bidder's overall understanding of the project. The technical evaluation scores are combined with the price proposals to determine the Best Value Bidder. All Best Value Submissions are reviewed and scored by an Evaluation Committee, under the direction of the Authority's Office of Capital and Contracts Management.

This innovative procurement process reduces risk to the Authority. A contractor is selected based, in part, on their complete and written understanding of all critical aspects of the project rather than just price alone. This increases the potential for selecting and awarding to the contractor with the ability to deliver the best overall project. Contractors can propose the use of innovative approaches or techniques that will offer significant benefits in terms of:

- lower costs
- shorter timeframes to complete work
- less disruption to neighboring communities
- less disruption to the movement of people, goods, and services
- improved work quality
- improved safety

Two recent Authority projects that used Best Value bidding, both over $50 million, benefitted from construction time savings of up to 37% and price savings of up to 20%.

Using innovative materials

In addition to normal weight cast-in-place (CIP), other deck concrete materials may be considered for the deck replacement alternative. This may include lightweight CIP concrete, precast panels, and exodermic deck panels. Light weight CIP concrete deck may reduce the number of steel floorsystem members to be strengthened to carry the wider deck than the other options. A precast deck could save approximately six months on a two-year construction schedule. The exodermic deck could also save approximately six months of time during construction and also reduce the weight.

In accordance with regulatory processes, the ongoing construction contract is utilizing an eco-friendly approach to curing concrete by pumping water, with use of a filtration system, from the Hudson River rather than trucking water from off-site areas. This approach reduces congestion on the highway system and provides air quality impact benefits through reduced emission rates. The Authority will actively work to incorporate the same curing process for this project.

Pavement Markings

The pavement marking system utilized by the Authority for mainline pavements, known as "Recess Triple Drop" provides distinctly better visibility of markings in all lighting and most weather conditions, making the highway safer throughout the year. Recess Triple Drop also provides far superior nighttime reflectivity than standard highway striping. This pavement marking system will be applied to the approach pavement to the structure.

IV. PROJECT COSTS

BIP Request Amount	Exact Amount in year-of-expenditure dollars: $21.0 million
Estimated Total of Other Federal funding (excluding BIP Request)	Estimate in year-of-expenditure dollars: $0
Estimated Other Federal funding (excluding BIP) further detail	None
Estimated non- Federal funding	Source: New York State Thruway Capital Funds Amount: $21.0 million
Future Eligible Project Cost (Sum of BIP request, Other Federal Funds, and non-Federal Funds, above)	Estimate in year-of-expenditure dollars: $42.0 million
Previously incurred project costs (if applicable)	Estimate in year-of-expenditure dollars: $1.69 million
Total Project Cost (Sum of 'previous incurred' and 'future eligible')	Estimate in year-of-expenditure dollars: $ 43.69 million
If more than one bridge, will bridge bundling be used to deliver the Project?	No
If proposed project utilizes bundling, Cost of Unbundled Projects	Estimate in year of expenditure dollars: $ Not applicable
Amount of Future Eligible Costs by Project Type	Bridge Rehabilitation $21,000,000 Will request $0 of the amounts awarded to the entity to pay subsidy and administrative costs necessary to provide to the entity Federal credit assistance under 23 U.S.C. Chapter 6.

V. BENEFIT COST ANALYSIS

The full Benefit Cost Analysis narrative is included in the application appendices

The benefit cost analysis demonstrates that:

The project generates benefits that exceed its costs, and therefore results in a quantified net benefit to society.

The cost effectiveness and net benefits of the project were estimated through a complete Benefit-Cost Analysis (BCA) as per U.S. Department of Transportation's (USDOT) *Benefit-Cost Analysis Guidance for Discretionary Grant Programs* (March 2022). The monetization of the main benefits resulting from the proposed improvements are summarized below:

Benefit Estimates, 2020 Dollars

Benefit Categories	7% Discount Rate*
Reduced Travel Time Costs	$8.8 million
Improved Safety and Avoided Crash Costs	$0.9 million
Reduction in Emissions Costs	$1.2 million
Reduction in Pavement Maintenance Costs	$13.5 million
Reductions in Vehicle Operating Cost	$1.3 million
Residual Values	$4.4 million
Total Estimated Benefits**	**$30.2 million**

* 7% Discount Rate with the exception of CO2 emissions, which are discounted at 3% per USDOT Guidance.
** Total may not sum due to rounding

A 20-year period of analysis was used in the estimation of the project's benefits and costs, which includes 2 years of construction (including quality control and construction inspection services) and 18 years of operation.[1] Annual costs and benefits are estimated through 2043, in accordance with USDOT BCA Guidance for projects addressing deficiencies. Beyond this point, it is anticipated that additional maintenance will need to be performed.

The project's most significant benefit is travel time savings and emissions reduction for passenger vehicles and trucks due to the avoidance of work zone related detours and delays. The frequency and duration of intermittent repairs creates additional, unnecessary delays and subsequent emissions release along this already congested corridor. The project will also generate a significant improvement in crash cost savings. Historic crash data was provided by the Authority, and future savings were calculated using the Highway Safety Manual (HSM) Predictive Model and applying crash modification factors (CMFs).

Considering all monetized benefits and costs, the internal rate of return of the project is estimated at 7.6%. With a 7% discount rate, the project would result in a net present value of $1.7 million and a benefit-cost ratio of 1.06.

Overall Results of the BCA, 2020 Dollars

Project Evaluation Metric	7% Discount Rate*
Total Discounted Benefits**	$30.2 million
Total Discounted Costs	$28.5 million
Net Present Value	$1.67 million
Benefit-Cost Ratio	1.06
Internal Rate of Return	7.6%

* 7% Discount Rate with the exception of CO2 emissions, which are discounted at 3% per USDOT Guidance

[1] Project support costs are assumed to be incurred from 2022 to 2025. Benefits are assumed to begin to accrue in 2026. A twenty-year analysis period was conservatively estimated based on USDOT BCA suggested service life assumptions for transportation infrastructure projects.

The project will generate an additional benefit that has not been monetized due to lack of guidance/ methodology from the US Department of Transportation. This benefit is travel time reliability. The reduction in unscheduled closures for emergency deck repairs will reduce the overall number of incidents along the corridor and improve general travel time reliability. While the travel time savings estimated in the BCA do include time savings from reduced delays from intermittent closures, the BCA does not consider the additional benefit of increased reliability beyond that of its incremental time value. In other words, just the fact that travel along the route is more reliable, and thus a traveler has a lower chance of experiencing a delay during a particular trip, has an intrinsic value to many. Travel time reliability is important for firms that depend on just-in-time deliveries as well as for individuals who need to be on time for work or other appointments. Improved reliability allows drivers to reduce the amount of "buffer" time they need to budget in order to account for unexpected delays. The inclusion of this benefit would increase the overall benefit-cost ratio.

VI. PROJECT READINESS AND ENVIRONMENTAL RISK

Other Federal Funding and Non-Federal Funding Secured	Yes
NEPA Status Indicate if the determination will likely be the result of a Categorical Exclusion (CE), Environmental Assessment (EA), or Environmental Impact Statement (EIS)	**Planned or Actual Start of NEPA Date:** May 2022 **Planned or Actual Completion of NEPA Date:** September 2023 **Final NEPA Determination or current status of NEPA process:** The project is likely to be a Categorical Exclusion. No need for environmental permits is anticipated. However, consultation will be required with: ▪ The US Army Corps of Engineers and New York State Department of Environmental Conservation for the potential of federal wetlands in the vicinity of the project. The project is not anticipated to have any impacts to wetlands. ▪ The US Fish & Wildlife Service and New York State Department of Environmental Conservation for Federally- and State-listed threatened or endangered species that are either known to exist or have the potential to exist in the project limits. The project may affect, but is not likely to adversely affect, them. Consultation has begun and is expected to be complete before Spring 2023.
Is the project currently programmed in the:	**TIP:** State Department of Transportation has agreed to include project **STIP:** State Department of Transportation has agreed to include project
Is right-of-way acquisition necessary?	No
Right-of way acquisition considerations	None
Design Status	**Planned or Actual Start of Preliminary Design Date:** October 2019 **Planned or Actual Completion of Preliminary Design Date:** March 2023 **Planned or Actual Start of Final Design Date:** March 2023 **Planned or Actual Completion of Final Design Date:** January 2024
Anticipated Construction Start Date:	May 2024
Anticipated Project Completion Date:	November 2025

The summary on project readiness and environmental risk demonstrates that:

The New York state Thruway Authority is capable of delivering the project in a manner satisfying Federal Requirements.

The Authority is familiar with all Federal standards and procedural requirements for developing and delivering a Federally funded project. Over several decades, the Authority has, on multiple occasions, been a recipient of Federal transportation funds and has successfully delivered the projects, including a $1.6 Billion loan grant for the Governor Mario M. Cuomo Bridge (Tappan Zee Bridge Replacement) under the Transportation Infrastructure Finance and Innovation Act (TIFIA).

The project's funding sources are fully committed and there is demonstrated funding to cover contingency/cost increases.

The Authority has previously expended $1.69 million on preliminary design (pre-BIP grant application) and is committed to expending an additional $21 million in Thruway Authority Capital Funds for the subject project. Cumulatively, Authority funding accounts for 52% of the overall project costs

It is highly likely that NEPA and other environmental reviews will be complete in time to meet the project schedule.

As shown in Section VI, the Authority has identified all potential environmental concerns for this project. While no need for environmental permits is anticipated, the Authority has initiated necessary consultation to satisfy State (New York State Environmental Quality Review Act) and Federal (National Environmental Policy Act) requirements. Stakeholder outreach has been initiated. It is anticipated that all environmental reviews will be complete, and all requirements satisfied, no later than January 2024, when Final Design for the project is scheduled for completion.

VII. PROJECT PRIORITY CONSIDERATIONS

This application supports the following priority considerations:

The project will be ready to proceed to final design within 12 months of a Categorical Exclusion Determination, Finding of No Significant Impact, or Record of Decision and may be funded in a 2-phase obligation

The project schedule and budget demonstrate that two-phased BIP funding approach is feasible, with obligation of BIP funds at the conclusion of final design with an initial obligation of BIP funds to complete final design and proceed to the construction phase within 12 months of the initial award of FY 2022 BIP funds. No right-of-way acquisition will be necessary. Please refer to the project schedule.

The second obligation of BIP funds for construction will be, based upon the results of preliminary engineering and FHWA approval of the plans, specifications, and estimate for the project, reasonably expected to begin construction within 18 months of the first obligation of BIP funds

Without a FY 2022 BIP grant, construction of the project is unlikely to commence before September 30, 2025.

BIP Grant funding will supplement the Authority's funds to ensure that the time-sensitive needed improvements identified in Sections I and III are completed by November 2025. Without BIP funding, deck replacement and steel repairs will be further delayed by 2 years. Limited available funds will require deteriorating conditions of the bridge to be addressed only an emergency-need basis to avoid imminent condition related flag conditions that may cause bridge closure or load posting. A reduced-scope-of-work approach will result in greater impacts to bridge users, including freight and public transportation, who will experience compounding impacts in service as the bridge conditions deteriorate.

APPENDIX A
Benefit Cost Analysis

Stantec

BENEFIT-COST ANALYSIS
Steel Repairs and Eastbound Deck Replacement for Castleton-on-Hudson Bridge (NY-912M / Berkshire Connector), MP 800.5 to MP 801.6

August 29, 2022

Prepared for:
New York State Thruway Authority

Prepared by:
Stantec Consulting Services, Inc.

Project Number:
192810430

The conclusions in the Report titled Benefit-Cost Analysis are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from New York State Thruway Authority (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Table of Contents

List of Tables

Benefit-Cost Analysis Supplementary Documentation

1. Executive Summary

The net benefits of the Castleton-on-Hudson Deck Replacement Project from MP 800.5 to MP 801.6 ('Project') were estimated through a comprehensive Benefit-Cost Analysis (BCA) as per U.S. Department of Transportation (USDOT)'s Benefit-Cost Analysis Guidance for Discretionary Grant Programs (March 2022 update). This BCA quantifies and monetizes the Project's benefits and compares them against the Project's costs. The analysis makes evident that Project benefits exceed Project costs, meaning that its completion results in a net benefit to society relative to taking no action.

The Project is anticipated to result in several categories of beneficial impacts, including the following:

- Bridge deck management benefits by reducing frequency and associated costs of emergency and scheduled bridge deck maintenance.
- Travel time savings by reducing the frequency of lane closures and delays required for emergency and scheduled bridge deck maintenance.
- Decrease the number of crashes, injuries and crash related costs by decreasing the frequency of incidents related to pavement condition and deck surface friction.
- Reduce emissions of pollutants, such as nitrogen oxides (NO_x), fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), and carbon dioxide (CO_2), fewer VMT's at inefficient operating conditions (i.e. variable and slow speeds) due to congestion caused by emergency and scheduled bridge deck maintenance.
- Decrease vehicle operating costs (e.g., less tire wear, lower required maintenance, etc.) along the Thruway by decreasing wear and tear associated with poor bridge deck conditions.

Table 1 summarizes the changes expected from the project and the associated benefits.

Table 1 – Summary of Improvements and Associated Benefits				
Current Status or Baseline & Problems to be Addressed	**Changes to Baseline/ Alternatives**	**Types of Impacts**	**Benefits**	**Summary of Results (Discounted 2020 $)**
The Castleton-on-Hudson Bridge, MP 800.5 to MP 801.6, is in need of a deck replacement for the EB travel way. The deck condition is rated "poor" or "very poor". The deteriorated condition results in the need for frequent emergency repairs. The WB travel way will receive a deck replacement in 2022.	The project will replace the deck of the Castleton-on-Hudson Bridge, and will complete miscellaneous steel repairs. The deck condition will return to "very good" status upon project completion and emergency repairs will no longer be required.	Improved travel times along the segment from avoiding future work zones from scheduled and emergency repair work.	Travel Time Savings	$8,844,935
		Improved safety and crash avoidance by reducing the number of pavement condition and friction related incidents.	Improved Safety and Reduced Crash Costs	$889,372
		Reduce vehicle operator costs of fuel, maintenance/repair, tires and depreciation costs related to poor deck surface condition	Reduced Vehicle Operation Costs	$1,332,070
		Decrease bridge deck management costs by avoiding the need for emergency deck repairs.	Reduced emergency and scheduled repairs	$13,469,581
		Reduction in Greenhouse Gas (GHG) Emissions and CO2, due to reduced travel time and congestion.	Reduced in Emissions Costs	$1,220,366
		Reduced preparation for future capital investments through realization of a residual value of the investment at the end of analysis period	Residual Value of Capital Investment	$4,436,785
			Total	**$30,193,108**

The project is expected to start generating benefits when the resurfacing is complete in the fall of 2026.

The 20-year period of analysis used in the estimation of the project's benefits and costs includes 2 years of project construction (2025-2026) and 18 years of benefits.[1] The total project capital costs are $42.0 million in undiscounted 2020 dollars. The breakdown of project costs is presented in Table 2.

Table 2 – Summary of Project Costs	
Cost Category	**Undiscounted 2020 $**
Preliminary / Final Design	$3,500,000
Construction	$35,000,000
Construction Inspection	$3,500,000
Total (Undiscounted)	**$42,000,000**
Total (Discounted)	**$28,506,337**

A summary of the relevant data and calculations used to derive the benefits and costs of the project are

[1] Note that benefits are conservatively estimated only for a period of 20 years, at which point pavement would deteriorate to "good" or "fair" condition. The BCA model allows for an extension of benefit years that includes conducting future emergency repairs to maintain pavement status.

shown in the BCA model (in 2020 dollars). Based on the analysis presented in the rest of this document, the project is expected to generate $30.2 million in discounted benefits and $28.5 million in discounted costs using a 7 percent real discount rate for most benefit categories and a 3 percent real discount rate for CO_2 emissions. Therefore, the project is expected to generate a Net Present Value of $1.69 million and a Benefit-Cost Ratio of 1.06. In other words, for each dollar spent in project costs, approximately $1.06 worth of benefits will be generated by the improvements.

A summary table of annual monetized benefits and costs is provided in Section 7.

2. Introduction

This document describes the analytical methods and findings of the economic analysis conducted in support of the grant application for the Project. The remainder of this document is structured as follows:

- **Section 3**, Methodological Framework, describes the conceptual framework in which the Benefit-Cost Analysis is performed.
- **Section 4**, Project Overview, summarizes the project, including a brief narrative of existing conditions; a summary of estimated project cost and schedule; and a description of the types of effects that the project is expected to generate.
- **Section 5,** Methodology and Assumptions, provides a narrative of the general assumptions underlying the analysis including projected traffic volume growth through the impacted segment.
- **Section 6**, Economic Benefits, describes data and assumptions used in quantifying and monetizing benefits from each category of benefits.
- **Section 7,** Summary of Findings and BCA Outcomes**,** summarizes results of the Benefit-Cost Analysis (BCA) including the metrics of Net Present Value (NPV), Benefit-Cost Ratio (BCR).
- **Section 8**, BCA Sensitivity Analysis, provides the outcomes of the sensitivity analysis. Additional data tables are provided within the BCA model including annual estimates of benefits and costs to assist the U.S. Department of Transportation (USDOT) in its review of the application.[2]
- **Section 9**, Schedule of Estimated Benefits and Costs, provides results for estimated project costs and benefits for each analysis year.

[2] The BCA model is provided separately as part of the application.

3. Methodological Framework

A benefit-cost analysis (BCA) is an economic tool used to evaluate the economic justification of capital-intensive projects. A BCA describes, quantifies, and monetizes the social benefits and social costs generated by a particular project. A project's net benefit is estimated by subtracting the project's costs from the project's benefits. According to the USDOT (2022), "The goal of a BCA is to provide an objective assessment of a project that carefully considers and measures the outcomes that are expected to result from the investment in the project and quantifies their value."

The benefits of any project are equal to the sum of expected beneficial impacts to society, (i.e., both users and non-users of the facility) over the life of the project, properly discounted and monetized in a common metric (typically U.S. dollars from a specified year). Similarly, the costs of the project are based on the expected negative impacts to society over the life of the project, properly discounted and monetized in the same common units. While benefits generally consist of a wide potential range of project specific positive impacts, costs typically primarily consist of increased capital spending to implement the project and also to maintain the project.

The BCA produces several related measures to assess the economic rationale of a proposed project. The benefit-cost ratio (BCR) is calculated by dividing the project's present value of social benefits by the project's present value of social costs. A BCR greater than 1.0 indicates that undertaking project activities as specified yields more benefits to society than costs to society and is therefore deemed economically justified. The net present value (NPV), calculated by subtracting the discounted project costs from the discounted project benefits, measures the net benefit in present value that society would accrue as a result of the project implementation relative to the no-build scenario.

The general methodology for the Project was developed using the BCA guidance published by USDOT in March 2022. In particular, the major methodologic steps consist of the following:

- Specifying existing and future conditions in each future year for both the build and no-build scenarios.
- Identifying non-overlapping categories of social costs and social benefits over which to account.
- Quantifying changes in cost and benefit categories between build and no-build scenarios in each year of the analysis employing those assumptions and methodologies outlined in Sections 5 and 6.
- Monetizing changes from the previous bullet in 2020 dollars.
- Discounting future monetized benefits and costs with a real discount rate of 7 percent for all categories except CO_2 emissions, which is discounted at 3 percent rate (USDOT (2022).
- Conducting a sensitivity analysis to assess the impacts of changes in important analytical inputs and assumptions.

This analysis seeks to avoid overestimation of benefits as well as underestimation of costs. The strategy of tending to understate benefits and tending to overstate costs as adopted in this analysis is considered a conservative approach and lends greater credibility to any affirmative finding of economic justification (if applicable). Categories of benefits that may accrue to society but have been omitted from monetization include: increases in vehicle passenger comfort and reduced ambient noise levels from smoother deck surface, and avoided emissions of various pollutants not included in this analysis like volatile organic compounds (VOCs) and carbon monoxide.

4. Project Overview

4.1 Base Case and Alternatives

Base Case – The No-Build condition assumes that replacement of the eastbound bridge deck does not occur, and emergency repairs continue to be conducted at an increasing rate to maintain the roadway. Under this scenario, the deck condition remains in a state that is consistent with "very poor" condition. Traffic volumes increase over time according to NYSTA projections. Other than changes to traffic volumes, traffic patterns, including diurnal and intra-week variation, remain materially similar to those patterns in recent historical years.

Build Case – The eastbound bridge deck is replaced according to the timing and cost schedules laid out herein. The bridge deck is initially in "very good" condition after project completion and deteriorates gradually over the analysis period with emergency repairs assumed to equate to 10% of repairs required for the No-Build condition. As in Base Case, traffic volumes continue to grow alongside population growth in adjacent communities. Other than changes to traffic volumes, traffic patterns in future years are generally similar to those patterns in recent historical years.

Unless otherwise noted, for all benefit and cost categories monetized values presented in this analysis represent the difference in that category between the Base and Build Case.

4.2 Categories of Impacts

The Project is expected to significantly improve bridge deck condition, which will reduce the frequency of emergency repairs, the frequency of delays for motorists, the number of crashes, the emissions of harmful air pollutants, and aggregate vehicle operating costs.

These impacts are described in more detail below:

- **Reduction in Emergency Repairs:** The project will reduce the frequency of emergency repairs and the associated direct costs in labor, equipment and materials to perform them.
- **Travel Time Savings:** A reduction in emergency repair frequency will reduce the frequency of necessary lane closures and resulting traffic delays and lower average travel speeds. This is partially offset by increases in travel time during the construction period.
- **Improved Safety and Avoided Crash Costs:** Improving the pavement surface condition and the friction of the deck surface through replacement of the bridge deck, pavement grooving, and improved drainage will reduce the number of vehicle incidents expected to occur.
- **Reduction in Emissions:** The project will reduce emissions of air pollutants produced by vehicles by reducing delays related to emergency work zones. As vehicles brake and reduce travel speeds through the emergency work zones, they emit several pollutants such as carbon dioxide (CO_2), nitrogen oxides (NOx), particulate matter ($PM_{2.5}$), and sulfur dioxide (SO_2) at higher rates per mile due to less efficient vehicle operation. This is partially offset by increased emissions resulting from delays associated with project construction.
- **Reduced Vehicle Operating Cost:** The project will decrease vehicle operating cost along the Thruway by decreasing additional vehicle wear and vehicle maintenance requirements associated with poor bridge deck conditions.
- **Residual Value of Capital Investment:** Several project elements will retain value throughout their useful lives which extends beyond the analysis period. This value is calculated and accounted for

in the final year of the analysis period.

4.3 Project Cost and Schedule

The construction of the Project is expected to begin part way into 2025 and continue through 2026, the year lane closures are expected to take place, with project completion expected at the end of 2026 and the first full year of benefits in 2027. The costs associated with design, construction, and inspection are expected to be incurred between 2024 and 2026. The breakdown of project costs is presented in Table 3. The capital expenditures of the project will total approximately $42.0 million (undiscounted).

Table 3 – Summary of Project Costs

Calendar Year	Capital Expenditures (2020 $)	Discounted Capital Expenditures (2020 $)
2024	$1,750,000	$1,335,067
2025	$7,525,000	$5,365,221
2026	$32,725,000	$21,806,049
Total	**$42,000,000**	**$28,506,337**

5. Demand Projections

The projected future traffic demand is a key factor in calculating vehicle operating cost, travel time savings, and emissions for the No-Build and Build scenarios. The volumes and delays for vehicles on the corridor are based on the hourly traffic data.

NYSTA estimated daily traffic data in average annual daily traffic (AADT) over the analysis period. These figures include projections for 2027, 2037, 2042, and 2047. This analysis uses this implied growth rate between these dates to calculate traffic demand across the bridge for each year of the analysis period. Conservatively, the project is not assumed to increase capacity, and thus daily traffic volumes are consistent between the No-Build and Build scenarios. The primary difference in hourly traffic volumes results from changes in delays due to lane closures associated with emergency and scheduled repairs between the No-Build and Build scenarios.

The historic AADT between 2017 and 2021 and the resulting volume projections for the bridge highway segment are presented in Table 4.

Table 4 – NYSTA Daily Traffic Forecasts

Year	AADT
2017	15,525
2018	16,442
2019	17,240
2020	13,103
2021	15,986
2027	17,712
2037	18,420
2042	18,811
2047	19,210

6. Estimation of Economic Benefits

This section describes the measurement approach used for each benefit and cost category identified in Section 4.2 and provides an overview of the associated methodology, assumptions, and estimates. Table 5 outlines general assumptions used in the BCA.

The BCA measures benefits against costs throughout a period of analysis beginning at the preliminary design and the start of construction including 2 years of construction costs and an 18-year benefits period. All monetized benefits and costs are estimated in 2020 dollars with future dollars discounted according to USDOT BCA guidance. The benefits and costs have been discounted to a base year of 2020.

Table 5 - BCA General Assumptions

Variable name	Unit	Value	Source
Construction Start Year	Year	2025	NYSTA Project Schedule
Construction Duration	Years	1.5	
Project Open Year	Year	2027	
Benefits Period	Years	20	Anticipated life before additional significant steel repairs are due (NYSTA)
Extended Benefits Period	Years	0	Extended analysis period assumption. Assumes additional maintenance expenditures will be incurred to maintain deck/steel condition for a longer timeline.
Emergency Repair Start year (Build)	Year	2027	
General Discount Rate	Percent	7%	USDOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs (March 2022 - Revised)
Environmental Discount Rate (CO2)	Percent	3%	
Annualized Factor (weekdays)	Days/Year	261	Considers only weekdays in a year.
Annualization Factor - Full Week	Days/Year	365.25	Known
Commercial Vehicle Percentage	Percent	28.3%	NYSTA calculated based on observed commercial vehicle data.

6.1 Travel Time Savings

Travel time savings are estimated using the AADT projections and USDOT travel time recommended values. The build scenario initially creates negative time travel savings during the construction period. However, after construction, the build scenario generates positive travel time savings as the incidence of emergency repairs and the associated delay causing lane closures are greatly reduced.

6.1.1 Methodology

Estimation of travel time savings is based on AADT information from NYSTA outlined in the Demand Projections section. The AADT information is applied to the projected work zone activity along the project corridor, and the relative average vehicle speeds during the different work zone periods. In the No-Build scenario, an estimated 1,147 hours of emergency work zones occurred during 2020, 65% of work being done with single lane closures on one side and 35% done with double lane closures resulting from a crossover to

bring all traffic to one side of the bridge and both directions travelling on one side with one lane in each direction. The average travel speed during the emergency repairs was estimated at 30 mph. The BCA assumes that the number emergency work zones will continue to increase on an annual basis over time. Following project completion, the Build scenario will require emergency repairs at a lower frequency, an assumed 10% of the No-Build closure hours in the BCA. In addition to emergency repairs, the No-Build scenario will experience regularly scheduled maintenance and inspection that will not be necessary following project completion, requiring additional lane closures and further increasing travel times. The average travel speed during scheduled maintenance is assumed to be higher at 50 mph based on a 45-mph work zone speed limit. Speeds are higher than emergency repairs due to being able to plan traffic control accordingly and conduct maintenance during fewer peak hours when delay can accumulate the most.

In the build scenario, an estimated 275 work days will occur during the construction period in 2026. An estimated 168 scheduled work zones (two-thirds of the available work days) occur during the construction period. Construction will occur with closure of both lanes and one-lane operation of each direction. The average travel speed is expected to also be 50 mph based on existing work zone speed limits. Scheduled work zones during the construction period for the build scenario occur as dictated by NYSTA lane closure allowances for the corridor.

6.1.2 Assumptions

The assumptions used in the estimation of travel time savings are summarized in Table 6.

Table 6 – Travel Time Savings Assumptions

Variable name	Unit	Value	Source
Value of Time (All Purpose) auto	2020 $/Person	$17.80	Table A-3 USDOT BCA Guidance
Average Vehicle Occupancy	Persons	1.67	Table A-4 USDOT BCA Guidance
Value of Time (All Purpose)	2020 $/Vehicle	$29.726	Calculation, Value of time per person * Occupancy
Value of Time (trucks)	2020 $/Vehicle	$32.00	Table A-3 USDOT BCA Guidance
Commercial Vehicle Percentage	Percent	28.3%	NYSTA Commercial Vehicle Percent
Annual Percent Growth in Maintenance Requirements in Future Years for No-Build Scenario	Percent	1.54%	Ahmed, A., Bai, Q., Lavrenz, S. and Labi, S., 2015. Estimating the marginal cost of pavement damage by highway users on the basis of practical schedules for pavement maintenance, rehabilitation and reconstruction. Structure and Infrastructure Engineering,11(8), pp.1069-1082
Project Length	Miles	1.1	NYSTA, Length of Castleton-on-Hudson Bridge
Duration of Emergency Repairs (2020), No-Build	Hours/Year	1147	Based on Maintenance Logs, Average duration of corrective maintenance lane closures
Single Lane Closures for Corrective Maintenance, No-Build	Hours/Year	747	Based on Maintenance Logs, Annual estimated duration of single lane closures

Double Lane Closures for Corrective Maintenance, No-Build	Hours/Year	400	Based on Maintenance Logs, Annual estimated duration of double lane closures
Duration of Emergency Repairs (2020), Build	Hours/Year	115	Assumption, 10% of No-Build Condition
Single Lane Closures for Corrective Maintenance, Build	Hours/Year	75	Assumption, 10% of No-Build Condition
Double Lane Closures for Corrective Maintenance, Build	Hours/Year	40	Assumption, 10% of No-Build Condition

6.1.3 Benefit Estimates

Table 7 outlines the monetized net benefits of travel time over the project lifecycle between Build and No-Build scenarios. They account for $8.8 million in discounted benefits over the life cycle.

Table 7 – Travel Time Cost Savings

Benefit Type	Constant 2020 $	Discounted 2020 $
Travel Time Savings	$25,433,296	$8,844,935

6.2 Crash Cost Savings

The proposed project would result in crash cost savings to society by reducing the number of incidents due to bridge deck condition and friction. In addition to full replacement of the deck, improvements to friction consisting of adding grooving to the new bridge deck are proposed.

6.2.1 Methodology

NYSTA provided existing crash data which were used to forecast the number of crashes for the No-Build scenario. Supplemental to the crash data, to capture the statistical probability of serious injury and fatal crashes, the Highway Safety Manual (HSM) predictive method was used. The existing conditions were modeled in FHWA's IHSDM software and Empirical-Bayes analysis for the whole project was conducted to determine the expected number of crashes over the BCA analysis period. Results of this analysis were calibrated against NYSTA crash data. FHWA Crash Modification Factors #7229 and #7231, related to pavement grooving, and #9289 and #9290, related to resurfaced pavement, were utilized to estimate crash reduction of the eastbound direction in the Build scenario. The results of the HSM predictive method are provided in KABCO crash severity categories: K – fatal, A – serious injury, B – minor injury, C – possible injury, and PDO – property damage only. The reduction in crashes from the No-Build to Build scenarios are applied to USDOT recommended monetization values. Outputs from the analysis in IHSDM are provided as an attachment to this BCA document.

6.2.2 Assumptions

The assumptions used in the estimation of vehicle operating costs are summarized in Table 8.

Table 8 – Safety Benefit Assumptions			
Variable name	Unit	Value	Source
Cost of Damaged Vehicle (PDO)	2020 $/vehicle	$4,600	USDOT BCA Guidance Table A-2
Cost of Possible Injury (C)	2020 $/injury	$77,200	USDOT BCA Guidance Table A-1
Cost of Minor Injury (B)	2020 $/injury	$151,100	
Cost of Serious Injury (A)	2020 $/injury	$554,800	
Cost of Fatality (K)	2020 $/injury	$11,600,000	

6.2.3 Benefit Estimates

Table 9 outlines the safety benefits due to improvements in deck surface condition and pavement friction from grooving over the project lifecycle in the eastbound direction. Discounted benefits amount to $0.9 million over the analysis period.

Table 9 – Safety Benefit Cost Savings		
Benefit Type	Constant 2020 $	Discounted 2020 $
Crash Avoidance Benefits	$2,221,159	$889,372

6.3 Emissions Cost Savings

The BCA estimates the reduction emissions by pollutant type and monetizes the cost of emissions using values provided in the USDOT's BCA Guidance.

6.3.1 Methodology

The primary air quality impact associated with the project is decreased link emission rates post-project due to a reduction in delays and lower speeds caused by emergency repairs and scheduled maintenance – Emergency repair events are anticipated to reduce to 10% of the No-Build scenario after project completion, as well as elimination of frequent scheduled maintenance and inspection.

The BCA estimates included herein monetize reductions of emissions from this effect. The reduction in tons of emissions by pollutant type was estimated based on the difference in total emissions rates (g/hr) between the Build and No-Build scenarios for two analysis years using volume projections from NYSTA: project opening year 2027 and 2037. Using per-hour emission rates for carbon dioxide ($CO2$), nitrogen oxides (NOx), particulate matter ($PM2.5$), and sulfur dioxide ($SO2$) from the Environmental Protection Agency (EPA)'s Motor Vehicle Emission Simulator (MOVES), the default MOVES3-based Albany County, NY fleet were modeled based on an average congested and free-flow speeds for each No-Build and Build scenario, respectively. It was assumed that after 2037, emissions benefits yield diminishing returns due to expected improvements in emissions standards of the general vehicle fleet.

6.3.2 Assumptions

The assumptions used in the estimation of vehicle operating costs are summarized in Table 10.

Table 10 – Emissions Model Assumptions			
Analysis Year	**Model Input Parameter**	**Existing/Baseline Condition Input Description**	**Lane Closure Condition Input Description**
2025 (existing) / 2027	Model Scale	Project Scale	Project Scale
	Analysis Year	2025 (The year before construction begins.)	2027 (run as 2025 in MOVES3 to provide consistent basis for comparison of existing vs. lane closure conditions.
	Representative Day Type	Weekdays	Weekdays
	Representative Month	April	April
	Representative Hour of Day	10-11 am	10-11 am
	Geographic Location	Albany County, NY	Albany County, NY
	Road Type	Urban Restricted Access (Freeway)	Urban Restricted Access (Freeway)
	Pollutants Modeled	NOx, SO2, PM2.5 exhaust, brakewear and tirewear, GHGs: CH4, N2O, CO2	NOx, SO2, PM2.5 exhaust, brakewear and tirewear, GHGs: CH4, N2O, CO2
	Link Average Speed	67.3	48.3 for single lane closure; 48.1 for double lane closure
	Link Average Traffic Volume	8758 for single lane closure; 17515 for double lane closure.	8758 for single lane closure; 17515 for double lane closure.
	Link Designations	1.1 miles	1.1 miles
	Lane Closure Assumption during Emergency Repair Events	1 lane or 2 lane closures.	1 lane or 2 lane closures.
	Total Duration of Existing Emergency Repair Events	--	NYSDOT/ NYSTA Maintenance Data
2037	Model Scale	Project Scale	Project Scale
	Analysis Year	2037	2037
	Representative Day Type	Weekdays	Weekdays
	Representative Month	April	April
	Representative Hour of Day	10-11 am	10-11 am
	Geographic Location	Albany County, NY	Albany County, NY
	Road Type	Urban Restricted Access (Freeway)	Urban Restricted Access (Freeway)
	Pollutants Modeled	NOx, SO2, PM2.5 exhaust, brakewear and tirewear, GHGs: CH4, N2O, CO2	NOx, SO2, PM2.5 exhaust, brakewear and tirewear, GHGs: CH4, N2O, CO2
	Link Average Speed	67.3	45.7 for single lane closure; 45.5 for double lane closure.
	Link Average Traffic Volume	9133 for single lane closure; 18266 for double lane closure.	9134 for single lane closure; 18266 for double lane closure.
	Link Designations	1.1 miles	1.1 miles
	Lane Closure Assumption during Emergency Repair Events	1 lane or 2 lane closures.	1 lane or 2 lane closures.
	Total Duration of Existing Emergency Repair Events	--	NYSDOT/ NYSTA Maintenance Data

6.3.3 Benefit Estimates

The emissions reductions from avoiding emergency repairs and scheduled maintenance are higher than emissions increase from the construction period.

Table 11 outlines the emission benefits for this project for Nitrogen Oxides (NOx), Particulate Matter ($PM_{2.5}$), and Sulfur Dioxide (SO_2) discounted at 7 percent. CO_2 emissions are also presented in Table 11 and discounted at 3 percent. The emissions cost savings total $1.2 million (discounted).

Table 11 – Emissions Benefit Cost Savings

Emissions Type	Constant 2020 $	Discounted 2020 $
Carbon Dioxide (CO2)	$701,220	$460,342
Nitrogen Oxides (NOx)	$335,911	$129,627
Particulate Matter (PM2.5)	$1,551,539	$631,006
Sulfur Dioxide (SO2)	-$1,545	-$609
Total	**$2,587,125**	**$1,220,366**

6.4 Bridge Deck Maintenance Savings

The BCA estimates savings related to bridge deck maintenance by calculating the benefit of improving the deck surface to a “very good” condition, thus reducing costs directly related to performing future emergency repairs and scheduled maintenance.

6.4.1 Methodology

The project will replace the eastbound bridge deck of the Castleton-on-Hudson bridge. The current bridge deck condition is “poor” to “very poor”. The BCA assumes that regular emergency repairs and scheduled maintenance are required to maintain the bridge deck at a functioning level, and that the number of repairs will continue to increase on an annual basis over time. The project will raise the bridge deck condition to “very good” and reduce the need to conduct emergency repairs to 10% of the No-Build scenario and will eliminate frequent scheduled maintenance. The bridge deck will deteriorate over the analysis period and will require increased repairs to maintain the bridge deck, but at a lower frequency than the No-Build scenario.

6.4.2 Assumptions

The assumptions used in the estimation of bridge deck maintenance cost savings are shown in the Table 12.

Table 12– Bridge Deck Maintenance Assumptions			
Variable Name	Unit	Value	Source
Starting Year for Emergency Repairs (No Build)	years	2022	NYSTA project assumptions
Annual Duration of Emergency repairs per Year	hours/year	1147	Based on NYSTA maintenance logs
Annual Percent Growth in Maintenance Requirements in Future Years for No-Build Scenario	percent	1.54%	Ahmed, A., Bai, Q., Lavrenz, S. and Labi, S., 2015. Estimating the marginal cost of pavement damage by highway users on the basis of practical schedules for pavement maintenance, rehabilitation and reconstruction. *Structure and Infrastructure Engineering*,*11*(8), pp.1069-1082

6.4.3 Benefit Estimates

Table 13 outlines the bridge deck maintenance cost savings for this project. The bridge deck maintenance cost savings will total $13.5 million (discounted).

Table 13 – Summary of Bridge Deck Maintenance Cost Savings		
Benefit Type	Constant 2020 $	Discounted 2020 $
Bridge Deck Maintenance Cost Savings	$32,672,703	$13,469,581

6.5 Vehicle Operating Cost Savings

The project will improve bridge deck condition and decrease vehicle operating costs. The model calculates the change in various vehicle operating costs as a function of bridge deck condition and vehicle type. Lower operating costs in more favorable deck conditions arise from lower vehicle maintenance costs, lower depreciation, and lower tire wear, among other factors.

6.5.1. Methodology

Vehicle operating cost savings are calculated based on the improvement in bridge deck surface quality. First, the AADT is applied to the length of the bridge in the eastbound direction and an annualization factor to estimate the annual vehicle miles traveled (VMT) in the No-Build case. VMT in the No-Build case is monetized using an estimate of total vehicle operating cost per mile.

In the Build scenario, a lower vehicle operating cost is applied. This percent reduction is due to the improved deck surface quality. The extent to which operating costs are lower per vehicle mile in the Build compared to No-Build scenarios are assumed to decline over time based on the useful life of the deck replacement.

6.5.2. Assumptions

The assumptions used in the estimation of vehicle operating cost savings are summarized in Table 14.

Table 14 – Vehicle Operating Cost Savings Assumptions			
Variable Name	Unit	Value	Source
Average Passenger Vehicle Costs for New (Good) Condition Highway	cents/mile	24.15	Barnes, G. and Langworthy, P., 2004. Per mile costs of operating automobiles and trucks. Transportation Research Record, 1864(1), pp.71-77.
Average Passenger Vehicle Costs for Poor Condition Highway	cents/mile	27.93	
Commercial Truck Costs for New (Good) Condition Highway	cents/mile	60.76	
Commercial Truck Costs for Poor Condition Highway	cents/mile	68.46	
New Bridge Deck Good-to-Poor Degradation Period	years	40 (non-linear, 75% condition after 20 years)	NYSTA, Deck Replacement Service Life
2003 $ to 2020 $ Adjustment Factor	factor	1.4	Bureau of Labor Statistics CPI Inflation calculator (https://www.bls.gov/data/inflation_calculator.htm)

6.5.3 Benefit Estimates

Table 15 outlines the vehicle operating cost savings for this project of $1.3 million (discounted).

Table 15 – Summary of Vehicle Operating Cost Savings		
Benefit Type	Constant 2020 $	Discounted 2020 $
Vehicle Operating Cost Savings	$3,233,292	$1,332,070

6.6 Residual Value

The project analysis period was chosen to reflect the primary useful deck rehabilitation life of the project, but several project elements will retain value beyond this primary analysis period. This residual or salvage value was estimated and accounted as a project benefit at the end of the analysis period.

6.6.1 Methodology

Construction costs were disaggregated into elements and assigned useful lives of between 20 and 65 years. Initial investments by element were adjusted to 10% of their value over their respective useful lives using a straight-line depreciation curve, with residual values at the end of the analysis period accounted as a benefit to the project.

6.6.2 Assumptions

The assumptions used in the estimation of residual value are summarized in Table 16.

Table 16 – Assumptions for Residual Value			
Variable name	**Unit**	**Value**	**Source**
Useful Life - Deck Replacement	Years	40	NYSTA
Useful Life - Steel Repairs	Years	75	NYSTA
Salvage Value at end of useful life	Percent of Investment	10%	NYSTA
Depreciation Method	Method	Straight Line	

6.6.3 Benefit Estimates

Table 17 summarizes the residual value benefits discounted at a 7 percent discount rate.

Table 17 – Residual Value Estimate		
Benefit Type	**Constant 2020 $**	**Discounted 2020 $**
Residual Value	$22,505,000	$4,436,785

7. Summary of Findings and BCA Outcomes

Table 18 and Table 19 summarize the BCA findings. Annual costs and benefits are computed over the analysis period of the project.

Table 18 – Economic Benefit Estimate		
Benefits	**Constant 2020 $**	**Discounted 2020 $**
Reduced Travel Time Costs	$25,433,296	$8,844,935
Improved Safety and Avoided Crash Costs	$2,221,159	$889,372
Reduction in Emissions Costs	$2,587,125	$1,220,366
Reduction in Bridge Deck Maintenance Costs	$32,672,703	$13,469,581
Reductions in Vehicle Operating Cost	$3,233,292	$1,332,070
Residual Values	$22,505,000	$4,436,785
Total Benefits	**$88,652,575**	**$30,193,108**

Table 19 – Overall Benefit-Cost Analysis Results		
Project Evaluation Metric	**Constant 2020 $**	**Discounted 2020 $**
Total Benefits	$88,652,575	$30,193,108
Total Costs	$42,000,000	$28,506,337
Net Present Value	$1,686,771	
Benefit-Cost Ratio	1.06	

With a 7 percent general discount rate and 3 percent discount rate for CO2, the $28.5 million investment (discounted) would result in $30.2 million in total discounted benefits and a benefit-cost ratio of approximately 1.06.

8. BCA Sensitivity Analysis

The BCA outcomes presented in the previous sections rely on a large number of assumptions and long-term projections, both of which are subject to considerable uncertainty.

The primary purpose of the sensitivity analysis is to help identify the variables and model parameters whose variations have the greatest impact on the BCA outcomes: the "critical variables."

The sensitivity analysis can also be used to:

- Evaluate the impact of changes in individual critical variables – how much the final results would vary with reasonable departures from the "preferred" or most likely value for the variable
- Assess the robustness of the BCA and evaluate, in particular, whether the conclusions reached under the "preferred" set of input values are significantly altered by reasonable departures from those values.
- In the sensitivity analysis, only one assumption from the baseline model is changed to see the effect of that assumption on initial results. The cases presented in the sensitivity analysis are the following:
  - Maintenance and Construction Delay: increasing the free flow speeds of maintenance closure from 50 to 70 mph and emergency closure from 30 to 35 mph
  - Project Costs: increasing the total project cost of the project by 30%.

The sensitivity results are presented in Table 20.

Table 20 – Sensitivity Analysis Summary

Parameters	Change in Parameter Value	Current NPV	New NPV	New B/C Ratio
Maintenance and Construction Delay	Increasing the free flow speeds of maintenance closure from 50 to 70 mph and emergency closure from 30 to 35 mph	$1,686,771	- $1,285,652	0.95
Project Cost	Increasing the total project cost by 30%		- $5,534,095	0.85

9. Schedule of Estimated Benefits and Costs

Table 21 presents the present value costs and present value benefits of the project.

Table 21 – Summary of Benefits and Costs

CY	Maintenance Cost Savings	Travel Time Savings	Emissions	Crash Savings	Vehicle Operating Cost Savings	Total Capital Residual Value	Total Construction	Total Benefits	Net Present Value
2022	$0	$0	$0	$0	$0	$0	$0	$0	$0
2023	$0	$0	$0	$0	$0	$0	$0	$0	$0
2024	$0	$0	$0	$0	$0	$0	$1,335,067	$0	-$1,335,067
2025	$937,824	$0	$0	$76,065	$122,661	$0	$5,365,221	$1,136,549	-$4,228,672
2026	$573,600	-$903,852	-$310,665	$71,388	$115,118	$0	$21,806,049	-$454,411	-$22,260,460
2027	$2,278,054	$1,624,741	$311,415	$66,998	$108,040	$0	$0	$4,389,248	$4,389,248
2028	$496,696	$386,283	$41,499	$62,878	$100,129	$0	$0	$1,087,486	$1,087,486
2029	$1,315,699	$685,188	$129,659	$59,012	$92,783	$0	$0	$2,282,342	$2,282,342
2030	$439,410	$354,454	$46,174	$55,384	$85,961	$0	$0	$981,383	$981,383
2031	$631,872	$416,467	$92,417	$51,978	$79,628	$0	$0	$1,272,361	$1,272,361
2032	$1,432,247	$1,250,076	$245,716	$48,782	$73,748	$0	$0	$3,050,569	$3,050,569
2033	$556,667	$382,697	$105,416	$45,782	$68,291	$0	$0	$1,158,853	$1,158,853
2034	$344,132	$298,667	$54,858	$42,967	$63,225	$0	$0	$803,850	$803,850
2035	$490,506	$351,756	$119,214	$40,325	$58,525	$0	$0	$1,060,326	$1,060,326
2036	$677,259	$449,390	$96,135	$37,846	$54,163	$0	$0	$1,314,793	$1,314,793
2037	$1,176,241	$1,080,738	$288,528	$35,519	$50,117	$0	$0	$2,631,143	$2,631,143
2038	$269,761	$251,909	$0	$33,335	$46,363	$0	$0	$601,368	$601,368
2039	$381,060	$297,411	$0	$31,285	$42,882	$0	$0	$752,638	$752,638
2040	$238,922	$231,439	$0	$29,361	$39,653	$0	$0	$539,376	$539,376
2041	$335,967	$273,581	$0	$27,556	$36,660	$0	$0	$673,764	$673,764
2042	$177,801	$834,013	$0	$25,861	$33,884	$0	$0	$1,071,560	$1,071,560
2043	$528,311	$384,469	$0	$24,271	$31,311	$0	$0	$968,363	$968,363
2044	$187,549	$195,506	$0	$22,779	$28,927	$4,436,785	$0	$4,871,545	$4,871,545
Total	**$13,469,581**	**$8,844,935**	**$1,220,366**	**$889,372**	**$1,332,070**	**$4,436,785**	**$28,506,337**	**$30,193,108**	**$1,686,771**

Note: CY = Calendar Year

[9] Most categories are discounted at 7 percent, while CO_2 emissions are discounted at 3 percent per USDOT's BCA guidance.

U.S. DOT. *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*. March 2022. Available at: Benefit-Cost Analysis Guidance for Discretionary Grant Programs | US Department of Transportation

APPENDIX B
Partnership and Collaboration

- Correspondence from NYSDOT Documenting Project Eligibility for TIP and STIP
- Draft Public Involvement Plan, with Letters of Support Appended

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

KATHY HOCHUL
Governor

MARIE THERESE DOMINGUEZ
Commissioner

JANICE A. McLACHLAN
Chief of Staff and General Counsel

August 31, 2022

Matthew J. Driscoll
Executive Director
New York State Thruway Authority
200 Southern Boulevard
P.O. Box 189
Albany, New York 12201-0189

Dear Executive Director Driscoll:

Pursuant to the Congressional Community Project Funding Requests process, the New York State Department of Transportation affirms that the New York State Thruway Authority's request for the Rehabilitation of the Castleton Bridge, Interstate I-90, (between milepost 800.55 and milepost 801.65) in the Towns of Selkirk and Schodack, Albany and Rensselaer Counties, New York meets the eligibility requirements under Title 23, of United State Code and that the project is scheduled to be obligated within the time period set forth under Transportation and Infrastructure request form.

The State acknowledges that the requested $25.0 million toward this $(35.0M Construction, $42M Overall) project will be incorporated into the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP) when federal funding is allocated for this purpose. Furthermore, the New York State Thruway Authority acknowledged that it is solely responsible for demonstrating the availability of the remaining non-federal share to complete the project.

Thank you for your consideration of the Rehabilitation of the Castleton Bridge Project in the Albany/Capital District Region. If I can be of additional assistance regarding this request, please contact me at 518-457-4422 or Jan.Mclachlan@dot.ny.gov.

Sincerely,

JA McLachlan

Janice A. McLachlan
Chief of Staff and General Counsel

TONKO.HOUSE.GOV
@REPPAULTONKO

2369 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-5076

19 DOVE STREET, SUITE 302
ALBANY, NY 12210
(518) 465-0700

61 CHURCH STREET, ROOM 309
AMSTERDAM, NY 12010
(518) 843-3400

105 JAY STREET, ROOM 15
SCHENECTADY, NY 12305
(518) 374-4547

PAUL D. TONKO

U.S. HOUSE OF REPRESENTATIVES
20TH DISTRICT, NEW YORK

COMMITTEE ON ENERGY AND COMMERCE
CHAIR, SUBCOMMITTEE ON ENVIRONMENT AND CLIMATE CHANGE
SUBCOMMITTEE ON ENERGY
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

COMMITTEE ON NATURAL RESOURCES
SUBCOMMITTEE ON NATIONAL PARKS, FORESTS, AND PUBLIC LANDS

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEE ON ENVIRONMENT
SUBCOMMITTEE ON RESEARCH AND TECHNOLOGY

September 1, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg:

I write in support of the application from the New York State Thruway Authority to the Bridge Investment Program. Funding from the Bridge Investment Program will enable the Thruway Authority to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur Castleton Bridge serves as a vital corridor for commerce and travel in Upstate New York. Each year, 6.5 million trips are taken on this section of the Thruway which not only connects New York to Massachusetts but also the small towns of Coeymans and Schodack on each side of the Hudson River. It is critical that the bridge is restored to provide for the safe, efficient, and sustainable movement of people, goods, and services throughout the region.

Performing deck replacement and superstructure rehabilitation work to the Berkshire Spur Castleton Bridge will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River and enhancing the overall safety for motorists and freight vehicles and the quality of life for residents in this area.

Like you, I am committed to restoring, protecting, and preserving our nation's infrastructure. Your full and fair consideration of this request, consistent with current laws, rules, regulations, and agency policy, is appreciated.

Sincerely,

Paul D. Tonko

PAUL D. TONKO
Member of Congress

PDT/npl

THE SENATE
STATE OF NEW YORK

CHAIRMAN
TRANSPORTATION
SELECT COMMITTEE ON
STATE-NATIVE AMERICAN RELATIONS

COMMITTEES
BANKS
CITIES 2
ENERGY AND TELECOMMUNICATIONS
FINANCE
INSURANCE
RULES

TIMOTHY M. KENNEDY
SENATOR, 63RD DISTRICT

ALBANY OFFICE:
ROOM 708
LEGISLATIVE OFFICE BUILDING
ALBANY, NEW YORK 12247
(518) 455-2426 OFFICE
(518) 426-6851 FAX

DISTRICT OFFICE:
37 FRANKLIN ST., SUITE 550
BUFFALO, NEW YORK 14202
(716) 826-2683 OFFICE
(716) 826-2793 FAX

E-MAIL ADDRESS:
KENNEDY@NYSENATE.GOV

August 26, 2022

The Honorable Peter Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg:

I write in support of the New York State Thruway Authority's $25 million U.S. Department of Transportation Bridge Investment Program (BIP) Grant application. The BIP grant will supplement the cost of a project to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur of the Thruway is a 24-mile segment highway connecting I-87 in Albany County to the New York State/Massachusetts line in Columbia County. This segment serves as a vital corridor for commerce, connecting points between New York State and the Northeast, and local communities in between. Currently, the first phase construction project, an approximate $48 million improvement to replace the westbound bridge deck, is underway. This second phase project will complete the superstructure rehabilitative plan for this bridge. Work will include replacement of the eastbound bridge deck and addressing critically-needed steel repairs and maintenance safety features on the superstructure, allowing this essential transportation link to actively serve in its intended life network purpose.

Each year, there are 6.5 million trips taken on this section, which connects the Towns of Coeymans in Albany County to the Town of Schodack in Rensselaer County. The BIP grant will help provide for the safe, efficient, and sustainable movement of people, goods, and services, while ensuring that surrounding communities benefit from this project.

Performing deck replacement and superstructure rehabilitation work to the Castleton bridge section of the Berkshire Thruway will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River and enhancing the overall safety for motorists and freight vehicles and the quality of life for residents in this area. It will mitigate air quality concerns, upgrade mobility and community connectivity and decrease the need for repeated maintenance which increases traffic disruptions.

For these reasons, I strongly support the New York State Thruway Authority's application for $25 million in funding from the Bridge Investment Program to support the replacement and rehabilitation of the Berkshire Spur Castleton Bridge. Thank you for your attention to this important matter. Should you have any questions, I welcome your call.

Sincerely,

Timothy M. Kennedy
New York State Senator, 63rd District
Chair, New York State Senate Committee on Transportation

THE ASSEMBLY
STATE OF NEW YORK
ALBANY

WILLIAM B. MAGNARELLI
Assemblyman 129th District

CHAIR
Committee on Transportation

COMMITTEES
Economic Development, Job Creation, Commerce and Industry
Education
Rules
Oversight, Analysis and Investigation
Steering
Ways and Means

August 26, 2022

Hon. Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As Chair of the New York State Assembly's Committee on Transportation, I am writing in support of the New York State Thruway Authority's ("Thruway Authority") application for a Transportation Bridge Investment Program ("BIP") grant to rehabilitate the Berkshire Spur Castleton Bridge on the Berkshire Spur of the New York State Thruway (I-87). The Thruway Authority is seeking $25 million for this project that is critically important to both the State and the local community.

The Berkshire Spur of the Thruway is a 24-mile segment of highway connecting I-87 (Albany County) to the New York State/Massachusetts line (in Columbia County). It is a vital corridor for private vehicles and freight going to and from New England. The Berkshire Spur Castleton Bridge on I-87 provides the main crossing of the Hudson River. It is currently undergoing its first phase of construction to replace the westbound bridge deck. Phase two will include replacement of the eastbound bridge deck and addressing critically needed steel repairs and maintenance safety features on the superstructure.

Approximately 6.5 million trips are taken on this section of the Thruway each year between the towns of Coeymans in Albany County and Schodack in Rensselaer County. The proposed project on this bridge will provide long-term improvements, maintain community connections and enhance safety. It will also help to mitigate air quality concerns and decrease the need for repeated maintenance.

Again, I strongly support the Thruway Authority's request for a $25 million BIP grant to rehabilitate the Berkshire Spur Castelton Bridge. This critical piece of infrastructure is important to both New York State and the whole Northeast region. I respectfully request that you give this application a full and fair consideration. Please fell free to contact me if I can be of further assistance.

Very truly yours,

William B. Magnarelli
Member, NYS Assembly
129th District

WBM/cms

DISTRICT OFFICE: State Office Building, 333 East Washington Street, Room 840, Syracuse, New York 13202 • 315-428-9651 • FAX: 315-428-1279
ALBANY OFFICE: Room 830, Legislative Office Building, Albany, New York 12248 • 518-455-4826 • FAX: 518-455-5498
magnarw@nyassembly.gov

THE ASSEMBLY
STATE OF NEW YORK
ALBANY

JACOB C. ASHBY
Assemblyman 107th District

PLEASE REPLY TO
District Office:
❑ 594 Columbia Turnpike
East Greenbush, New York 12061
518-272-6149

Albany Office:
❑ Room 402 LOB
Albany, New York 12248
518-455-5777

ashbyj@nyassembly.gov

VICE-CHAIRMAN
Assembly Minority Conference

RANKING MINORITY MEMBER
Veterans' Affairs

COMMITTEES
Aging
Ethics & Guidance
Health
Racing & Wagering
Ways & Means

The Honorable Pete Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

RE: Bridge Investment Program (BIP)
New York State Thruway Authority

Dear Secretary Buttigieg:

I write today to express my strong support of the New York State Thruway Authority's $25 million U.S. Department of Transportation Bridge Investment Program (BIP) Grant application. The BIP Grant will supplement the cost of a project to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur of the Thruway is a 24-mile segment highway connecting I-87 (Albany County) to the New York State/Massachusetts line (in Columbia County). This segment serves as a vital corridor for commerce, connecting points between New York State and the Northeast, and local communities in between. Each year, there are approximately 6.5 million trips taken on this section. The BIP grant will help provide for the safe, efficient, and sustainable movement of people, goods, and services, while ensuring that surrounding communities benefit from this project.

The first phase construction project, an approximate $48 million improvement to replace the westbound bridge deck, is currently underway. BIP funding would enable the second phase project of completing the superstructure rehabilitative plan for this bridge. Work will include replacement of the eastbound bridge deck and addressing critically needed steel repairs and maintenance safety features on the superstructure, allowing this essential transportation link to actively serve in its intended life network purpose.

Performing deck replacement and superstructure rehabilitation work to the Castleton bridge section of the Berkshire Thruway will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River between the Towns of Coeymans in Albany County to the Town of Schodack in Rensselaer County. It will also greatly enhance the overall safety for motorists and freight vehicles, as well as, the quality of life for residents in this area. It will mitigate air quality concerns and upgrade mobility and community connectivity. It will also decrease the need for repeated maintenance, which certainly creates inconvenient traffic disruptions.

I ask you to please support NYS Thruway Authority's application for the Bridge Investment Program (BIP), and I thank you in advance for your consideration.

Respectfully,

Assemblyman Jake Ashby

Rensselaer County
Office of County Executive Steven F. McLaughlin
Rensselaer County Government Center
1600 Seventh Avenue, Troy, N.Y. 12180
(518) 270-2900

August 25, 2022

The Honorable Pete Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg:

I write in support of the New York State Thruway Authority's $25 million U.S. Department of Transportation Bridge Investment Program (BIP) Grant application.

The BIP Grant will supplement the cost of a project to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur of the Thruway is a 24-mile segment highway connecting I-87 (Albany County) to the New York State/Massachusetts line (in Columbia County). This segment serves as a vital corridor for commerce, connecting points between New York State and the Northeast, and local communities in between. Currently, the first phase construction project, an approximate $48 million improvement to replace the westbound bridge deck is underway. This second phase project will complete the superstructure rehabilitative plan for this bridge. Work will include replacement of the eastbound bridge deck and addressing critically needed steel repairs and maintenance safety features on the superstructure, allowing this essential transportation link to actively serve in its intended life network purpose.

Each year, there are 6.5 million trips taken on this section, which connects the Towns of Coeymans in Albany County to the Town of Schodack in Rensselaer County. The BIP grant will help provide for the safe, efficient, and sustainable movement of people, goods, and services, while ensuring that surrounding communities benefit from this project.

Performing deck replacement and superstructure rehabilitation work to the Castleton bridge section of the Berkshire Thruway will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River and enhancing the overall safety for motorists and freight vehicles and the quality of life for residents in this area. It will mitigate air quality concerns, upgrade mobility and community connectivity and decrease the need for repeated maintenance which increase traffic disruptions.

Sincerely,

Steven F. McLaughlin

Associated General Contractors of New York State, LLC
10 Airline Drive, Suite 203
Albany, NY 12205-1025
518-456-1134 P 518-456-1198 F
www.agcnys.org

August 25, 2022

The Honorable Pete Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg:

I write in support of the New York State Thruway Authority's $25 million U.S. Department of Transportation Bridge Investment Program (BIP) Grant application.

The BIP Grant will supplement the cost of a project to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur of the Thruway is a 24-mile segment highway connecting I-87 (Albany County) to the New York State/Massachusetts line (in Columbia County). This segment serves as a vital corridor for commerce, connecting points between New York State and the Northeast, and local communities in between. Currently, the first phase construction project, an approximate $48 million improvement to replace the westbound bridge deck is underway. This second phase project will complete the superstructure rehabilitative plan for this bridge. Work will include replacement of the eastbound bridge deck and addressing critically needed steel repairs and maintenance safety features on the superstructure, allowing this essential transportation link to actively serve in its intended life network purpose.

Each year, there are 6.5 million trips taken on this section, which connects the Towns of Coeymans in Albany County to the Town of Schodack in Rensselaer County. The BIP grant will help provide for the safe, efficient, and sustainable movement of people, goods, and services, while ensuring that surrounding communities benefit from this project.

Performing deck replacement and superstructure rehabilitation work to the Castleton bridge section of the Berkshire Thruway will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River and enhancing the overall safety for motorists and freight vehicles and the quality of life for residents in this area. It will mitigate air quality concerns, upgrade mobility and community connectivity and decrease the need for repeated maintenance which increase traffic disruptions.

Sincerely,

Michael J. Elmendorff II
President & CEO
Associated General Contractors of New York State

New York Roadway and Infrastructure Coalition
111 Washington Avenue, Suite 501
Albany, New York 12210
(518) 436-0786
office@wearenyric.org
www.wearenyric.org

August 30, 2022

The Honorable Peter Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Ave, S.E.
Washington D.C. 20590

Dear Secretary Bettigieg:

The New York Roadway Infrastructure Coalition (NYRIC) strongly supports the New York State Thruway Authority's $25 million U.S. Department of Transportation Bridge Investment Program (BIP) Grant application.

The New York Roadway Infrastructure Coalition (NYRIC) is a statewide coalition of New York's highway, mass transit and water infrastructure builders, trade unions and project designers that advocate, educate and lobby political leaders to adequately fund New York's vast and aging infrastructure.

The BIP Grant will supplement the cost of a project to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur of the Thruway is a 24-mile segment highway connecting I-87 (Albany County) to the New York State/Massachusetts line (in Columbia County). This segment serves as a vital corridor for commerce, connecting points between New York State and the Northeast, and local communities in between. Currently, the first phase construction project, an approximate $48 million improvement to replace the westbound bridge deck is underway. This second phase project will complete the superstructure rehabilitative plan for this bridge. Work will include replacement of the eastbound bridge deck and addressing critically needed steel repairs and maintenance safety features on the superstructure, allowing this essential transportation link to actively serve in its intended life network purpose.

Each year, there are 6.5 million trips taken on this section, which connects the Towns of Coeymans in Albany County to the Town of Schodack in Rensselaer County. The BIP grant will help provide for the safe, efficient, and sustainable movement of people, goods, and services, while ensuring that surrounding communities benefit from this project.

Performing deck replacement and superstructure rehabilitation work to the Castleton bridge section of the Berkshire Thruway will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River and enhancing the overall safety for motorists and freight vehicles and the quality of life for residents in this area. It will mitigate air quality concerns, upgrade mobility and community connectivity and decrease the need for repeated maintenance which increase traffic disruptions.

Sincerely,

Marc Herbst
President, NYRIC

ACEC New York

American Council of Engineering Companies of New York

August 31, 2022

The Honorable Pete Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg:

I write in support of the New York State Thruway Authority's $25 million U.S. Department of Transportation Bridge Investment Program (BIP) Grant application. The BIP Grant will supplement the cost of a project to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur of the Thruway is a 24-mile segment highway connecting I-87 (Albany County) to the New York State/Massachusetts line (in Columbia County). This segment serves as a vital corridor for commerce, connecting points between New York State and the Northeast, and local communities in between. Currently, the first phase construction project, an approximate $48 million improvement to replace the westbound bridge deck is underway. This second phase project will complete the superstructure rehabilitative plan for this bridge. Work will include replacement of the eastbound bridge deck and addressing critically needed steel repairs and maintenance safety features on the superstructure, allowing this essential transportation link to actively serve in its intended life network purpose.

Each year, there are 6.5 million trips taken on this section, which connects the Towns of Coeymans in Albany County to the Town of Schodack in Rensselaer County. The BIP grant will help provide for the safe, efficient, and sustainable movement of people, goods, and services, while ensuring that surrounding communities benefit from this project.

Performing deck replacement and superstructure rehabilitation work to the Castleton bridge section of the Berkshire Thruway will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River and enhancing the overall safety for motorists and freight vehicles and the quality of life for residents in this area. It will mitigate air quality concerns, upgrade mobility and community connectivity and decrease the need for repeated maintenance which increase traffic disruptions.

Sincerely,

John T. Evers

John T. Evers, PhD.
President & CEO, ACEC New York

6 Airline Drive, Albany, NY 12205-1022 · Tel 518.452.8611
8 West 38th Street, Suite 1101, New York, NY 10018 · Tel 212.682.6336
Email acecny@acecny.org www.acecny.org

Columbia County
Board of Supervisors

401 State Street
Hudson, New York 12534

Telephone: 518-828-1527
Fax: 518-822-0684
www.ColumbiaCountyNY.com

Matt B. Murell
Chairman

Kelly S. Baccaro
Clerk

James J Guzzi
Deputy Chairman

Robert M. Lagonia
Deputy Chairman

August 26, 2022

The Honorable Pete Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg:

I write in support of the New York State Thruway Authority's $25 million U.S. Department of Transportation Bridge Investment Program (BIP) Grant application.

The BIP Grant will supplement the cost of a project to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur of the Thruway is a 24-mile segment highway connecting I-87 (Albany County) to the New York State/Massachusetts line (in Columbia County). This segment serves as a vital corridor for commerce, connecting points between New York State and the Northeast, and local communities in between. Currently, the first phase construction project, an approximate $48 million improvement to replace the westbound bridge deck is underway. This second phase project will complete the superstructure rehabilitative plan for this bridge. Work will include replacement of the eastbound bridge deck and addressing critically needed steel repairs and maintenance safety features on the superstructure, allowing this essential transportation link to actively serve in its intended life network purpose.

Each year, there are 6.5 million trips taken on this section, which connects the Towns of Coeymans in Albany County to the Town of Schodack in Rensselaer County. The BIP grant will help provide for the safe, efficient, and sustainable movement of people, goods, and services, while ensuring that surrounding communities benefit from this project.

Performing deck replacement and superstructure rehabilitation work to the Castleton bridge section of the Berkshire Thruway will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River and enhancing the overall safety for motorists and freight vehicles and the quality of life for residents in this area. It will mitigate air quality concerns, upgrade mobility and community connectivity and decrease the need for repeated maintenance which increase traffic disruptions.

Sincerely,

Matt B. Murell

Kamal Johnson
Mayor, City of Hudson
City Hall, 520 Warren St
Hudson, NY 12534
(518) 828-7217 | mayor@cityofhudson.org
cityofhudson.org

August 29, 2022

The Honorable Pete Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg:

On behalf of the City of Hudson, New York, I write in support of the New York State Thruway Authority's $25 million U.S. Department of Transportation Bridge Investment Program (BIP) Grant application.

The BIP Grant will supplement the cost of a project to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur of the Thruway is a 24-mile segment highway connecting I-87 (Albany County) to the New York State/Massachusetts line (in Columbia County). This segment serves as a vital corridor for commerce, connecting points between New York State and the Northeast, and local communities in between, including Hudson. Currently, the first phase construction project, an approximate $48 million improvement to replace the westbound bridge deck is underway. This second phase project will complete the superstructure rehabilitative plan for this bridge. Work will include replacement of the eastbound bridge deck and addressing critically needed steel repairs and maintenance safety features on the superstructure, allowing this essential transportation link to actively serve in its intended life network purpose.

Each year, there are 6.5 million trips taken on this section, which connects the Towns of Coeymans in Albany County to the Town of Schodack in Rensselaer County. The BIP grant will help provide for the safe, efficient, and sustainable movement of people, goods, and services, while ensuring that surrounding communities benefit from this project.

Performing deck replacement and superstructure rehabilitation work to the Castleton bridge section of the Berkshire Thruway will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River and enhancing the overall safety for motorists and freight vehicles and the quality of life for residents in this area. It will mitigate air quality concerns, upgrade mobility and community connectivity and decrease the need for repeated maintenance which increase traffic disruptions.

Thank you for your consideration of this proposal.

Sincerely,

Kamal Johnson
Mayor, City of Hudson

TRUCKING ASSOCIATION OF NEW YORK

Kendra Hems
President

7 Corporate Drive
Clifton Park, NY 12065
P 518.458.9696
nytrucks.org

September 2, 2022

The Honorable Pete Buttigieg, Secretary
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg,

On behalf of the Trucking Association of New York (TANY) I am writing to support the New York State Thruway Authority's $25 million U. S. Department of Transportation Bridge Investment Program (BIP) Grant application.

The BIP Grant will supplement the cost of a project to replace the bridge deck and rehabilitate the superstructure of the Berkshire Spur Castleton Bridge.

The Berkshire Spur of the Thruway is a 24-mile segment highway connecting I-87 (Albany County) to the New York State/Massachusetts line (in Columbia County). This segment serves as a vital corridor for commerce, connecting points between New York State and the Northeast, and local communities in between. Currently, the first phase construction project, an approximate $48 million improvement to replace the westbound bridge deck is underway. This second phase project will complete the superstructure rehabilitative plan for this bridge. Work will include replacement of the eastbound bridge deck and addressing critically needed steel repairs and maintenance safety features on the superstructure, allowing this essential transportation link to actively serve in its intended life network purpose.

Each year, there are 6.5 million trips taken on this section, which connects the Towns of Coeymans in Albany County to the Town of Schodack in Rensselaer County. The BIP grant will help provide for the safe, efficient, and sustainable movement of people, goods, and services, while ensuring that surrounding communities benefit from this project.

Performing deck replacement and superstructure rehabilitation work to the Castleton bridge section of the Berkshire Thruway will provide a long-term improvement to this corridor, maintaining community connections across the Hudson River and enhancing the overall safety for motorists and freight vehicles and the quality of life for residents in this area. It will mitigate air quality concerns, upgrade mobility and community connectivity and decrease the need for repeated maintenance which increase traffic disruptions.

Sincerely,

Kendra L. Hems