

## NEW YORK STATE BRIDGE AUTHORITY

### STATEMENT OF ESTIMATED CAPITAL NEEDS

The *Capital Improvement Program* adopted by the New York State Bridge Authority for the years 2020-2024 reflects the Authority's continuing commitment to providing the Hudson Valley, its residents, businesses and visitors, with traffic arteries of impeccable structural integrity, operated and maintained with regard to the highest standards of public safety.

The Authority designs maintenance programs to address critical issues before they become problems. Using the philosophy that "maintenance deferred is maintenance denied" – the Authority has demonstrated that preventative maintenance is far less costly in the long run than either chasing repairs or replacing infrastructure.

It is important to note that this process is more cost effective and results in safer structures, however, it does require consistent application and a dedicated closed-system revenue stream. NYSBA achieves its objectives and operates under these principals while maintaining one of the lowest tolls in the nation for a self-supporting entity.

Each year, each bridge is subjected to a detailed physical inspection by an independent firm of structural and civil engineers. The results of these inspections drive the annual work program for the in-house maintenance forces at each bridge. They also produce recommendations for additional research or study, specific project recommendations for the *Capital Improvement Program* and a long-term capital needs projection for financial planning purposes. A copy of the most recent recommendation from the Authority's Consulting Engineers is attached at TAB 9, EXHIBIT C.

The final version of the *Capital Improvement Program* incorporates the recommendations of both the outside engineers and the Authority's own engineering staff. In addition, input is sought from the heads of those Authority departments involved in functions other than Engineering and Maintenance. The program is then recommended to be the Board of the Authority by the Executive Director after close consultation with the Authority's Chief Engineer and Chief Financial Officer.

This program addresses all those currently identified problem areas that might otherwise be expected to interfere with the safe and reliable operation of the bridges during the projected five (5) year period. In addition, it identifies and, in some cases, funds initial work on problems that will be required to be addressed with greater dedication of resources in subsequent years.

The proposed program includes the following elements:

- **Preventive Maintenance** activities over and above the skill and/or staffing capability of in-house maintenance forces. The removal of toxic lead coatings on the older bridge structures and replacement coating to preserve the integrity of steel bridge members in

compliance with current federal environmental and worker health and safety regulations, is a primary example of this type of activity.

- **Facility Improvements** are projects intended to enhance safety, efficiency or capacity of the bridges or the operations that support and maintain them.
- **Equipment** includes purchase and installation of major equipment necessary for the maintenance and operation of the bridges. Mobile inspection platforms, emergency generators and electronic data processing systems are examples of this category.
- **Extraordinary Maintenance** projects, including remedial actions or preservation related repairs identified in the course of the Authority's annual inspection program which are above the skill and/or staffing levels of in-house maintenance forces. These are typically concrete deck and electrical repairs, roadway shoulder and drainage restoration, and asphalt restoration.
- **Facility Rehabilitation** projects, designed to restore deteriorated components of the bridges to their original condition and extend the useful life of the facilities at present operating capacity. Bridge deck replacement, roadway resurfacing and suspension bridge cable restoration are typical examples of projects in this category.
- **Investigations**, pre-design or engineering research studies, necessary to determine the nature and scope of future facility needs.

The program proposed for the coming five (5) years is a logical development of those proposed in recent past years, reflecting both work accomplished to date and new needs developing in the outer years.



**New York State Bridge Authority  
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FACILITY	2019	PROGRAM YEARS					FIVE (5) YEAR TOTAL
		2020	2021	2022	2023	2024	
Rip Van Winkle Bridge	\$0.775	\$2.000	\$0.000	\$10.000	\$0.000	\$0.000	\$12.000
Kingston-Rhinecliff Bridge	\$1.800	\$5.000	\$0.000	\$6.000	\$10.000	\$20.000	\$41.000
Mid-Hudson Bridge	\$0.050	\$10.750	\$6.000	\$2.000	\$0.000	\$10.500	\$29.250
Newburgh-Beacon Bridge	\$10.600	\$6.500	\$41.500	\$36.500	\$5.750	\$0.000	\$90.250
Bear Mountain Bridge	\$0.025	\$3.000	\$0.000	\$0.500	\$10.000	\$0.000	\$13.500
Walkway over the Hudson	\$1.564	\$0.700	\$0.000	\$0.000	\$0.000	\$2.600	\$3.300
Systemwide (Engineering)	\$3.000	\$4.200	\$3.650	\$3.200	\$3.100	\$2.950	\$17.100
Systemwide (IT Dept.)	\$0.665	\$1.148	\$0.586	\$0.357	\$0.298	\$0.538	\$2.927
Systemwide (Adminstration)	\$0.040	\$0.120	\$0.070	\$0.040	\$0.040	\$0.050	\$0.320
Systemwide (Operations)	\$1.780	\$14.725	\$11.895	\$5.995	\$0.495	\$0.500	\$33.610
<b>Program Total</b>	<b>\$20.299</b>	<b>\$48.143</b>	<b>\$63.701</b>	<b>\$64.592</b>	<b>\$29.683</b>	<b>\$37.138</b>	<b>\$243.257</b>

**Board Adopted Sept. 19, 2019**



**New York State Bridge Authority  
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**Engineering**

September 10, 2019  
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Project I.D.	Project Type	Project Title/Description	Phase	Program Years					TOTAL	Remarks	
				2019	2020	2021	2022	2023			2024
R0001 2009	Facility Rehab	<b>Rip Van Winkle, Electrical Upgrade</b>  Complete bridge electrical wiring removal, install new conductor cables, new load centers and transformers.	CONST		1.000					1.000	
			OTHER							0.000	
			TOTAL	0.000	1.000	0.000	0.000	0.000	0.000	1.000	
R0002 2010	Preventive Maintenance	<b>Rip Van Winkle, Maintenance Painting</b>  Power tool clean and spot painting of pier steel bents and Deck Truss.	CONST				10.000			10.000	2022; \$3 mil - Towers 2022; \$7 mil - Deck Truss
			OTHER							0.000	
			TOTAL	0.000	0.000	0.000	10.000	0.000	0.000	10.000	
R0003 2010 2013	Facility Rehab	<b>Rip Van Winkle, Bridge Railing Replacement and sidewalk replacement</b> Complete bridge railing removal and replacement. Pedestrian walkway railing and roadway railings atop parapet walls, including pedestrian sidewalk replacement. C.O. #2 - parapet wall railing \$728K	CONST							0.000	Greene County Grant - three (3) sidewalk viewpoints, \$460K grant reimbursement anticipated in 2019
			OTHER							0.000	
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
R0006 2013	Facility Rehab	<b>RVW - Approach Paving and NovaChip</b> Mill and Fill approach roadway and NovaChip overlay main bridge.	CONST		1.000					1.000	
			OTHER							0.000	
			TOTAL	0.000	1.000	0.000	0.000	0.000	0.000	1.000	
R0007 2017	Facility Rehab	<b>RVW - Truss Link Rehab</b> Structural Rehabilitation of the west abutment truss links  M&M Design / Support	CONST	0.775						0.000	
			OTHER							0.000	
			TOTAL	0.775	0.000	0.000	0.000	0.000	0.000	0.000	
<b>Rip Van Winkle Annual Totals:</b>				<b>\$0.775</b>	<b>\$2.000</b>	<b>\$0.000</b>	<b>\$10.000</b>	<b>\$0.000</b>	<b>\$0.000</b>	<b>\$12.000</b>	<b>&lt;&lt; 2020-2024 Total</b>



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**Engineering**

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Project I.D.	Project Type	Project Title/Description	Phase	Program Years						TOTAL	Remarks	
				2019	2020	2021	2022	2023	2024			
K0001 2007 K0003 2010	Facility Rehab	<b>Kingston-Rhinecliff, Highway Improvements</b>  K1 - West & East Approach Highway Improvements, \$1 mil K3 - Replace deck overlay with "NovaChip", \$2 mil.	CONST		3.000					3.000	Biennial Inspection indicates approach roadway is in good condition.  Moved from 2018 to 2020 and incorporate with R0006 - \$1.0; M0003 - \$3.0 = \$7.0 total K0003 - Incorporated with approach resurfacing.	
			OTHER							0.000		
			TOTAL	0.000	3.000	0.000	0.000	0.000	0.000	3.000		
K0002 2010	Preventive Maintenance	<b>Kingston-Rhinecliff, Program Painting</b>  Lead Abatement and re-painting of the west and east approach girder spans.	CONST				6.000			6.000	\$6 mil delayed to 2022, paint remains in good condition.	
			OTHER							0.000		
			TOTAL	0.000	0.000	0.000	6.000	0.000	0.000	6.000		
K0004 2015	Preventive Maintenance	<b>Kingston-Rhinecliff, Electrical Upgrade</b>  Replace bridge power and lighting cables	CONST		2.000					2.000		
			OTHER							0.000		
			TOTAL	0.000	2.000	0.000	0.000	0.000	0.000	2.000		
K0006 2018	Facility Improvement	<b>Kingston-Rhinecliff, Pedestrian Walkway</b>  2019 provide safe pedestrian crossing between Ulster and Dutchess counties. Furnish and install concrete barrier, pavement markings and approach roadway sidewalk.	CONST	1.500				10.000	20.000	30.000	Empire State Trail - Continuous link between Ulster & Dutchess Counties via Kingston-Rhinecliff Bridge. 2023-2024: \$30mil for pedestrian sidewalk addition	
			OTHER	0.300								0.000
			TOTAL	1.800	0.000	0.000	0.000	10.000	20.000	30.000		
			CONST							0.000		
			OTHER							0.000		
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
<b>Kingston-Rhinecliff Annual Totals:</b>				<b>\$1.800</b>	<b>\$5.000</b>	<b>\$0.000</b>	<b>\$6.000</b>	<b>\$10.000</b>	<b>\$20.000</b>	<b>\$41.000</b>	<b>&lt;&lt; 2020-2024 Total</b>	



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**Engineering**

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Project I.D.	Project Type	Project Title/Description	Phase	Program Years						TOTAL	Remarks
				2019	2020	2021	2022	2023	2024		
M0002 2010	Preventive Maintenance	<b>Mid-Hudson, Maintenance Painting</b>  Power tool clean and spot paint stiffening truss & towers	CONST				2.000			2.000	Postpone contract painting from 2020 to 2022.
			OTHER						0.000		
			TOTAL	0.000	0.000	0.000	2.000	0.000	0.000	2.000	
M0003 2010 & 2011	Facility Rehab	<b>Mid-Hudson, Approach and Bridge Paving</b>  Mill and fill main span overlay with asphalt waterproofing membrane. Replace asphaltic plug joints. Pavement Joint repairs, drainage upgrade and cleaning, milling and re-pave, and striping. Replace Approach median barrier.	CONST			3.000				3.000	Deferred from 2019 - 2021 After curb/railing rehab
			OTHER							0.000	
			TOTAL	0.000	0.000	3.000	0.000	0.000	0.000	3.000	
M0005 2010	Facility Rehab	<b>Mid-Hudson, East Approach Viaduct Spans</b>  Lead abatement of approach spans including arch truss over the Metro-North rail line.	CONST			3.000				3.000	Postponed from 2018 to 2021, \$3 mil Paint System remains in good condition.
			OTHER							0.000	
			TOTAL	0.000	0.000	3.000	0.000	0.000	0.000	3.000	
M0006 2009	Investigation	<b>Mid-Hudson, Main Cable Inspection</b> 1) Inspection of the Main Cable last performed 2009.  Opening Main Cable for Investigation and Sampling. Investigation testing / analysis report.	CONST							0.000	Next scheduled investigation 2028, 10yrs.
			OTHER	0.050						0.000	
			TOTAL	0.050	0.000	0.000	0.000	0.000	0.000	0.000	
M0013 2019	Facility Improvement	<b>Mid-Hudson, Star Building &amp; Admin Roof</b> Loading Dock w/ Roof system addition Admin Roof Rehab	CONST		0.750					0.750	
			OTHER							0.000	
			TOTAL	0.000	0.750	0.000	0.000	0.000	0.000	0.750	



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Project I.D.	Project Type	Project Title/Description	Phase	Program Years					TOTAL	Remarks	
				2019	2020	2021	2022	2023			2024
M0014 2019	Facility Rehab	Mid-Hudson Bridge Remove and Replace bridge curbing & box beam railing	CONST		10.000					10.000	
			OTHER						0.000		
			TOTAL	0.000	10.000	0.000	0.000	0.000	0.000	10.000	
M0015 2019	Facility Rehab	Mid-Hudson Bridge Remove and Replace Main Cable Suspenders	CONST						10.000	10.000	
			OTHER						0.000		
			TOTAL	0.000	0.000	0.000	0.000	0.000	10.000	10.000	
M0016 2019	Preventative Maint.	Mid-Hudson Bridge West Approach Rock Scaling	CONST						0.500	0.500	
			OTHER						0.000		
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.500	0.500	
			CONST						0.000		
			OTHER						0.000		
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.000		0.000
			CONST						0.000		
			OTHER						0.000		
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.000		0.000
Mid-Hudson Annual Totals:				\$0.050	\$10.750	\$6.000	\$2.000	\$0.000	\$10.500	\$29.250	<< 2020-2024 Total



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Project I.D.	Project Type	Project Title/Description	Phase	Program Years						TOTAL	Remarks
				2019	2020	2021	2022	2023	2024		
N0005 2007	Facility Improvement	<b>Newburgh-Beacon, Approach Interchange</b>  I-84 / Rte. 9W Overpass: Rehabilitation project: Deck Replacement and raising the floor system for vertical clearance and west approach reconstruction. 2016 - Rte 9W Design 2018 - 2019: Construction & Construction Inspection	CONST	8.850						0.000	1) \$2 mil west approach reconstruction and new truck median barrier has been included in the 9W / I-84 rehabilitation project, 2018 - 2019
			ENGR	0.400						0.000	
			TOTAL	9.250	0.000	0.000	0.000	0.000	0.000	0.000	
N0008 2014	Facility Rehab	<b>NBB - North Span Deck Replacement</b> Replace deck, replace parapet wall, place polymer waterproofing overlay and install new LUS / gantries.	CONST		5.000	40.000	35.000	5.000		85.000	<u>Award NBB Deck - Spring 2020</u> -\$90mil deck replacement 2020, 2021, 2022 and 2023 approach/project closeout/retainage. -Design Deck Replacement 2019 - 2020 -Construction Award Spring 2020; start East & West approach crossover.
			OTHER	0.500	0.750	1.500	1.500	0.750		4.500	
			TOTAL	0.500	5.750	41.500	36.500	5.750	0.000	89.500	
N0010 2016	Extra Maintenance	<b>NBB - North Span Catwalk &amp; Cable Tray Upgrade</b>  Lower & Upgrade Catwalk to OSHA Compliance and Upgrade Utility Cable Tray system.	CONST	0.320						0.000	
			OTHER	0.030						0.000	
			TOTAL	0.350	0.000	0.000	0.000	0.000	0.000	0.000	
N0012 2016	Extra Maintenance	<b>NBB - South Span Pedestrian Walkway Repairs.</b>  Remove and replace sidewalk stringers and plates	CONST	0.500	0.750					0.750	
			OTHER							0.000	
			TOTAL	0.500	0.750	0.000	0.000	0.000	0.000	0.750	
			CONST							0.000	
			OTHER							0.000	
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
<b>Newburgh-Beacon Annual Totals:</b>				<b>\$10.600</b>	<b>\$6.500</b>	<b>\$41.500</b>	<b>\$36.500</b>	<b>\$5.750</b>	<b>\$0.000</b>	<b>\$90.250</b>	<b>&lt;&lt; 2020-2024 Total</b>



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Project I.D.	Project Type	Project Title/Description	Phase	Program Years					TOTAL	Remarks	
				2019	2020	2021	2022	2023			2024
B0005 2007	Extra Maintenance	<b>Bear Mountain - Main Cable Evaluation</b>  Opening Main Cable for Investigation and Sampling. Investigation testing / analysis report.	CONST						0.000	Next Scheduled Investigation 2028, 10yrs.	
			OTHER	0.025					0.000		
			TOTAL	0.025	0.000	0.000	0.000	0.000	0.000		0.000
B0002 2007	Preventive Maintenance	<b>Bear Mountain - Maintenance Painting</b>  Spot clean and overcoat towers and stiffening truss	CONST					10.000	10.000		
			OTHER						0.000		
			TOTAL	0.000	0.000	0.000	0.000	10.000	0.000		10.000
B0003 2007 2019	Extra Maintenance	<b>Bear Mountain - Main Cable Safety Handrope and Suspender replacement in 2028</b> Remove and replace main cable safety handrope \$2mil Remove and replace main cable suspenders \$5mil	CONST						0.000	Hand rope moved from 2022 to 2028 combine with suspender rope replacement	
			OTHER						0.000		
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.000		0.000
B0006 2017	Preventive Maintenance	<b>Bear Mountain - Approach Paving</b>  Deck Repairs, mill, new overlay and pavement markings Approach Rehab 2022	CONST		3.000		0.500				
			OTHER								
			TOTAL	0.000	3.000	0.000	0.500	0.000	0.000		0.000
			CONST								
			OTHER								
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.000		
<b>Bear Mountain Annual Totals:</b>				<b>\$0.025</b>	<b>\$3.000</b>	<b>\$0.000</b>	<b>\$0.500</b>	<b>\$10.000</b>	<b>\$0.000</b>	<b>\$13.500</b>	<b>&lt;&lt; 2020-2024 Total</b>



**New York State Bridge Authority  
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**Engineering**

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Project I.D.	Project Type	Project Title/Description	Phase	Program Years						TOTAL	Remarks
				2019	2020	2021	2022	2023	2024		
W0001 2010	Investigation	<b>WOTH, Bridge Inspection</b>  Performed detailed inspection of the bridge structure with hands-on inspection of fracture critical members, 5 year cycle, 2010, 2015, 2020 and 2025, etc. 2017 - Underwater inspection to be included with Authority's current 5 yr cycle, see S0002.	CONST							0.000	M&M; WOTH Bridge Inspection 105.1 ES  2025 - \$0.500 Biennial Inspection
			OTHER		0.400					0.400	
			TOTAL	0.000	0.400	0.000	0.000	0.000	0.000	0.400	
W0006 2011	Preventative Maintenance	<b>WOTH, Steel Repairs and Misc. Painting</b>  2018 priority steel repairs . Misc. cleaning and painting approach tower lower base steel.	CONST	1.506						2.600	Postponed Painting from 2021 to 2024: Revised program 2024: \$35 mil total \$10 mil 2024; \$10 mil 2025; \$10 mil 2026; include \$2.6 mil for additional steel repairs 2024
			OTHER	0.058						0.000	
			TOTAL	1.564	0.000	0.000	0.000	0.000	2.600	2.600	
W0007 2011	Preventive Maintenance	<b>WOTH - River Pier Base Repairs</b>  1) 2017 Under water pier inspection 2) Concrete pier base repairs pending inspection findings combine with S0005 -Sys pier base repairs	CONST		0.300					0.300	
			OTHER							0.000	
			TOTAL	0.000	0.300	0.000	0.000	0.000	0.000	0.300	
			CONST							0.000	
			OTHER							0.000	
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			CONST							0.000	
			OTHER							0.000	
			TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
<b>WOTH Annual Totals:</b>				<b>\$1,564</b>	<b>\$0.700</b>	<b>\$0.000</b>	<b>\$0.000</b>	<b>\$0.000</b>	<b>\$2.600</b>	<b>\$3.300</b>	<b>&lt;&lt; 2020-2024 Total</b>



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**Engineering**

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Project I.D.	Project Type	Project Title/Description	Phase	Program Years							TOTAL	Remarks
				2019	2020	2021	2022	2023	2024			
S0001	Investigation	<b>BA2017-RE-103: General Consultant and Inspections</b>  Annual detailed inspection of each bridge facility with hands on inspection of all fracture critical members. Odd year biennial inspection: KRB & NBB (N&S spans) Even year biennial inspection: RVWB, MHB & BMB	INSP	0.600	0.850	0.700	0.750	0.800	0.800	3.700	NYSBA - Biennial inspection support, Authority personnel and equipment, UB 60 & 30.  Biennial Consultants: 2017 - 2022 Modjeski & Masters, Inc. ATANE, formerly HAKS Engineering WSP Engineering	
			NYSBA	0.090	0.090	0.090	0.090	0.090	0.090	0.450		
			TOTAL	0.690	0.740	0.790	0.840	0.890	0.890	4.150		
S0002 2007	Investigation	<b>Periodic Underwater Bridge Inspections</b>  Diver hands-on inspection and video tape inspections of all Authority in-water piers below the water surface. Work include observation and recommendation by professional engineers, 5 yr. cycle.	INSP				0.150			0.150		
			OTHER							0.000		
			TOTAL	0.000	0.000	0.000	0.150	0.000	0.000	0.150		
S0003	Extra Maintenance	<b>BA20XX-RE-10X: In-House Capital Projects</b>  In-House construction activities	CONST	1.000	1.000	1.000	1.000	1.000	1.000	5.000		
			ENGR	0.310	0.310	0.310	0.310	0.310	0.310	1.550		
			TOTAL	1.310	1.310	1.310	1.310	1.310	1.310	6.550		
S0004	Extra Maintenance	<b>BA2016-RE-101: Capital Maintenance Projects</b>  Standby readiness contract for urgent bridge and highway repairs.	CONST	0.500	0.500	0.500	0.500	0.500	0.250	2.250	Reduce 2024, NBB N. Span Deck completed	
			OTHER							0.000		
			TOTAL	0.500	0.500	0.500	0.500	0.500	0.250	2.250		
S0005 2008	Preventive Maintenance	<b>Systemwide, River Pier Base Repairs</b>  Masonry pier pointing, concrete repairs and rip-rap placement as recommended from underwater and visual inspections.	CONST		0.750					0.750	NBB \$0.500 KRB \$0.250	
			OTHER							0.000		
			TOTAL	0.000	0.750	0.000	0.000	0.000	0.000	0.750		



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Project I.D.	Project Type	Project Title/Description	Phase	Program Years						TOTAL	Remarks
				2019	2020	2021	2022	2023	2024		
S0006 2008	Preventive Maintenance	<b>Systemwide, Substructure Repairs (Land Piers)</b>  Partial depth concrete repairs and sealing	CONST		0.500					0.500	Deferred from 2019 - 2020 BMB \$0.200 MHB \$0.100 KRB \$0.200
			OTHER						0.000		
			TOTAL	0.000	0.500	0.000	0.000	0.000	0.000	0.500	
S0007	Equipment	<b>Systemwide, Equipment Purchases</b>  Acquisition of major extraordinary vehicles and equipment necessary to operate and maintain the bridge system.	CONST							0.000	2021 - Re-build 2009 UB, 12 year cycle.
			OTHER	0.500	0.400	1.050	0.400	0.400	0.500	2.750	
			TOTAL	0.500	0.400	1.050	0.400	0.400	0.500	2.750	
Systemwide (Engineering) Annual Totals:				\$3.000	\$4.200	\$3.650	\$3.200	\$3.100	\$2.950	\$17.100	<< 2020-2024 Total



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**IT**

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Project I.D.	Project Type	Project Title/Description	Budget	Program Years						TOTAL	Remarks
				2019	2020	2021	2022	2023	2024		
SI-0001	IT	Systemwide - Office Equipment Purchases, Copier, Printers, plotter, ID card system	Budget	0.035	0.035					0.035	Ops Copier
SI-0002	IT	Systemwide - PC Upgrade (System Hardware)	Budget	0.040	0.033	0.028	0.031	0.032	0.033	0.157	
SI-0003	IT	Mid-Hudson - Necklace Lights	Budget	0.005	0.600	0.005	0.005	0.005	0.005	0.620	Rehab aging necklace lights installed in 2001; Replace lens, power supply, gaskets, etc.
SI-0005	IT	Systemwide - Card Access / FOB	Budget	0.015	0.015	0.015	0.015	0.015	0.015	0.075	
SI-0010	IT	ITS Components - Multiplexer, cabinet, UPS	Budget	0.015	0.015	0.015	0.015	0.015	0.015	0.075	
SI-0013	IT	Windows File server(s) and Web Filter	Budget	0.165	0.150	0.163	0.151	0.091	0.110	0.665	
SI-0015	IT	Data Cabling	Budget	0.035	0.035	0.035	0.035	0.035	0.035	0.175	
SI-0023	IT	Firewall/Virtual Private Network (VPN)	Budget	0.050	0.050	0.065				0.115	2020 - Ironport email filter-replacement 2020 - NBB Redundant Internet Connection 2021 - Firewall Replacement
SI-0026	IT	Systemwide - Radios	Budget							0.000	
SI-0029	IT	Systemwide -Backup	Budget	0.055		0.055			0.065	0.120	
SI-0030	IT	Systemwide - Internet Re-design	Budget	0.012	0.015					0.015	
SI-0032	IT	Systemwide - Alarm	Budget	0.005	0.100	0.005	0.005	0.005	0.010	0.125	2020 CC Alarm Assessment / Re-Design
SI-0035	IT	Routers and Switches	Budget	0.003		0.100				0.100	
SI-0036	IT	Mid-Hudson - Command Center, ITS Equip.	Budget	0.225	0.100	0.100	0.100	0.100	0.250	0.650	Video Wall Replacement
Systemwide (IT Dept.) Annual Totals:				\$0.665	\$1.148	\$0.586	\$0.357	\$0.298	\$0.538	\$2.927	<< 2020-2024 Total



**New York State Bridge Authority  
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**Administration**

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Project I.D.	Project Type	Project Title/Description		Program Years						TOTAL	Remarks
				2019	2020	2021	2022	2023	2024		
SA-0001	Admin	Equipment Purchases, Administration	Budget	0.020	0.020	0.020	0.020	0.020	0.025	0.105	Misc Equipment: printers, Id badges, etc.
SA-0002	Admin	Business Application Enhancement	Budget	0.020	0.100	0.050	0.020	0.020	0.025	0.215	JDE Version upgrade 2020 Possible Kronos Software Upgrade 2020 I-Series Hardware upgrade 2021
SA-0003	Admin	Office furnishing improvements, Hdq & Ops.	Budget	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
SA-0004	Admin	HR Workflow Solution and Document Imaging	Budget	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Systemwide (Administration) Annual Totals:				\$0.040	\$0.120	\$0.070	\$0.040	\$0.040	\$0.050	\$0.320	<< 2020-2024 Total



**New York State Bridge Authority**  
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**Operations**

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Project I.D.	Project Type	Project Title/Description	Budget	2019	Program Years					TOTAL	Remarks
					2020	2021	2022	2023	2024		
SO-0001	OPS	E-Z PASS - Cashless Tolling Study	Budget	0.019	0.490					0.490	Conduct Study
SO-0003	OPS	All Electronic Tolling (AET), Plaza Removal	Budget		7.000	5.000	5.000			17.000	
SO-0004	OPS	Toll System Upgrade / Toll Gates / Lane Monitors / Antenna replacement and Security Gates	Budget	0.100	0.100	0.100	0.100	0.100	0.100	0.500	Replace Toll Gates & Monitors Security Gates
SO-0007	OPS	Lane Use Signals, Replacement	Budget	0.025	0.025	0.025	0.025	0.025	0.025	0.125	
SO-0008	OPS	Plaza & Central Server Upgrades	Budget	0.015	0.015	0.015	0.015	0.015	0.015	0.075	
SO-0011	OPS	UPS (Un-interruptible Power System)	Budget	0.010	0.100	0.010	0.010	0.010	0.010	0.140	
SO-0012	OPS	Suicide Call Boxes - Upgrade / Replacement	Budget	0.005	0.005	0.005	0.005	0.005	0.010	0.030	
SO-0018	OPS	Toll System Replacement	Budget		5.000	5.000				10.000	
SO-0030	OPS	Security Camera Replacement / Upgrade	Budget	0.210	0.800	0.800				1.600	Sidewalk Detection - BMB Pilot 2020 Sidewalk Detection - Complete Project 2021
SO-0031	OPS	Security Enhancement/Hardening - Perimeter Fencing	Budget							0.000	
SO-0033	OPS	Systemwide - EJ Ward (Fuel Dispensing Upgrade)	Budget	0.015	0.015	0.015	0.015	0.015	0.015	0.075	
SO-0034	OPS	Systemwide Cameras Replacements	Budget	0.200	0.200	0.200	0.200	0.200	0.200	1.000	
SO-0035	OPS	ITS Consultant - Kapsch, Inc	Budget	0.125	0.125	0.125	0.125	0.125	0.125	0.625	
SO-0036	OPS	National Interoperability (NICOP) Protocol New tolling protocol will facilitate seamless travel across North America's tolling facility via multi-protocol reader.	Budget				0.500			0.500	2021 - Multi Protocol Reader
SO-0037	OPS	NBB (N&S) - Fiber Optic Replacement North America's tolling facility via multi-protocol reader.	Budget	1.000						0.000	Kapsch
SO-0038	OPS	VMS Upgrade - Systemwide	Budget	0.015	0.400	0.600				1.000	Dynac - 2020 Server and Version Upgrade 2021 - System Buildout
SO-0040	OPS	Systemwide - LPR	Budget	0.050	0.450					0.450	Replace and upgrade servers. Add additional server for redundancy. 2020 - Replace LPR Cameras and add capabilities
Systemwide (Operations) Annual Totals:				1.780	14.725	11.895	5.995	0.495	0.500	33.610	<< 2020-2024 Total