



**Great Lakes
St. Lawrence Seaway
Development Corporation**

**Seaway Infrastructure Program (SIP)
Annual Report to Congress**



Fiscal Year 2022

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Background and Summary

As requested in the Consolidated Appropriations Act, 2023 (Pub. L. No. 117-328), Joint Explanatory Statement (Division L), the Great Lakes St. Lawrence Seaway Development Corporation (GLS or Corporation) is providing this annual report to the House and Senate Committees on Appropriations on the status of its Seaway Infrastructure Program (SIP).

The St. Lawrence Seaway is comprised of perpetual assets (locks, channels, an international bridge, highway tunnel, and accompanying facilities and equipment), which require capital reinvestment to continue to operate safely, reliably, and efficiently. Without sufficient investment in GLS's perpetual assets, the future availability and reliability of the U.S. section of the St. Lawrence Seaway would be at risk. Although the GLS has maintained a 99 percent reliability rate over its history, the SIP is currently necessary to continue accomplishing this level in the future.

The start of the GLS's infrastructure program in 2009 represented the first time in the GLS's history that a comprehensive effort had been undertaken to modernize the Seaway infrastructure, including rehabilitation of and improvements to the U.S.-operated locks, the navigation channels, and other Corporation-owned facilities and assets located in Upstate New York. None of the infrastructure projects increases the authorized depth or width of the navigation channel or the size of the lock facilities.

Over its history, more than 3 billion metric tons of cargo valued at more than \$500 billion have moved through the St. Lawrence Seaway. This binational commercial transportation route impacts 241,000 U.S. and Canadian jobs and generates annual binational economic benefits of \$36 billion in economic activity, \$17.8 billion in personal income and local consumption expenditures, and \$6.3 billion in Federal, state/provincial, and local tax revenue.¹

In Fiscal Year (FY) 2022, the GLS obligated \$18.8 million on 28 SIP projects, including \$9 million on the new Seaway Visitor Center at Eisenhower Lock, \$3.1 million on concrete replacement in the vertical lift gate pit at Eisenhower Lock, \$1.9 million on the drydocking of the GLS's buoy barge for maintenance and upgrades, and \$1.3 million on maintenance dredging expenses. Additionally, the GLS obligated and expended \$519,000 in personnel costs in FY 2022 for SIP-related staff activities. As of September 30, 2022, the GLS's unobligated balance for SIP projects was \$14 million.

Through the first 14 years of dedicated Seaway infrastructure funding (FYs 2009-2022), the GLS has obligated \$209 million on 62 separate projects (*see pages 14-15*). These projects included maintenance dredging in the U.S. portion of the Seaway navigation channel, lock miter gate and culvert valve machinery upgrades, culvert valve replacements, hands-free mooring installation at the locks, gatelifter upgrades, miter gate rehabilitation, and tugboat replacements, as well as various other structural and equipment repairs and/or replacement.

¹ [*Economic Impacts of Maritime Shipping in the Great Lakes-St. Lawrence Region*](#), Martin Associates, July 2023.

These significant investments clearly demonstrate the Federal commitment to the long-term health and vitality of the binational waterway, complementing infrastructure investments being made by other Great Lakes Seaway System stakeholders, including ports, terminals, and carriers.

During the 2022 navigation season, the GLS recorded the lowest level of lock-related delays in history at 2 hours, 3 minutes, resulting in a lock availability rate of 99.97 percent for the 286-day season. The successful planning and execution of the SIP is a key factor for the achievement of the near-perfect lock availability rate.

SIP projects and estimates focus on eight infrastructure categories:

- Locks and Associated Structures – Includes the structures at Eisenhower and Snell Locks and those structures that are required for the operation and/or maintenance of the locks.
- Lock Equipment – Includes the equipment at Eisenhower and Snell Locks that is used to transit vessels through the locks and the controls for that equipment.
- Utilities – Includes utilities infrastructure for electricity, fuel, potable water, raw water, and compressed air.
- O&M Equipment and Work Vehicles – Includes mobile heavy and light equipment, shop equipment, and Massena-based work vehicles.
- Buildings and Grounds – Includes construction of and improvements to GLS-owned buildings, roadways, work areas, parking areas, and grounds.
- Dredging, Navigation Aids, and Floating Plant – Includes projects that improve the safety and efficiency of navigation, as well as improvements to and replacement of the GLS’s floating plant.
- Seaway International Bridge – Includes capital improvements to the South Channel Span of the Seaway International Bridge. (GLS owns 68 percent of the South Channel Span.)
- Information Technology (IT) and Communications – Includes improvements to the GLS’s non-Common Operating Environment (COE) IT network and systems as well as CCTV, cameras, and communication improvements.

The SIP five-year capital planning process ensures that aging machinery, equipment, and parts are rehabilitated/replaced; buildings, grounds, and utilities are sufficiently maintained/refurbished; and commercial trade continues to move on the Seaway safely without interruption or delays. The GLS’s SIP is consistent with existing Office of Management and Budget (OMB) guidance and requirements regarding useful segments of a capital project and is subject to annual appropriations.

For the FY 2024-2028 timeframe, the SIP five-year estimates totaling \$82.4 million are included in this report on pages 16-17. Dollar amounts for SIP projects are “project feasibility” estimates that can vary by an industry-recognized 20-30 percent. While many SIP projects have received funding over several years, the GLS uses a multi-phased approach in developing each project to ensure annual funding produces distinct and useful segments, in accordance with OMB Circular A-11.

FY 2022 Seaway Infrastructure Program (SIP) Project Updates

The following information provides an update on the 19 SIP projects with respective obligations totaling more than \$25,000 in FY 2022.² The GLS continues to use contracts that promote the Buy American Act and small and disadvantaged businesses, as well as Federal contract programs offered by the General Services Administration (GSA), including e-Buy, AutoChoice, and the Federal Supply Schedule, whenever possible.

1) LOCK AND ASSOCIATED STRUCTURES – UPGRADE OF FENDERING ON APPROACH WALLS AT BOTH LOCKS



Section of ship fendering on the downstream side of Eisenhower Lock (old wood fendering on the right side of photo with newly installed rubber fendering on the upper left)

General Description: This project is to replace wood fendering on the approach walls at both locks with rubber fenders to protect both transiting vessels and the approach walls. The cost of the wood fenders is increasing such that the rubber fenders have become cost competitive. The rubber fenders that have been installed to date have performed well.

FY 2022 Obligations:³ \$264,844

Total Obligations (FYs 2009-2022): \$1,096,502

Project Update (as of September 30, 2022): In FY 2022, the GLS made purchases for supplies and equipment necessary for the GLS workforce to complete repairs to damaged ship fendering at the two U.S. Seaway locks. Purchases included 400 linear feet of trapezoidal (v-shaped) fendering and 80 linear feet of rubber gate fendering from DS Imports LLC, Galveston, Texas, for \$192,405, and steel brackets from Jeffords Steel and Specialty Co. Inc., Plattsburgh, N.Y., for \$25,059. Additionally, the GLS purchased installation supplies and hardware required for the fendering installation from Fastenal Co., Winona, Minn. (\$13,640). The fendering work is completed by the GLS maintenance workforce, and this is a regular and recurring project based on fendering damage. Most of the fendering purchased in FY 2022 was installed during FY 2022.

² There were 9 SIP projects with FY 2022 obligations below \$25,000 that are not reported in the project update section: (1) Lock and Associated Structures – Rehabilitation of Diffusers at Snell Lock (\$21,524); (2) Lock Equipment – Installation of Ice Flushing System at Snell Lock (\$21,296); (3) O&M Equipment and Work Vehicles – Replacement of Heavy and Light Equipment and Vehicles (\$16,151); (4) IT and Communications – Upgrade of Communications Systems (\$14,891); (5) Lock and Associated Structures – Rehabilitation of Concrete at Snell Lock (\$8,185); (6) IT and Communications – Upgrade of Massena-Based Telephone System (\$4,229); (7) IT and Communications – Upgrade of Lock Controls (\$2,455); (8) Buildings and Grounds – Replacement of Paving and Drainage Infrastructure (\$150); and (9) Lock Equipment – Upgrade of Drainage Infrastructure in Galleries and Recesses at Both Locks (\$76).

³ The “FY 2022 Obligations” amount includes all GLS obligations incurred related to the project during FY 2022, including contracts, labor hours, and warehouse inventory drawdowns.

2) LOCKS AND ASSOCIATED STRUCTURES – REHABILITATION OF CONCRETE AT EISENHOWER LOCK

General Description: This project is to replace deteriorated/damaged concrete at the Eisenhower Lock in all areas except the diffusers. This includes concrete that was of poor quality when placed during original construction and concrete that has been damaged by freeze-thaw cycles and by vessel impacts. This deteriorated/damaged concrete includes mass concrete that forms the walls inside the lock chambers as well as the walls, floors, and ceilings of the filling and emptying culverts, and the gate sills.

FY 2022 Obligations: \$3,147,402

Total Obligations (FYs 2009-2022): \$6,905,946

Project Update (as of September 30, 2022): In early FY 2022, the GLS awarded a contract to Patterson-Stevens Inc., Tonawanda, N.Y., related to concrete restoration work in the vertical lift gate pit at Eisenhower Lock for \$3.1 million. The work was completed in FY 2022 following the completion of the 2021 navigation season and included the demolition as well as restoration of approximately 220 cubic yards of concrete at Eisenhower Lock.



Contractors working on concrete replacement in the vertical lift gate at Eisenhower Lock in the winter of 2022.

3) LOCKS AND ASSOCIATED STRUCTURES – REHABILITATION OF DIFFUSERS AT EISENHOWER LOCK

General Description: This project is to replace deteriorated/damaged concrete in the diffusers at the Eisenhower Lock. This includes poor-quality concrete used during original construction of the locks as well as concrete that was damaged by freeze-thaw cycles. The diffusers are the outlet structures used to dampen the flow of water when the lock is emptied.

FY 2022 Obligations: \$153,498

Total Obligations (FYs 2009-2022): \$6,504,850

Project Update (as of September 30, 2022): In FY 2022, the GLS awarded a contract modification for \$71,899 to Kubricky Construction Corp., Gansevoort, N.Y., related to the completion of the concrete diffusers replacement project at Eisenhower Lock. This work began in FY 2021 following the completion of the 2020 navigation season and was completed in the winter of FY 2022. Additionally, the GLS awarded a contract for \$74,850 to Bergmann Associates, Rochester, N.Y., for technical oversight and inspection of the FY 2022 winter work for this project.

4) LOCKS AND ASSOCIATED STRUCTURES – REHABILITATION OF STOP LOGS AT BOTH LOCKS

General Description: This multi-year project is for rehabilitating the GLS’s 34 stop logs, which are truss-framed steel structures that span the 80-foot-wide locks and have steel plates installed on one vertical side. The stop logs are stacked at each end of both locks to create temporary dams allowing the locks to be dewatered for inspection and/or repair of the underwater surfaces and components during the winter maintenance season. These structures are more than 60 years old and need to be rehabilitated on a regular basis to ensure continued reliability.

FY 2022 Obligations: \$32,425

Total Obligations (FYs 2009-2022): \$115,949

Project Update (as of September 30, 2022): The GLS awarded two contracts for supplies totaling \$12,977 related to the ongoing rehabilitation work of the stop logs at the two locks. GLS crews completed the work that included blasting and painting of the stoplogs, replacement of seals and hardware, and structural repairs. The GLS estimates completing 2-3 stoplog rehabilitations each year. The GLS anticipates purchasing supplies for this project over the next 10-15 years to complete rehabilitation of all 34 stop logs.

5) LOCKS AND ASSOCIATED STRUCTURES – REPLACEMENT OF RECESS COVERS AT BOTH LOCKS



Completed culvert valve recess cover on the downstream north side of Snell Lock.

General Description: This is a multi-year project to replace steel and steel/concrete composite covers that are used to access the lock operating machinery located in the galleries and recesses at both locks. Many of these recess covers are original and will be over 60 years old when they are replaced. They have deteriorated due to the use of salt to keep covered areas clear of ice, and they have been further damaged by trucks and heavy equipment driving over them. The GLS will replace the covers with more durable/maintainable materials designed for greater loads.

FY 2022 Obligations: \$137,510

Total Obligations (FYs 2009-2022): \$962,192

Project Update (as of September 30, 2022): The GLS awarded several contracts in FY 2022 totaling \$54,160 to purchase supplies and materials to fabricate recess covers for installation on the lock walls to restore and/or improve the load-carrying capacity of those covers and to keep water from damaging the lock operating equipment below. FY 2022 work completed by GLS crews was focused on two recess covers over the culvert valve machinery at Eisenhower Lock.

6) LOCKS AND ASSOCIATED STRUCTURES – UPGRADE OF LIGHTING AT BOTH LOCKS

General Description: This project is to replace stringed incandescent lighting with fixed brighter and more energy efficient LED lighting below grade at both locks in the cable galleries and other work areas.

FY 2022 Obligations: \$104,358

Total Obligations (FYs 2009-2022): \$104,358

Project Update (as of September 30, 2022): The GLS awarded three contracts totaling \$37,130 for LED lighting and installation equipment and supplies for approximately 2,000 linear feet of lighting. GLS crews completed installation of the lighting at the north and south cable galleries of both locks in FY 2022. The GLS will need to complete the lighting upgrades in the riser sections at both ends of both locks, which is expected in the next 2-4 years.

7) LOCKS AND ASSOCIATED STRUCTURES – INSTALLATION OF MARINE BASE BOAT LAUNCH RAMP

General Description: This project is for the fabrication and installation of a small boat launch at the GLS Marine Base adjacent to the canal between Eisenhower and Snell Locks. The launch will allow the GLS to dispatch/retrieve its smaller work boats and hydrographic survey boat quickly and safely.

FY 2022 Obligations: \$61,374

Total Obligations (FYs 2009-2022): \$61,374

Project Update (as of September 30, 2022): The GLS awarded a contract in FY 2022 to AJK Site Development Inc., Waddington, N.Y., for \$61,374 for the fabrication and installation of the 12-foot by 32-foot, pre-cast boat launch ramp at the Marine Base. This project was completed in FY 2022.



The new GLS Marine Base boat launch ramp.

8) LOCKS EQUIPMENT – UPGRADE OF DEWATERING PUMPS AT BOTH LOCKS

General Description: This project is for repairing/replacing several smaller pumps used for dewatering both Eisenhower and Snell Locks during maintenance of their underwater components. These pumps are almost 60 years old and parts for these units are no longer available. In recent years, the GLS began the replacement and/or repair of these pumps.

FY 2022 Obligations: \$244,207

Total Obligations (FYs 2009-2022): \$770,688

Project Update (as of September 30, 2022): In FY 2022, the GLS awarded a contract to Dow Electric, Inc., Malone, N.Y., for \$215,000 related to the removal of old/worn pumps, cleanout, and installation of new dewatering pumps at both locks.

9) LOCK EQUIPMENT – REPAIR/REPLACEMENT OF PIPING AND VALVES AT BOTH LOCKS

General Description: This is a multi-year maintenance project to repair and/or replace air and water piping, fittings, valves, and monitoring equipment at the Eisenhower and Snell Locks. The lock facilities have extensive air and water distribution systems that are continuously subject to corrosion damage. Repairs are needed to clean and paint or replace deteriorated piping and appurtenances to maintain these critical utilities.

FY 2022 Obligations: \$45,702

Total Obligations (FYs 2009-2022): \$200,067

Project Update (as of September 30, 2022): The GLS awarded four contracts totaling \$23,055 for parts and supplies to replace compressed air lines in the cable galleries at both locks. The GLS is replacing the original carbon steel piping with reinforced polypropylene piping for improved operability, durability, and suitability to the damp environment. GLS work crews completed installation of 300 feet of the new piping at both locks in FY 2022 and will continue installing the FY 2022 purchased piping in FY 2023.

10) LOCK EQUIPMENT – REHABILITATE HANDS-FREE MOORING SYSTEM UNITS

General Description: In June 2019, Hands Free Mooring (HFM) technology became fully operational at GLS's St. Lawrence Seaway locks in Massena, N.Y., with the commissioning of HFM technology at Snell Lock. The Seaway's HFM project was the first use of this technology for an inland waterway to move commercial vessels through a lock system in the United States. The new technology allows commercial ships to transit safely and more efficiently without the use of mooring lines while also enhancing workplace safety and improving operational efficiency. Each year moving forward, the GLS will remove one of the six operating units used at the two locks and replace various parts including seals, hydraulic cylinders, bushings, and bearings. A fully operational spare unit will be used in place of the unit pulled for maintenance.

FY 2022 Obligations: \$34,328

Total Obligations (FYs 2009-2022): \$34,328

Project Update (as of September 30, 2022): The GLS continued its HFM maintenance program in FY 2022 with four contracts totaling \$34,328 for parts, equipment, and supplies to proactively repair and replace worn parts and repaint one of the GLS's six operating HFM units. GLS crews are completing the inspection and rebuild work.

11) UTILITIES – UPGRADE OF POWER SUPPLY INFRASTRUCTURE FROM MOSES-SAUNDERS DAM TO BOTH LOCKS AND ADJACENT FACILITIES

General Description: This project is for upgrading the infrastructure that supplies power to the Eisenhower and Snell Locks and to the Corporation's Maintenance Facility. The power is provided directly from the Moses-Saunders Power Dam over infrastructure that is 60 years old.

FY 2022 Obligations: \$62,652

Total Obligations (FYs 2009-2022): \$728,867

Project Update (as of September 30, 2022): In FY 2022, the New York Power Authority (NYPA) continued its ongoing rehabilitation of the infrastructure that supplies power to the GLS for operations and maintenance activities. This is a recurring annual SIP project with expenditures dependent on NYPA plans. In FY 2022, the GLS paid \$62,652 to NYPA, White Plains, N.Y., for its work on GLS power-related infrastructure rehabilitation, which included work to make upgrades on the transmission lines connected to GLS facilities, including Snug Harbor, a small embayment of the Grasse River, and the north side of Eisenhower Lock.

12) UTILITIES – UPGRADE OF ELECTRICAL DISTRIBUTION EQUIPMENT

General Description: This project is for upgrading electrical distribution equipment at both Eisenhower and Snell Locks and at the Maintenance Facility to ensure continued reliability. Much of this equipment is 60 years old.

FY 2022 Obligations: \$663,165

Total Obligations (FYs 2009-2022): \$3,643,676

Project Update (as of September 30, 2022): In FY 2022, the GLS awarded a contract modification to Collins Hammond Electrical Contractors, Inc., Ogdensburg, N.Y., totaling \$326,993 for the completion of the shore power upgrades and Snug Harbor electrical upgrades started in FY 2021.

Additionally, the GLS awarded a contract to Dow Electric, Inc., Malone, N.Y., for \$192,000 to complete repairs and upgrades related to a broken power line feed at Eisenhower Lock.

The GLS also awarded a contract of \$38,351 to CDG Engineers, Inc., St. Louis, Mo., related to the completion of an arc flash study for additional electrical shore power feeds at Snug Harbor for GLS vessels.

13) BUILDINGS AND GROUNDS – REPLACEMENT OF SEAWAY VISITOR CENTER AT EISENHOWER LOCK



Construction of the new Seaway Visitor Center at Eisenhower Lock. Work is expected to be completed in late 2023.

General Description: In FY 2019, the U.S. Department of Transportation announced that a new Seaway Visitor Center at Eisenhower Lock in Massena, N.Y., would be constructed to replace the original center built in the early 1960s. The old center, with only observation decks open, attracted more than 60,000 people each year and was an important attraction for Upstate New York tourism. The new facility will build upon those successes and address many of the shortcomings of the old center, including energy efficiency and accessibility for people with disabilities.

FY 2022 Obligations: \$8,981,152

Total Obligations (FYs 2009-2022): \$10,494,288

Project Update (as of September 30, 2022): In FY 2022, the GLS awarded a contract for \$8.4 million to Con Tech Building Systems, Inc., Gouverneur, N.Y., for the construction of the new 7,500-square-foot Seaway Visitor Center at Eisenhower Lock, which will include memorabilia, exhibitions, and informational displays. It will also feature two observation decks where visitors can watch commercial vessels as they transit the lock that raises and lowers ships more than 40 feet. Work began in FY 2023 and is expected to be completed in December 2023. On September 29, 2022, U.S. Transportation Secretary Pete Buttigieg and Deputy Secretary Polly Trottenberg presided over a formal groundbreaking ceremony for the new Seaway Visitor Center in Massena that included U.S., Canadian, and First Nations dignitaries.

Additionally, the GLS awarded a contract to Bergmann Associates, Rochester, N.Y., for \$467,788 to serve as the third-party inspection and quality control firm for the construction project. Finally, the GLS awarded a contract to Aubertine and Currier Architects, Engineers, and Land Surveyors, Watertown, N.Y., for \$64,286 to perform construction administration support.

14) BUILDINGS AND GROUNDS – REHABILITATION/REPLACEMENT OF MASSENA, N.Y. FACILITIES

General Description: This is a multi-year project to replace and rehabilitate GLS buildings and structures in Massena, N.Y., that need modernization. As a Federal Government Corporation, the GLS owns and is responsible for 34 operational, administrative, maintenance, and storage buildings. Many of these buildings include workspace for GLS employees. Nearly every GLS building in Massena was built during the Seaway’s construction in the 1950s and needs some modernization.

FY 2022 Obligations: \$44,673

Total Obligations (FYs 2009-2022): \$458,336

Project Update (as of September 30, 2022): The GLS awarded two contracts totaling \$12,109 for parts and supplies to paint one GLS-owned Quonset hut located at the Maintenance Base. GLS crews will complete this work in FY 2023. Additionally, GLS contractors completed installation work in FY 2023 related to touchless fixtures at GLS restrooms (contract obligation in FY 2022).

15) DREDGING, NAVIGATION AIDS, AND FLOATING PLANT – REPLACEMENT OF FLOATING NAVIGATION AIDS / UPGRADE TO ALL-SEASON BUOYS

General Description: This is an ongoing program to replace floating navigational aids/buoys and winter markers that have been damaged over the years and to upgrade the lights on the buoys. This project also includes testing all-season buoys to determine if they will be effective for use in the Seaway. The GLS is responsible for 101 buoys (with one light per unit) and 59 winter markers along a 120-mile portion of the Seaway.

FY 2022 Obligations: \$437,044

Total Obligations (FYs 2009-2022): \$1,058,623

Project Update (as of September 30, 2022): In FY 2022, the GLS awarded a contract to the U.S. Coast Guard, Chesapeake, Va., for \$218,374 to purchase 12 steel all-season buoys. Additionally, the GLS awarded a contract to Go Deep International, Inc., St. John, New Brunswick, for \$180,300 to purchase six foam all-season buoys. Finally, the GLS awarded two contracts for supplies and materials needed to fabricate cement sinkers for the new buoys. Each all-season buoy will not have to be lifted out of the water except when it is found off-station or for a mooring inspection. This reduces the number of conventional buoys to be commissioned and decommissioned, thus saving the GLS time and money.

16) DREDGING, NAVIGATION AIDS, AND FLOATING PLANT – UPGRADE/REPLACEMENT OF FLOATING PLANT/TUGS

General Description: This project is for rehabilitating and/or replacing the Corporation’s floating plant that is used for maintaining the locks and navigation channels. This multi-year project includes: replacing the GLS’s tugboats *ROBINSON BAY* and *PERFORMANCE*; upgrading the buoy tender barge; purchasing a boat to be used for hydrographic surveying with upgraded surveying equipment; purchasing a small boat for emergency response; purchasing small boats for navigation aid maintenance; purchasing a spud barge for work on navigational aids and for emergency/spot dredging; and rehabilitating the GLS’s crane barge/ gatelifter *GRASSE RIVER*, which would be utilized if a lock miter gate were damaged and had to be replaced.



Construction of the GLS’s 60-foot SEAWAY TRIDENT tugboat at the Washburn & Doughty Shipyard in East Boothbay, Maine.

FY 2022 Obligations: \$2,617,459

Total Obligations (FYs 2009-2022): \$41,694,566

Project Update (as of September 30, 2022): In FY 2022, the GLS awarded several contracts and contract modifications related to its floating plant, including routine drydocking work and upgrades to the GLS’s buoy barge to conform to the *SEAWAY GUARDIAN* tugboat, ongoing construction of the GLS’s second tugboat *SEAWAY TRIDENT*, and heating, ventilation, and air conditioning (HVAC) repairs on the *SEAWAY GUARDIAN*.

The GLS awarded a contract to Heddle Marine Service, Inc., Hamilton, Ontario, for \$1.9 million to complete routine maintenance drydocking, hull and machinery life extension, and structural upgrades to the Corporation’s buoy barge for operability with the *SEAWAY GUARDIAN* tugboat. Contracts were also awarded to WSP USA, Inc., Buffalo, N.Y., for \$34,200 to perform inspection and oversight services, and Robert Allan, Ltd., Vancouver, British Columbia, for \$31,813 to complete vessel design work for the buoy barge upgrades. The drydocking and upgrade work were completed in early FY 2023 and the tug barge was received in Massena before the end of the 2022 navigation season.

The GLS awarded contract modifications to Washburn & Doughty Associates, Inc., East Boothbay, Maine, totaling \$180,642 to complete the construction of the ice-class, 60-foot tugboat *SEAWAY TRIDENT*. This tugboat will carry out a variety of construction and maintenance duties for the U.S. portion of the St. Lawrence Seaway, including routine maintenance of lock structures, maintenance and positioning of aids to navigation, ice management, and removal of accumulated ice from lock walls. Additionally, the GLS awarded a contract to Glostén, Inc., Seattle, Wash., for \$171,652 for inspection and oversight services of the *SEAWAY TRIDENT* construction. The tug is scheduled for delivery in the spring of 2023.

Finally, the GLS awarded two contracts related to *SEAWAY GUARDIAN* operations. The first contract was for \$144,860 to All Terrain Water Corp., Costa Mesa, Calif., to procure environmentally friendly firefighting foam to be used by GLS marine crews in the event of a third-party vessel and/or facility fire on the St. Lawrence River. The second contract was to Goodrich Refrigeration, Inc., North Lawrence, N.Y., for \$132,990 for the repairs and replacement of HVAC components that had become inoperable on the *GUARDIAN*.

17) DREDGING, NAVIGATION AIDS, AND FLOATING PLANT – DREDGING OF U.S. SECTORS TO MAINTAIN DESIGN GRADE AND DISPOSE OF SEDIMENTS

General Description: This project is for dredging the U.S. Seaway navigation channel to remove sediment and to maintain the design grade for the channel bottom. Maintenance dredging areas include the intermediate pool (between Eisenhower and Snell Locks), the international tangent section to the east of Snell Lock, and several other sections of U.S. waters west of Eisenhower Lock.

FY 2022 Obligations: \$1,251,094

Total Obligations (FYs 2009-2022): \$12,416,972

Project Update (as of September 30, 2022): The GLS made an equitable adjustment payment to Luedke Engineering Co., Frankfort, Mich., for \$1.25 million related to the firm's maintenance dredging work completed in FY 2021 in the intermediate pool near the GLS Marine Base and alongside the assembly towers on the lower end of Eisenhower Lock.

18) IT AND COMMUNICATIONS – UPGRADE OF SEAWAY VESSEL TRAFFIC MANAGEMENT SYSTEM

General Description: This project is to expand use of the Seaway's Global Positioning System (GPS)/ Automatic Identification System (AIS) navigation technologies, which are incorporated into the Seaway's binational Traffic Management System (TMS). Future upgrades will further improve the safety for vessels transiting the Seaway and improved time management efficiencies for Great Lakes Seaway System commercial users and stakeholders.

FY 2022 Obligations: \$426,483

Total Obligations (FYs 2009-2022): \$1,055,176

Project Update (as of September 30, 2022): In FY 2022, the GLS completed an interagency agreement and obligated \$400,000 to the Volpe National Transportation Systems Center, Cambridge, Mass., to continue work started in FY 2019 to develop and design the Seaway's Voyage Information System (VIS). VIS will serve as the next generation of vessel traffic control and will greatly enhance the safety and efficiency of maritime navigation in the St. Lawrence Seaway and ultimately the Great Lakes.

In 2017, the GLS and Canadian St. Lawrence Seaway Management Corporation (SLSMC) worked with the Volpe Center and the Federal Highway Administration's Intelligent Transportation Systems Joint Program Office to study the idea of enhancing the Seaway's binational Traffic Management System by utilizing a computer-based application to improve accuracy of estimated times of arrival (ETAs) for vessels and enhance system efficiency and situational awareness. These efforts were foundational to development of the VIS.

The U.S. and Canadian Seaway corporations intend to pursue additional phases for the VIS project, resulting in, at a minimum, a new system to improve the safety and efficiency of Seaway vessel traffic management, including transits and lockages. The system could be further enhanced to incorporate port, carrier, and pilot data to better inform and improve efficiencies in extended Seaway stakeholder groups.

19) IT AND COMMUNICATIONS – UPGRADE OF NETWORKS AND IT SECURITY

General Description: This project enhances and improves the GLS's IT network infrastructure and security in Massena, N.Y. The growth of more technology-based improvements is resulting in an increased need to expand and refine the GLS's network environment, including cybersecurity preparedness. The GLS is working closely with DOT's Office of the Chief Information Officer (OCIO) to coordinate and make these improvements.

FY 2022 Obligations: \$36,269

Total Obligations (FYs 2009-2022): \$863,388

Project Update (as of September 30, 2022): The GLS continues to make systematic improvements to its IT network environment in Massena, N.Y. In FY 2022, the GLS awarded a contract to American Wordata, Inc., Tampa, Fla., for \$33,541 for file server upgrades in Massena. The server upgrades were coordinated with DOT's OCIO officials to ensure conformity with Federal and Departmental IT security and networking configurations.

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GLS Seaway Infrastructure Program (SIP) Obligations (FYs 2009-2022)

Infrastructure Category	SIP Project Description	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Locks and Associated Structures	Upgrade of Pendering on Approach Walls at Both Locks	\$245,494	\$34,930	\$0	\$0	\$1	\$188,725	\$140
Locks and Associated Structures	Rehabilitation of Downstream Miter Gates at Both Locks	\$0	\$0	\$3,548,985	\$17,543	\$3,033,061	\$223,730	\$0
Locks and Associated Structures	Rehabilitation of Mooring Buttons, Pins, and Concrete Along Guidewalls and Guardwalls at Both Locks	\$952,015	\$51,501	\$0	\$395	\$0	\$0	\$0
Locks and Associated Structures	Rehabilitation of Culvert Valve Machinery Hydraulics at Both Locks	\$4,135,197	\$441,130	\$4,010,108	\$609,971	\$262,687	\$4,602	\$0
Locks and Associated Structures	Rehabilitation of Water Maintenance Lock Covers at Both Locks	\$66,362	\$19,470	\$77,446	\$69,300	\$68,471	\$88,636	\$12,127
Locks and Associated Structures	Replacement of Culvert Valves with Single Skin Valves at Both Locks	\$2,155	\$331,356	\$1,111,059	\$306,838	\$8,745	\$1,383,149	\$177,157
Locks and Associated Structures	Structural Repairs to Grout Leaks in Galleries and Recesses at Both Locks	\$38,799	\$0	\$0	\$2,812	\$1	\$0	\$0
Locks and Associated Structures	Rehabilitation of Concrete at Spill Lock	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locks and Associated Structures	Rehabilitation of Concrete at Eisenhower Lock	\$2,207,523	\$2,497,234	\$391,013	\$47,113	\$521	\$0	\$0
Locks and Associated Structures	Rehabilitation of Upstream Miter Gates at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locks and Associated Structures	Rehabilitation of Diffusers at Eisenhower Lock	\$0	\$0	\$0	\$9,940	\$2,906,115	\$3,758,337	\$8,372
Locks and Associated Structures	Rehabilitation of Diffusers at Small Lock	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locks and Associated Structures	Installation of Lock Wall Guardrail at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$593,802
Locks and Associated Structures	Replacement of Recess Covers at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locks and Associated Structures	Upgrade of Lighting at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locks and Associated Structures	Installation of Marine Base Boat Launch Ramp	\$22,123	\$28,924	\$23,393	\$2,792	\$33	\$0	\$4,381
Lock Equipment	Upgrade/Replacement of Compressed Air Systems at Both Locks	\$0	\$463	\$0	\$563	\$3,975	\$503,659	\$8,834
Lock Equipment	Installation of Vessel Self Spooling Equipment at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lock Equipment	Installation of Handic-Free Mooring System at Both Locks	\$1,438	\$496,528	\$134,194	\$311,286	\$3	\$705,140	\$10,795,599
Lock Equipment	Replacement of Vertical Lift Gate Wire Ropes at Eisenhower Lock	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lock Equipment	Upgrade of Ice Flushing System at Eisenhower Lock	\$0	\$0	\$0	\$542	\$15,331	\$314,642	\$743
Lock Equipment	Improvements to Ice Control at Both Locks	\$0	\$13,518	\$0	\$0	\$0	\$0	\$28
Lock Equipment	Upgrade of Dewatering Pumps at Both Locks	\$0	\$0	\$0	\$196,196	\$46,843	\$33,985	\$21,739
Lock Equipment	Installation of Ice Flushing System at Small Lock	\$0	\$1,453	\$382,027	\$1,546,762	\$1,600,795	\$139,238	\$162,233
Lock Equipment	Upgrade of Miter Gate Machinery at Both Locks	\$0	\$0	\$133,901	\$7,754	\$3,785,656	\$1,644,855	\$0
Lock Equipment	Upgrade of Ship Arristor Machinery at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lock Equipment	Rehabilitation of Shipley Derricks at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lock Equipment	Rehabilitation of Access to and Machinery in Crossways and Recesses at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lock Equipment	Repair/Replacement of Piping and Valves at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lock Equipment	Rehabilitate Handic-Free Mooring System Units	\$19,594	\$232,079	\$97,979	\$28,003	\$17,099	\$38,320	\$0
Utilities	Upgrade of Power Supply Infrastructure from Moses Saunders Dam to Both Locks and Adjacent Facilities	\$0	\$782,793	\$379,980	\$55,253	\$2,687	\$720	\$7,384
Utilities	Upgrade/Replacement of Emergency Generators	\$0	\$0	\$0	\$1,784,283	\$380,327	\$63,406	\$0
Utilities	Improvements to Facility and Underground Utilities	\$0	\$0	\$0	\$0	\$0	\$0	\$0
O&M Equipment and Work Vehicles	Replacement of Heavy and Light Equipment and Vehicles	\$1,577,143	\$488,592	\$12,469	\$81,623	\$137,393	\$227,151	\$141,124
Buildings and Grounds	Replacement of Rocks at Facilities	\$146,481	\$494	\$9,740	\$96,894	\$45,243	\$0	\$285,581
Buildings and Grounds	Replacement of Paving and Drainage Infrastructure	\$0	\$1,839,051	\$115,588	\$0	\$3,622	\$0	\$0
Buildings and Grounds	Rehabilitation of Eisenhower Lock Highway Tunnel	\$32,184	\$284,465	\$102,348	\$9,020	\$953	\$1,164,656	\$61,275
Buildings and Grounds	Upgrade/Replacement of Fire Alarm/Protection Systems	\$25,409	\$624	\$31,298	\$0	\$0	\$0	\$0
Buildings and Grounds	Upgrade of Storage for Lock Spare Parts and Equipment	\$0	\$421,778	\$29,188	\$143	\$1,046,641	\$32,475	\$2,751
Buildings and Grounds	Replace of Windows and Doors and Renear Building Facades	\$0	\$35,655	\$8,725	\$18,422	\$4,705	\$0	\$2,655
Buildings and Grounds	Rehabilitation of Spare Gate Storage and Assembly Area at Sang Harbor	\$0	\$15,661	\$51,644	\$16,692	\$2,115,325	\$94,340	\$4,295
Buildings and Grounds	Upgrade of Physical Security to Meet HSPD-12 Requirements	\$4,988,696	\$26,656	\$22,775	\$365,896	\$41,973	\$24,352	\$4,005
Buildings and Grounds	Replacement of Elevator at Administration Building	\$0	\$0	\$14,318	\$0	\$309,093	\$815,730	\$9,479
Buildings and Grounds	Replacement of Fuel Tanks at Maintenance Facility	\$0	\$0	\$192,277	\$15,625	\$0	\$0	\$0
Buildings and Grounds	Upgrade of Security Fencing	\$0	\$0	\$18,489	\$0	\$0	\$0	\$0
Buildings and Grounds	Upgrades to Facilities to Meet Sustainability and Energy Goals	\$0	\$0	\$72,311	\$82,641	\$39,975	\$28,678	\$37,414
Buildings and Grounds	Upgrade of Lock Structures Maintenance Building	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Buildings and Grounds	Rehabilitation/Replacement of Massena, N.Y. Facilities	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Buildings and Grounds	Replacement of Floating Navigational Aids / Upgrade to All-Season Buoys	\$61,254	\$54,576	\$0	\$0	\$32,273	\$68,149	\$126,064
Buildings and Grounds	Rehabilitation of Fixed Navigational Aids	\$66	\$29,173	\$18,454	\$33,397	\$14,199	\$14,199	\$26,638
Buildings and Grounds	Upgrade/Replacement of Floating Plant/Flags	\$763,900	\$1,636,737	\$1,992,992	\$2,189,954	\$993,713	\$609,459	\$18,000
Buildings and Grounds	Maintenance Dredging of U.S. Sectors to Maintain Design Grade and Dispose of Sediments	\$4,988,696	\$13,359	\$3,675,679	\$118,885	\$4,935	\$465	\$21,771
Seaway International Bridge	Rehabilitation of South Channel Span Structure and Corrosion Prevention	\$3,164,251	\$5,680,775	\$0	\$0	\$0	\$0	\$0
IT and Communications	Upgrade of Seaway Vessel Traffic Management System	\$106,167	\$83,232	(\$1,700)	\$10,000	\$6,353	\$0	\$0
IT and Communications	Upgrade of Lock Controls	\$31,207	\$162,661	\$114,248	\$134,044	\$202,941	\$157,659	\$73,819
IT and Communications	Upgrade of Networks and IT Security	\$0	\$2,251	\$3,576	\$0	\$0	\$0	\$0
IT and Communications	Upgrade of Communications Systems	\$0	\$0	\$170,633	\$19,478	\$8,687	\$0	\$0
IT and Communications	Upgrade/Replacement of Operational CCTV's	\$0	\$0	\$0	\$0	\$0	\$163	\$35,847
IT and Communications	Upgrade of Massena-Based Telephone System	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IT and Communications	Miscellaneous Expenses (non project-specific expenses and administrative PC&B costs)	\$113,774	\$153,370	\$160,384	\$119,656	\$97,762	\$119,438	\$70,138
	ARP -- TOTAL OBLIGATIONS	\$17,951,311	\$16,874,755	\$16,510,519	\$16,510,519	\$14,917,345	\$14,908,222	\$15,570,580
	Other Than Personnel SIP Costs (contracts, inventory, equipment, supplies)	\$17,587,027	\$16,339,760	\$15,783,117	\$15,838,805	\$14,242,887	\$14,189,526	\$14,912,827
	GLS SIP Project-Specific Personnel Compensation and Benefits (PC&B)	\$364,284	\$534,975	\$787,998	\$674,714	\$674,458	\$716,696	\$658,022
	Miscellaneous SIP Costs (non project-specific expenses and administrative PC&B costs)	\$113,774	\$153,370	\$160,384	\$119,656	\$97,762	\$119,438	\$70,138

GLS Seaway Infrastructure Program (SIP) Obligations (FYs 2009-2022)

Infrastructure Category	SIP Project Description	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	14-YEAR TOTAL
Locks and Associated Structures	Upgrade of Fencing on Approach Walls at Both Locks	\$0	\$0	\$0	\$190,238	\$162,246	\$9,865	\$24,344	\$1,096,502
Locks and Associated Structures	Rehabilitation of Downstream Miter Gates at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,373,318
Locks and Associated Structures	Rehabilitation of Mooring Buttons, Ties, and Concrete A-Long Chockdowls and Chockdowls at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,003,211
Locks and Associated Structures	Rehabilitation of Culvert Valve Machinery Hydraulics at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,461,115
Locks and Associated Structures	Rehabilitation of Witter Maintenance Locks at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,881
Locks and Associated Structures	Replacement of Culvert Valves with Single Stem Valves at Both Locks	\$41,637	\$2,382	\$0	\$26,716	\$50,659	\$9,348	\$0	\$2,706,368
Locks and Associated Structures	Structural Repairs to Joint Leaks in Galleries and Recesses at Both Locks	\$0	\$0	\$0	\$169,116	\$244,755	\$312	\$0	\$530,934
Locks and Associated Structures	Rehabilitation of Concrete at Spill Lock	\$0	\$0	\$0	\$357,500	\$724,220	\$605,245	\$81,185	\$1,695,150
Locks and Associated Structures	Rehabilitation of Concrete at Eisenhower Lock	\$0	\$17,884	\$40,926	\$309,217	\$491,478	\$471,360	\$3,177,402	\$6,905,916
Locks and Associated Structures	Rehabilitation of Upstream Miter Gates at Both Locks	\$0	\$0	\$0	\$0	\$71,665	\$6,279,687	\$153,498	\$6,304,850
Locks and Associated Structures	Structural Rehabilitation of Miter Gates at Eisenhower Lock	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,682,765
Locks and Associated Structures	Rehabilitation of Diffusers at Both Locks	\$13,630	\$0	\$0	\$192,617	\$16,141	\$0	\$21,524	\$77,635
Locks and Associated Structures	Installation of Lock Wall Guards at Both Locks	\$33,375	\$35,489	\$70,423	\$255,232	\$317,682	\$53,757	\$17,511	\$962,192
Locks and Associated Structures	Upgrade of Lighting at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$164,338
Locks and Associated Structures	Installation of Marine Base Foot Launch Ramp	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$61,374
Lock Equipment	Upgrade/Replacement of Compressed Air Systems at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$83,666
Lock Equipment	Installation of Vessel Self-Sparging Equipment at Both Locks	\$63,175	\$6,639	\$4,301	\$0	\$0	\$0	\$0	\$465,661
Lock Equipment	Installation of Handicapped-Free Mowing System at Both Locks	\$1,703,212	\$2,005,661	\$2,069,631	\$1,142,835	\$650,911	(\$4,949)	\$0	\$25,286,041
Lock Equipment	Replacement of Vertical Lift Gate Wire Ropes at Eisenhower Lock	\$0	\$0	\$0	\$0	\$14,448	\$1,600	\$0	\$949,466
Lock Equipment	Upgrade of Ice Pushing System at Eisenhower Lock	\$0	\$0	\$0	\$7,032	\$14,448	\$1,600	\$0	\$23,130
Lock Equipment	Improvements to Ice Control at Both Locks	\$0	\$0	\$0	\$0	\$90,361	\$0	\$0	\$42,775
Lock Equipment	Upgrade of Drainage Infrastructure in Galleries and Recesses at Both Locks	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,545
Lock Equipment	Installation of Ice Control at Both Locks	\$0	\$0	\$0	\$153,295	\$53,166	\$21,299	\$244,207	\$770,688
Lock Equipment	Installation of Ice Flushing System at Spill Lock	\$11,096	\$3,173	\$1,370	\$461,764	\$2,282,764	\$94,173	\$51,295	\$16,870,045
Lock Equipment	Upgrade of Miter Gate Machinery at Both Locks	\$75,166	(\$270)	\$0	\$0	\$0	\$0	\$0	\$5,653,318
Lock Equipment	Upgrade of Ship Avenger Machinery at Both Locks	\$0	\$0	\$0	\$14,014	\$13,676	\$2,987	\$0	\$1,443,667
Lock Equipment	Rehabilitation of Shifter Drives at Both Locks	\$0	\$0	\$0	\$121,736	\$399,566	\$7,381	\$0	\$1,038,763
Lock Equipment	Rehabilitation of Access to and Machinery in Crossways and Recesses at Both Locks	\$15,560	\$0	\$0	\$0	\$0	\$0	\$0	\$40,045
Lock Equipment	Repair/Replacement of Hying and Valves at Both Locks	\$0	\$0	\$0	\$14,240	\$125	\$0	\$0	\$45,702
Lock Equipment	Rehabilitate Handicapped-Free Mowing System Unit	\$0	\$0	\$0	\$4,230	\$0	\$0	\$0	\$20,007
Utilities	Upgrade of Power Supply Infrastructure from Moses-Baunders Dam to Both Locks and Adjacent Facilities	\$1,442	\$7,572	\$23,200	\$147,200	\$20,000	\$33,007	\$62,552	\$728,387
Utilities	Upgrade of Electrical Distribution Equipment	\$0	\$0	\$73,000	\$163,297	\$1,198,753	\$3,409	\$63,105	\$3,643,676
Utilities	Upgrade/Replacement of Emergency Generators	\$1,324	\$0	\$0	\$0	\$0	\$0	\$0	\$2,229,347
Utilities	Improvements to Facility and Underground Utilities	\$0	\$0	\$51,076	\$0	\$4,555	\$0	\$0	\$55,661
Buildings and Grounds	Replacement of Heavy and Light Equipment and Vehicles	\$15,436	\$17,062	\$156,648	\$1,011,310	\$1,040,321	\$8,409	\$161,51	\$5,143,982
Buildings and Grounds	Replacement of Scaffolding at Facilities	\$34,852	(\$142)	\$0	\$0	\$0	\$0	\$0	\$619,140
Buildings and Grounds	Replacement of Storm and Drainage Infrastructure	\$0	\$0	\$550,000	\$1,487,603	\$75,766	\$39,419	\$150	\$3,361,139
Buildings and Grounds	Rehabilitation of Eisenhower Lock Highway Tunnel	\$33,955	\$0	\$0	\$34,013	\$82	\$53,180	\$0	\$1,771,176
Buildings and Grounds	Upgrade/Replacement of Fire Alarm/Protector or Systems	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$57,332
Buildings and Grounds	Upgrade of Storage for Lock Spare Parts and Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$131,925
Buildings and Grounds	Replace Windows and Doors and Repair Sliding Panels	\$0	\$0	\$0	\$41,176	\$17,264	\$0	\$0	\$80,051
Buildings and Grounds	Rehabilitation of Spare Parts Storage and Assembly Area at Ship Harbor	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,595,958
Buildings and Grounds	Upgrade of Physical Security to Meet HSPD-13 Requirements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$486,225
Buildings and Grounds	Replacement of Seaway Visitor Center at Eisenhower Lock	\$2,183	(\$768)	\$0	\$129	\$36,269	\$3,911,152	\$0	\$10,494,268
Buildings and Grounds	Replacement of Fuel Tanks at Maintenance Facility	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$145,381
Buildings and Grounds	Upgrade of Security Fencing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,489
Buildings and Grounds	Upgrades to Facilities to Meet Sustainability and Energy Goals	\$12,348	(\$271)	\$0	\$0	\$14,416	\$0	\$0	\$74,513
Buildings and Grounds	Upgrade of Lock Structures Maintenance Building	\$0	\$0	\$0	\$0	\$14,915	\$297	\$0	\$15,212
Buildings and Grounds	Rehabilitation/Replacement of Masonry, H.V. Facilities	\$0	\$0	\$0	\$0	\$77,143	\$16,520	\$44,570	\$458,336
Dredging, Navigation Aids, and Floating Plant	Replacement of Floatar Navigation Aids Upgrade to All-Season Buys	\$1,969	\$2,193	\$190,544	\$20,956	\$26,466	\$17,090	\$477,044	\$1,058,623
Dredging, Navigation Aids, and Floating Plant	Rehabilitation of Float Navigation Aids	\$5,321	(\$43)	\$4,188	\$157,700	\$55	\$2	\$0	\$16,006
Dredging, Navigation Aids, and Floating Plant	Upgrade/Replacement of Floating Plant Bags	\$3,225,565	\$9,826,916	\$4,000,229	\$41,719	\$6,132,251	\$444,870	\$2,017,459	\$41,694,586
Dredging, Navigation Aids, and Floating Plant	Maintenance Dredging of J.S. Sectors to Maintain Design Grade and Dispose of Sediments	\$995	\$0	\$0,366	\$9,537	\$3,906,016	\$96,472	\$1,211,194	\$2,410,972
Seaway Infrastructure Bridge	Upgrade of Seaway Vessel Traffic Management System	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,795,106
IT and Communications	Upgrade of Lock Controls	\$141,368	\$66,326	\$0	\$11,242	\$38,142	\$0	\$2,455	\$1,240,010
IT and Communications	Upgrade of Financial Management System	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,827
IT and Communications	Upgrade of Networks and IT Security	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$62,388
IT and Communications	Upgrade of Communications Systems	\$41,561	\$36,453	\$0	\$5,394	\$30,967	\$248,709	\$14,891	\$412,565
IT and Communications	Upgrade/Replacement of Operations, CCTV's	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,516
IT and Communications	Upgrade of Marine Base Broadband Telephone System	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,172
IT and Communications	Miscellaneous Expenses (non project-specific expenses and administrative PC&B costs)	\$28,908	\$655	\$0	\$3,833	\$0	\$0	\$0	\$683,338
ARP -- TOTAL OBLIGATIONS		\$11,939,239	\$19,129,017	\$5,108,622	\$5,945,316	\$15,699,535	\$10,945,788	\$18,834,406	\$29,023,580
Other Than Personal SIP Costs (contracts, inventory, equipment, supplies)		\$10,921,469	\$18,706,379	\$7,448,121	\$7,616,924	\$17,656,877	\$10,360,204	\$18,315,513	\$20,310,606
GLS SIP Project-Specific Personal Compensation and Benefits (PC&B)		\$477,770	\$422,638	\$360,501	\$1,001,336	\$1,012,661	\$585,584	\$428,887	\$6,743,974
Miscellaneous SIP Costs (non project-specific expenses and administrative PC&B costs)		\$23,908	\$855	\$0	\$33,833	\$0	\$0	\$0	\$683,138

**GLS Seaway Infrastructure Program (SIP)
FY 2024 Request and FY 2025-2028 Estimates**

INFRASTRUCTURE CATEGORY	PROJECT TITLE	FY 2024 REQUEST	FY 2025 ESTIMATE	FY 2026 ESTIMATE	FY 2027 ESTIMATE	FY 2028 ESTIMATE	FIVE-YEAR ESTIMATES
Locks and Associated Structures	Rehabilitation of Concrete at Eisenhower Lock	\$2,000,000	\$1,250,000	\$1,000,000	\$1,000,000	\$1,000,000	\$6,250,000
Locks and Associated Structures	Rehabilitation of Concrete at Snell Lock	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$5,000,000
Locks and Associated Structures	Rehabilitation of Mooring Bitts, Pins, and Concrete Along Guidewalls and Guardwalls at Both Locks	---	---	\$100,000	\$100,000	\$100,000	\$300,000
Locks and Associated Structures	Replacement of Recess Covers at Both Locks	---	\$50,000	\$50,000	\$50,000	\$50,000	\$200,000
Locks and Associated Structures	Rehabilitation of Stop Logs at Both Locks	---	\$1,000,000	\$250,000	\$500,000	\$500,000	\$2,250,000
Locks and Associated Structures	Upgrade of Fendering on Approach Walls and Miter Gates at Both Locks	---	\$200,000	\$200,000	\$100,000	\$100,000	\$600,000
Lock Equipment	Upgrade to Ship Arrestor Machinery at Both Locks	---	---	\$100,000	\$350,000	\$250,000	\$700,000
Lock Equipment	Upgrade of Miter Gate Machinery at Both Locks	---	---	\$500,000	\$1,000,000	\$1,000,000	\$2,500,000
Lock Equipment	Upgrade of Ice Flushing System at Eisenhower Lock	---	---	\$50,000	\$50,000	\$50,000	\$150,000
Lock Equipment	Rehabilitation of Culvert Valve Machinery Hydraulics at Both Locks	\$500,000	---	---	---	---	\$500,000
Lock Equipment	Upgrade/Replacement of Compressed Air Systems at Both Locks	\$500,000	---	\$300,000	\$200,000	---	\$1,000,000
Lock Equipment	Repair/Replacement of Piping and Valves at Both Locks	---	\$50,000	\$50,000	\$50,000	\$50,000	\$200,000
Lock Equipment	Rehabilitation of Access to and Machinery in Crossovers and Recesses at Both Locks	---	\$100,000	\$100,000	\$100,000	\$100,000	\$400,000
Lock Equipment	Rehabilitation of Hands-Free Mooring Equipment at Both Locks	\$250,000	\$150,000	\$150,000	\$150,000	\$150,000	\$850,000
Utilities	Upgrade of Electrical Distribution Equipment	\$1,500,000	\$1,500,000	\$500,000	\$200,000	\$200,000	\$3,900,000
Utilities	Upgrade/Replacement of Emergency Generators	---	---	\$500,000	\$500,000	\$250,000	\$1,250,000
Utilities	Upgrade of Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	---	\$150,000	\$150,000	\$150,000	\$150,000	\$600,000
Operation and Maintenance (O&M) Equipment and Work Vehicles	Replacement of Heavy and Light Equipment and Vehicles	\$800,000	\$1,500,000	\$1,000,000	\$1,000,000	\$500,000	\$4,800,000
Buildings and Grounds	Replacement of Paving and Drainage Infrastructure	\$1,500,000	\$1,500,000	\$1,500,000	\$400,000	\$600,000	\$5,500,000
Buildings and Grounds	Rehabilitation/Replacement of Massena, N.Y. Facilities	\$7,000,000	\$6,000,000	\$7,500,000	\$7,500,000	\$8,500,000	\$36,500,000
Buildings and Grounds	Rehabilitation of Eisenhower Lock Highway Tunnel	---	\$200,000	\$200,000	\$150,000	\$250,000	\$800,000
Buildings and Grounds	Upgrade/Replacement of Fire Alarm/Protection Systems	---	---	\$50,000	\$50,000	\$50,000	\$150,000
Buildings and Grounds	Upgrade of Storage for Lock Spare Parts and Equipment	---	---	---	\$500,000	\$250,000	\$750,000
Buildings and Grounds	Repair/Replacement of Security Fencing	---	\$150,000	\$150,000	\$150,000	\$150,000	\$600,000

GLS Seaway Infrastructure Program (SIP) FY 2024 Request and FY 2025-2028 Estimates

INFRASTRUCTURE CATEGORY	PROJECT TITLE	FY 2024 REQUEST	FY 2025 ESTIMATE	FY 2026 ESTIMATE	FY 2027 ESTIMATE	FY 2028 ESTIMATE	FIVE-YEAR ESTIMATES
Dredging, Navigation Aids, and Floating Plant	Upgrade of Floating Navigational Aids to All-Season Buoys	\$600,000	---	---	---	---	\$600,000
Seaway International Bridge	Capital Improvements at the South Channel Span	\$350,000	\$900,000	\$600,000	\$300,000	\$500,000	\$2,650,000
IT and Communications	Upgrade of Seaway Vessel Traffic Control System	\$300,000	\$400,000	\$400,000	\$500,000	\$400,000	\$2,000,000
IT and Communications	Upgrade of Lock Controls	---	\$300,000	\$100,000	\$100,000	\$100,000	\$600,000
IT and Communications	Upgrade of Networks and IT Security	---	---	\$100,000	\$100,000	\$100,000	\$300,000
IT and Communications	Upgrade of Communications Systems	---	---	\$100,000	\$200,000	\$200,000	\$500,000
	TOTAL	\$16,300,000	\$16,400,000	\$16,700,000	\$16,450,000	\$16,550,000	\$82,400,000

Note: Dollar amounts for SIP projects are, in most cases, "project feasibility" estimates that can vary by an industry-recognized 20-30 percent. Funding for each year of the SIP is constrained to annual funding targets as approved by the Secretary and OMB and subject to annual appropriations.