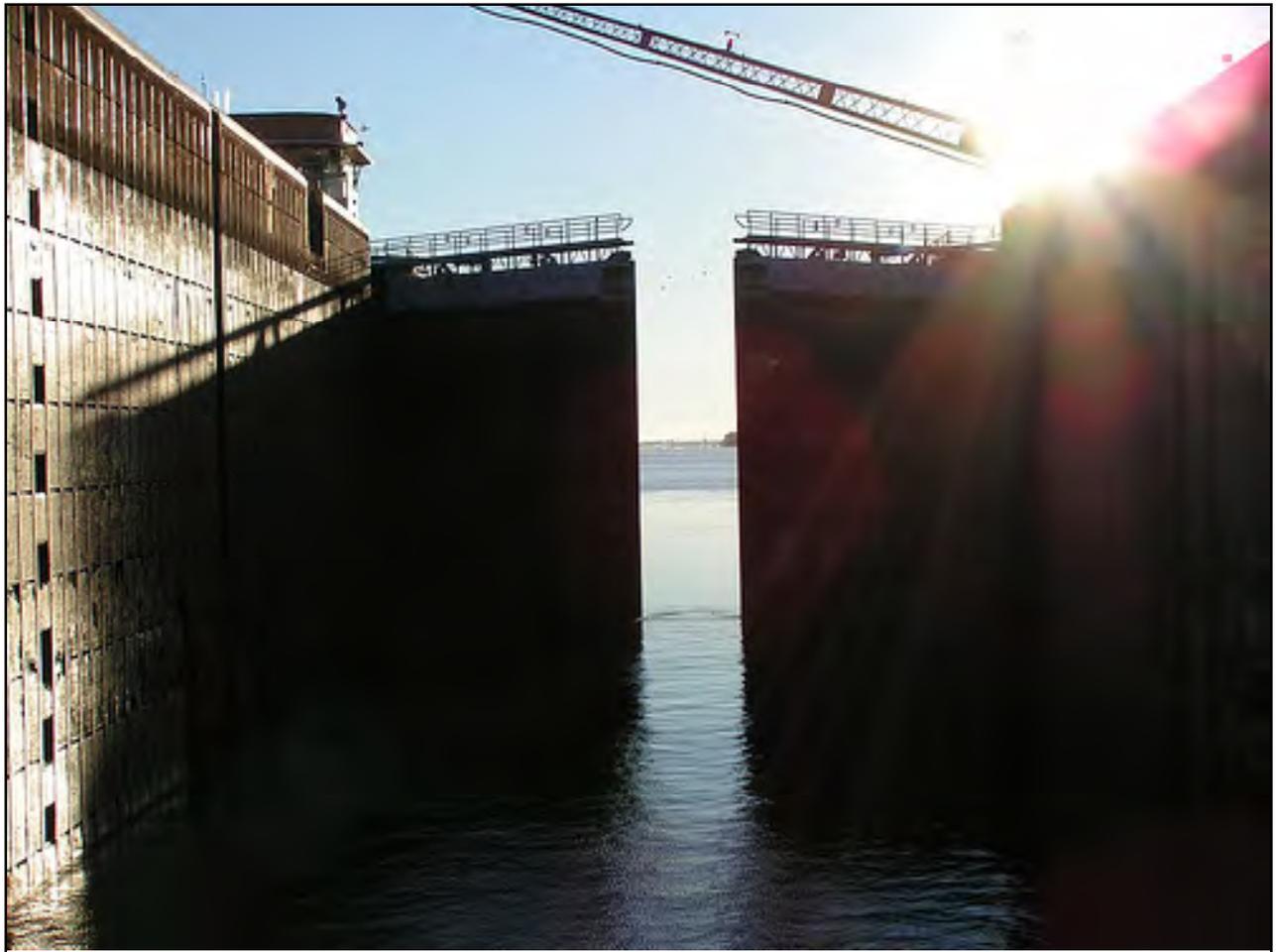




**Saint Lawrence Seaway Development Corporation**

# **Seaway Asset Renewal Program (ARP) Semiannual Report to Congress**



**March 31, 2010**

## **SUMMARY**

As directed in the Conference Statement of H.R. 1105 (Fiscal Year (FY) 2009 Omnibus Appropriations Act), Division I (Transportation, Housing and Urban Development, and Related Agencies), the Saint Lawrence Seaway Development Corporation (SLSDC) is providing a semiannual report to the House and Senate Appropriations Committees on the status of its Asset Renewal Program (ARP). Semiannual status reports will be sent to the two Committees over the life of the program. In addition, Committee staff will be updated throughout the year, as needed, on any significant changes to the plan's schedule, estimates, or execution.

The start of the ARP in 2009 represented the first time in the SLSDC's 50-year history that a comprehensive effort had been undertaken to reinvest and modernize the U.S. Seaway infrastructure, including rehabilitation of the U.S. Seaway locks, the Seaway International Bridge, and other Corporation facilities in Massena, N.Y. None of the ARP projects will result in increases to the authorized depth or width of the navigation channel or to the size of the lock facilities.

Without such significant reinvestment in these perpetual transportation assets, it would become increasingly difficult to maintain the future availability and reliability of the Seaway (currently at greater than 99 percent). An economic analysis concluded that the economic impact of a shutdown of either of the two U.S. locks would result in a loss to those dependent on this mode of transportation of \$1.3-\$2.3 million per day, depending on the length of the delay.

On December 16, 2009, President Obama signed the "Consolidated Appropriations Act, 2010" (P.L. 111-117), which included \$16.3 million in the SLSDC's annual appropriation for FY 2010 to fund more than 20 Year Two ARP projects. Some of the work either started or planned in FY 2010 is the continuation of ARP work started in FY 2009. In FY 2009, the SLSDC obligated \$17.6 million for 21 Year One projects.

Following the enactment of Year Two funding, SLSDC senior officials completed an adjusted internal ARP spending plan for FY 2010 by reallocating funding, and deferring and accelerating projects as needed to meet the program's objectives and the targeted spending amount. This on-going program "recalibration" is critical to the overall success of the ARP as it allows SLSDC officials to make necessary adjustments based on enacted funding, more accurate cost estimates, and current priorities. For example, the FY 2010 adjusted spending plan took into account that the actual contract costs for upgrading lock operating equipment obligated in FY 2009 were higher than the baseline estimates included in the Congressional Justification. These adjustments required the deferment of some lower priority ARP projects originally planned for FY 2010 to out years in order for the SLSDC to fund the lock-related work this year.

The SLSDC's ARP Internal Working Group continues to meet regularly to review the status of on-going projects and to collectively discuss ways to improve the overall management, execution, and reporting of the program. The SLSDC created the working group in 2008, made up of senior managers in engineering, procurement, financial management, budget, counsel, and policy, to review project plans and milestones, troubleshoot any concerns, and report progress to senior executives.

Over the first six months of FY 2010, the SLSDC also continued its cooperative efforts with the Government Accountability Office (GAO) during its review of the ARP and the SLSDC's methodology used to develop the plan's baseline estimates. A final report on GAO's findings and recommendations is expected in May 2010.

The SLSDC's multi-year ARP supports the engineering considerations highlighted in the *Great Lakes St. Lawrence Seaway Study* (published in November 2007) and follows the asset renewal activities currently underway at the Canadian Seaway locks. Beginning with the passage of the Canada Marine Act in 1998, the Canadian government started to address the asset renewal needs of its 13 Seaway locks, including the 8 Welland Canal locks that are over 75 years old.

Original ARP baseline project estimates developed by the SLSDC used four criteria, as applicable: (1) historical costs for similar work completed previously by the SLSDC, (2) consultation with the U.S. Army Corps of Engineers (USACE) for similar work it completed at other U.S. locks, (3) consultation with the SLSMC for similar work it completed at the Canadian Seaway locks, and (4) utilization of data from RSMeans, which serves as North America's leading supplier of construction cost information. Estimates used in developing the FY 2010 ARP operating plan and out-year estimates also considered final contract totals for similar ARP work awarded during the program's first year in FY 2009.

This semiannual report provides the Appropriations Committees with updates on (1) FY 2010 ARP budget, projects, and updates; (2) GAO's review of the program; (3) the latest five-year estimates for ARP projects in FYs 2011-2015; and (4) a feature article on the SLSDC's FY 2010 ARP program in *Seaway Review* magazine.

### **PROJECT UPDATES (as of March 31, 2010)**

The following information provides a project-by-project update on ARP work completed in FY 2010, as of March 31, 2010. Although the SLSDC obligated only \$2.5 million (15 percent) of its ARP budget by March 31, the agency expects to fully obligate its appropriated ARP budget of \$16.3 million by the end of the fiscal year. To date, there have been no significant problems, delays, or cost overruns that have impacted the implementation of the ARP.

#### **Project No. 1: Snell Lock – Replace Fendering Downstream Guidewall Extension**

General Description: This project is to replace the composite fendering on the downstream guidewall extension at Snell Lock. The existing composite fenders were a trial design installed nearly 20 years ago which have become very difficult/expensive to maintain and are in need of replacement to insure that vessels using this approach wall or the approach wall are not damaged due to the condition of the existing fendering.

Type of Project<sup>1</sup>: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$0

FY 2010 Adjusted Internal Spending Plan: \$10,000

FY 2010 Obligations (as of March 31, 2010)<sup>2</sup>: \$0

Update (as of March 31, 2010): Funding in FY 2010 will be used to install the fenders purchased in FY 2009. The SLSDC is considering using in-house personnel to complete the replacement of the fendering on the downstream guidewall extension at Snell Lock.

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**Project No. 3: Both Locks – Rehabilitate Mooring Buttons, Pins and Concrete along Guidewalls and Guardwalls**

General Description: This project is a multi-year initiative to rehabilitate the upstream and downstream approach walls at both locks. These are mass concrete monolithic structures with vessel mooring buttons located behind them for transiting vessels to tie to. Since they were constructed, the concrete lifts/blocks have been dislodged and concrete damaged by vessel impact and the mooring buttons have settled such that they collect water/ice, making them difficult to use. The rehabilitation work will include pinning dislodged lifts, repairing damaged concrete and raising mooring buttons that have settled to improve the serviceability of the approach walls.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$251,000

FY 2010 Adjusted Internal Spending Plan: \$0

FY 2010 Obligations (as of March 31, 2010): \$1,687

Update (as of March 31, 2010): Corporation personnel repaired damaged electrical handholes on the upstream guidewall at Snell Lock. Although no funding was allocated for this project, there was an immediate need for this repair.

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<sup>1</sup> The SLSDC's ARP includes capitalized projects and equipment as well as non-capitalized, maintenance-related projects. Capital projects and equipment are defined as those of a durable nature that may be expected to have a period of service of more than a year without material impairment of its physical conditioning and includes equipment, improvements and modifications to existing structures. Non-capital maintenance projects include those that do not materially add to the value of the property nor appreciably prolong the life of the infrastructure but merely keeps it in an ordinarily efficient operating condition. Expenditures for these maintenance projects are recognized as operating costs.

<sup>2</sup> Contracts and purchases detailed in the update section for each ARP project may not add up to the total obligations listed for the project. In FY 2010, as of March 31, 2010, there were miscellaneous expenses across the ARP for small purchase orders, travel, supplies, etc., totaling \$30,250 that are not detailed in this report.



*Photo shows holes cored and wire-saw cuts made by the contractor in one of the recesses prior to removing the concrete in large blocks.*

**Project No. 4: Both Locks – Culvert Valve Machinery – Upgrade to Hydraulic Operation**

General Description: This project is for replacing the operating machinery for the north side culvert valves at both locks, which are utilized for filling and emptying the locks. The second phase in future years will address the south side valves at both locks. This machinery is over 50 years old and the open gearing is exhibiting macropitting. This equipment needs to be upgraded to insure its continued reliability. Failure

of this equipment will cause delays to shipping while repairs are made. Due to the fact that this machinery was custom made and spare parts are limited, repairs to multiple pieces of machinery using the spare parts that are on-hand would not be possible. The upgrade will include new hydraulic operating machinery to match the upgrades made at the Canadian Seaway locks and other similar locks in the United States.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$0

FY 2010 Adjusted Internal Spending Plan: \$325,000

FY 2010 Obligations (as of March 31, 2010): \$154,501

Update (as of March 31, 2010): In January 2010, the SLSDC made an award to Fiacco & Riley Construction, Inc., Norwood, N.Y., for \$124,896 (lowest bid) to remove concrete from the culvert valve machinery recesses at both locks in preparation for the north side operating machinery upgrades to take place next winter at both Eisenhower and Snell Locks. The contract was modified due to differing site conditions and the final contract price was \$136,368. In addition, SLSDC staff will install new stairs and drains in these recesses as well as new control equipment provided by the operating machinery upgrade contractor – Hohl Industrial Services, Inc., Tonawanda, N.Y.

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**Project No. 5: Both Locks – Rehabilitate and Insulate Winter Maintenance Lock Covers**

General Description: This project is for rehabilitating and insulating the roof cover modules utilized to cover Eisenhower and Snell Locks when major winter maintenance projects are planned. These covers are over 40 years old and require rehabilitation. Insulating and modifying them to provide improved access such that entire roof sections will not have to be removed to

access work areas in the locks will save on funds used to heat work areas when required for such temperature sensitive projects as placing concrete and painting steel structures.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$0

FY 2010 Adjusted Internal Spending Plan: \$5,000

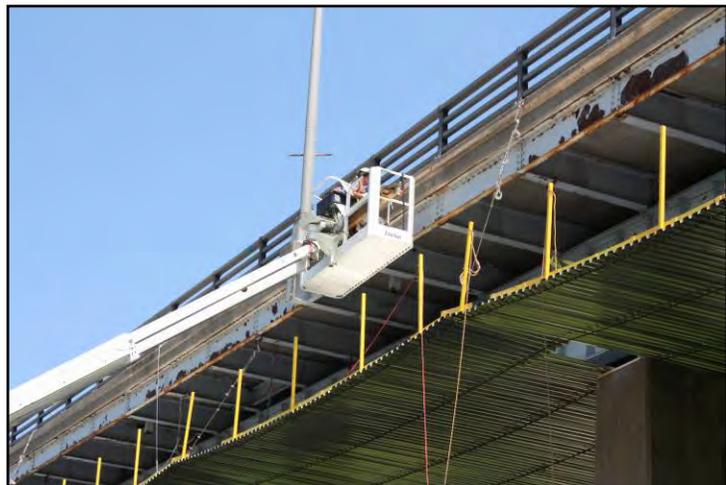
FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): In FY 2009, the SLSDC contracted for fabrication and installation of additional roof cover access panels, as well as purchasing steel and other materials for in-house staff to modify roof covers. Funding in FY 2010 is expected to cover costs for the modification of three more roof covers.

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**Project No. 6: Seaway International Bridge – Perform Structural Rehabilitation and Corrosion Prevention**

General Description: This project is for rehabilitation of the structural components of the south span bridge between Rooseveltown, N.Y., and Cornwall Island, which crosses the Seaway navigation channel. The bridge, which annually accommodates more than 2.5 million vehicles, was opened to traffic in 1962 and is in need of significant rehabilitation. This project, scheduled for completion after four years of work, is designed to stop the corrosion currently experienced on many portions of the bridge structure and prevent the need for large-scale structural or even bridge replacement in the future. The SLSDC owns 68 percent of the south span bridge and the budget request reflects the U.S. prorated amount for the project. The Canadian Federal Bridge Corporation owns the remaining 32 percent of the bridge and will fund its share.



*Contractor is installing a work platform under the bridge from which to perform blast cleaning and painting operations.*

Type of Project: Non-Capital Maintenance Project

Mission Objective: Tunnel and Bridge Maintenance

FY 2010 Estimate: \$5,773,000

FY 2010 Adjusted Internal Spending Plan: \$4,500,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): The Canadian Seaway International Bridge Corporation (SIBC), which operates and maintains the Seaway International Bridge for the two owners (SLSDC and FBC), made an award to Abhe and Svoboda, Inc., Prior Lake, Minn., in August 2009 for the first two phases. Work has commenced at the site and the first two phases are expected to be completed this fall. In FY 2009, the SLSDC obligated an additional \$1.1 million of ARP funds to the project, reducing the amount of funding needed for the project in FY 2010 (next two phases). This additional obligation in FY 2009 was critical to ensuring that funding would be available for the miter gate upgrade in FY 2010. The SLSDC and SIBC entered into a Memorandum of Understanding (MOU) for the multi-year project, which details the estimates for the project and the process for the SLSDC to obligate funds to the SIBC for the project.

The SLSDC is working with the SIBC officials to finalize the specifications and plans for the next two phases of the project. Once completed (expected this summer), the SLSDC will obligate FY 2010 funds for the project.

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**Project No. 7: Both Locks – Culvert Valves – Replace with Single Skin Valves**

General Description: This project is for replacing the double skin culvert valves utilized for filling and emptying the locks with single skin valves. Cracking of major structural members has occurred and with the double skin construction, the structural members are not accessible for inspection, blast cleaning, and painting. The culvert valves are more than 50 years old and are corroding from the inside. The new single skin valves will provide access to the structural members for inspection and maintenance. The failure of a culvert valve would cause a delay to shipping while the damaged valve was removed and replaced. Dependant on the type of failure, other lock operating components/equipment could be damaged causing the lock to be out of service for a longer time.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$603,000

FY 2010 Adjusted Internal Spending Plan: \$297,000

FY 2010 Obligations (as of March 31, 2010): \$294,528

Update (as of March 31, 2010): In FY 2009, the SLSDC deferred this project due to the excessively high bid from only one bidder and re-advertised it to a wider range of businesses in early FY 2010. An award was made to LMC Power Systems, Dansville, N.Y., in January 2010 for \$294,528 for two valves with stems, with options to purchase the remaining six valves with stems for both locks at that rate. The Corporation's decision to defer this project will result in a savings of approximately \$300,000 per valve or \$2.4 million for all eight valves. During the first half of the fiscal year, LMC Power Systems visited the work site and will begin fabrication of the two valves with stems this summer with a delivery scheduled for September 2010. These first two will be installed by SLSDC personnel next winter.

In addition, the SLSDC is expected to award contracts in the second half of the fiscal year for inspection of the welds and coatings during fabrication at LMC's facilities as well as for project management and construction inspection services for next winter's installation.

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**Project No. 8: Floating Navigational Aids – Upgrade/Replace**

General Description: This is an ongoing program to replace floating navigational aids/buoys and winter markers that have been damaged over the years, on an as required basis. The Corporation is responsible for approximately 100 buoys and 50 winter markers.

Type of Project: Capital Project

Mission Objective: Waterway Management

FY 2010 Estimate: \$60,000                      FY 2010 Adjusted Internal Spending Plan: \$60,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): During the second half of the fiscal year, the SLSDC will purchase approximately 50 red and green flashers (using the General Service Administration's (GSA) Federal Supply Schedule) to be installed by in-house staff on floating navigational aids. The new flashers/lanterns are specially designed to increase beam divergence while consuming less power.

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**Project No. 9: Corporation Equipment – Replace Heavy and Light Equipment, Maintenance Vehicles and Shop Equipment**

General Description: This is an ongoing program to replace heavy and light equipment, vehicles and shop equipment as it becomes worn out and unserviceable. Heavy and light equipment includes such items as a crane, dump truck, snow plow, backhoe, grader, front end loader and shop equipment such as a lathe, milling machine and drill press.

Type of Project: Capital Equipment

Mission Objective: Lock Operation Upgrade and Maintenance / Waterway Management

FY 2010 Estimate: \$251,000                      FY 2010 Adjusted Internal Spending Plan: \$235,000

FY 2010 Obligations (as of March 31, 2010): \$206,194

Update (as of March 31, 2010): In FY 2010, the SLSDC ordered seven work vehicles through GSA for use in Massena, N.Y. The total cost of the vehicles was \$200,171. Most notably, the Corporation ordered two hybrid SUVs and a new work van to be used by the Maintenance Division's pipefitters. Some of the vehicles have been delivered and delivery of the van is expected in July 2010. In addition, the SLSDC purchased steel to fabricate carriers for transporting the counterweights for the 170-ton capacity all terrain crane purchased in FY 2009.

During the second half of the fiscal year, tool boxes will be purchased for installation on the maintenance trucks.

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**Project No. 10: Both Locks – Upgrade 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 Eisenhower and Snell Locks and to the Corporation's Maintenance Facility. The power is furnished directly from the Moses-Saunders Power Dam over infrastructure that is over 50 years old. The loss of power from the Moses-Saunders Power Dam makes it necessary to utilize diesel generators, which are expensive to operate, to continue operation of Eisenhower and Snell Locks and the Maintenance Facility.

Type of Project: Non-Capital Maintenance Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$75,000

FY 2010 Adjusted Internal Spending Plan: \$100,000

FY 2010 Obligations (as of March 31, 2010): \$5,497

Update (as of March 31, 2010): The New York Power Authority (NYPA) is continuing to rehabilitate the infrastructure that supplies power to SLSDC operations and maintenance facilities. This work has to be coordinated with the SLSDC so that generators can be installed and/or operated while power is interrupted for the work to be completed. This is a recurring annual ARP project with expenditures dependent on NYPA plans and work completed. The SLSDC will make its annual payment to NYPA during the second half of FY 2010. In FY 2010, the SLSDC expended \$5,497 for the purchase of fuel oil used for operating a generator while NYPA worked on the switchgear at Eisenhower Lock.

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**Project No. 11: Fixed Navigational Aids – Rehabilitate**

Description: This project is for rehabilitating fixed navigational aids in the Seaway. Many of the structures are over 50 years old and are in need of more than routine repairs. Many of these structures have concrete bases which are eroding and cracking. The inspection of these structures was done by divers and the majority of the repairs will require divers and the use of a

tug and barge with crane to complete. Failure of a fixed aid would likely make it necessary to replace it which would cost significantly more than repairing the existing structure.

Type of Project: Non-Capital Maintenance Project

Mission Objective: Waterway Management

FY 2010 Estimate: \$201,000      FY 2010 Adjusted Internal Spending Plan: \$10,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): The SLSDC does not anticipate any large-scale expenditures for this project in FY 2010. Diver reports in FY 2009 noted that the SLSDC's fixed navigational aids are not in need of significant immediate rehabilitation. The Corporation expects to make some minor upgrades to the fixed aids in the second half of FY 2010.

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**Project No. 12: Corporation Equipment – Upgrade/Replace Floating Plant**

General Description: This is an ongoing program to rehabilitate and/or replace the Corporation's floating plant which is utilized for maintaining the locks and navigation channels. This multiyear project includes plans to replace the tug; upgrade the buoy tender barge; purchase a smaller tug for more efficient operations where the capabilities of the larger tug are not required; purchase a small boat for emergency response a spud barge/scow for work on navigational aids and for emergency/spot dredging; and rehabilitate the Corporation's crane barge/gatelifter, which would have to be utilized if a miter gate was damaged and had to be replaced.



*The emergency response boat is being fabricated at William A. Munson's facilities in Burlington, Wash.*

Type of Project: Capital and Non-Capital Maintenance Projects

Mission Objective: Lock Operation Upgrade and Maintenance / Waterway Management

FY 2010 Estimate: \$503,000      FY 2010 Adjusted Internal Spending Plan: \$1,845,000

FY 2010 Obligations (as of March 31, 2010): \$955,754

Update (as of March 31, 2010): FY 2010 priorities for this project include the purchase of an emergency response boat and sectional spud barge as well as the drydocking of the Corporation's tug and gatelifter . As highlighted in the previous semiannual report (September 30, 2009), the boat and barge purchases were deferred in FY 2009 in order to fund higher priority ARP projects.



*Corporation personnel under the direction of Poseidon representatives are assembling the sectional spud barge for the first time.*

In October 2009, the SLSDC purchased a 23-foot aluminum boat with trailer and outboard motors, from William A. Munson Co., Burlington, Wash. (lowest bid on GSA e-buy program) for \$93,227. The boat will be used for navigational aid repair and emergency response. The boat, trailer, and motor were delivered in February 2010. In January 2010, the SLSDC awarded a contract to Poseidon Barge Corporation, Fort Wayne, Ind. (best value) for the fabrication and delivery of a 50-foot by 110-foot sectional spud barge. The contract cost for the barge as of March 31 was \$846,386. Two additional purchases were made in FY 2010 related

to the spud barge: two deck hand winches (Back Creek Marine Supplies, Chesapeake City, Md., for \$9,135); and wire rope (Hanes Supply, Inc., Colonie, N.Y., for \$2,988). Delivery of the barge and training for SLSDC personnel is expected in May 2010. The barge will be used for performing repair work on fixed aids to navigation and other structures in the river as well as for emergency/spot dredging.

During the second half of the fiscal year, the SLSDC expects to award contracts for the drydocking of its tug (Robinson Bay) and gatelifter (Grasse River). The drydocking is expected to be completed this fall and will focus on blast cleaning and painting of the vessel's hulls and inspecting and repairing underwater components as required.

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### **Project No. 14: Corporation Facilities – Replace Paving and Drainage Infrastructure**

General Description: This project is for improving the pavement and drainage along lock approach walls, Corporation roadways and parking and work areas at all Corporation facilities. In Upstate New York, the damage to pavements caused by winter conditions is significant and repairs often require complete replacement of the pavement down to and including the base materials.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance / Waterway Management

FY 2010 Estimate: \$1,508,000

FY 2010 Adjusted Internal Spending Plan: \$1,000,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): In the second half of FY 2010, the SLSDC will award two contracts related to paving and drainage. The first contract will be to one of the SLSDC's three architecture/engineering (A/E) firms on contract<sup>3</sup> for reconnaissance work and for preparation of designs, specifications, drawings, and cost estimates for future paving and drainage improvements. The second contract will be for paving and drainage work. The scope of the work awarded in FY 2010 will depend on the results of the reconnaissance phase. It is also expected that paving and drainage work obligated in FY 2009 and started last fall on the north side of both locks will continue later this spring.

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*Contractor removed concrete to expose joints below roadway surface for grouting and sealing.*

**Project No. 15: Eisenhower Lock Highway Tunnel – Rehabilitate**

General Description: This is an ongoing project to maintain the highway tunnel which goes through the upper sill area of Eisenhower Lock to provide the only access to the north sides of both Eisenhower and Snell Locks, to NYPA's Robert Moses Power Project and to the New York State Park on Barnhart Island. This project includes tunnel lighting upgrade, grouting to limit the water leaking into the tunnel, replacing damaged/missing tiles from the walls

and ceiling, replacing deteriorated/damaged gratings and railings, stabilizing/repairing wingwalls at the tunnel approaches and clearing tunnel drains which are becoming plugged with concrete leachate products. Due to the fact that this tunnel is the only means of access to the facilities noted above, any problems that would make it necessary to close the tunnel for repair would have very significant impacts.

Type of Project: Non-Capital Maintenance Project

Mission Objective: Tunnel and Bridge Maintenance

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<sup>3</sup> The SLSDC's Procurement Division, in working with the agency's engineering team, recognized the need to be able to award ARP-related support contracts quickly without the time constraints of traditional federal contracts. The SLSDC expects to use architecture/engineering (A/E) contractors to receive support and expert advice on project plans, specifications, drawings, and cost estimates throughout the ARP 10-year timeframe. To that end, the SLSDC awarded indefinite delivery contracts in FY 2009 to three A/E firms to support the ARP – Hatch Mott MacDonald, Buffalo, N.Y., Parsons Brinckerhoff (PB) Americas, Inc., Buffalo, N.Y., and Aubertine and Currier, Watertown, N.Y. As support work is needed, the SLSDC will request proposals from the three firms in a streamlined process, with negotiations, if required, limited to only those firms. The policies and procedures for awarding indefinite delivery contracts are contained in Federal Acquisition Regulation (FAR), Subpart 16.5.

FY 2010 Estimate: \$0

FY 2010 Adjusted Internal Spending Plan: \$275,000

FY 2010 Obligations (as of March 31, 2010): \$257,560

Update (as of March 31, 2010): In October 2009, the SLSDC awarded a contract to Fiacco & Riley Construction, Co., Norwood, N.Y. (lowest bidder) for tunnel grouting and sealing. Work began in November 2009 and is expected to be completed this spring. Contract costs for this project were \$257,560 as of March 31. The SLSDC expects to modify the contract before the contractor's work is completed to include additional grouting of tunnel joints.

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**Project No. 16: Seaway System – Upgrade GPS/AIS/TMS Technologies**

General Description: This project is to expand the 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. Plans are to use these technologies to enable vessels to better identify hazards at times of limited visibility.

Type of Project: Capital Project

Mission Objective: Waterway Management

FY 2010 Estimate: \$0

FY 2010 Adjusted Internal Spending Plan: \$0

FY 2010 Obligations (as of March 31, 2010): \$3,103

Update (as of March 31, 2010): In January 2010, the Corporation purchased equipment needed to provide additional water level data to its vessel traffic management system as part of a joint binational project looking at the optimization of the maximum sailing draft. The upgrade also provides wind speed and direction data that was previously unavailable. The equipment was purchased on the GSA Federal Supply Schedule from Zeller Corporation, Syracuse, N.Y., for \$2,208.

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**Project No. 18: Eisenhower Lock – Vertical Lift Gate – Replace Wire Ropes**

General Description: This project is for replacing the wire rope cables that serve to raise and lower the vertical lift gate at Eisenhower Lock. These cables were last replaced in 1979 and are exhibiting some strand breakage and corrosion. The vertical lift gate is an emergency closure designed to hold back the power pool if a miter gate is compromised.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$503,000

FY 2010 Adjusted Internal Spending Plan: \$500,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): The SLSDC will award a contract in April 2010 for the installation of new wire rope for its emergency vertical lift gate at Eisenhower Lock. The upgrade will take place next winter.

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**Project No. 19: Corporation Facilities – Upgrade 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 insure continued reliability. The majority of this equipment is more than 50 years old.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance / Facility Upgrade and Maintenance

FY 2010 Estimate: \$151,000

FY 2010 Adjusted Internal Spending Plan: \$150,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): SLSDC engineering staff will complete the design, specifications, drawings, and cost estimates for this project early in the second half of FY 2010. A solicitation for work will immediately follow and funds will be obligated before the end of FY 2010 for the first phase of this multiyear project.

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**Project No. 20: Both Locks – Upgrade Lock Status/Controls**

General Description: This project is for upgrading the lock/equipment status systems and the lock operating controls at both Eisenhower and Snell Locks. At present only the most critical components are monitored and controlled by the new computerized system. Adding control of some of the less critical components and more in depth monitoring of the status of all components will improve the effectiveness of preventive maintenance activities and result in increased reliability.

Type of Project: Capital and Non-Capital Maintenance Projects

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$151,000

FY 2010 Adjusted Internal Spending Plan: \$200,000

FY 2010 Obligations (as of March 31, 2010): \$130,696

Update (as of March 31, 2010): In FY 2010, the SLSDC is making significant upgrades to its lock control system. Most notably, the SLSDC is upgrading the graphics software for the system. Purchases completed as of March 31, 2010 were:

- Lock control system equipment (\$66,870)  
Zeller Corporation, Syracuse, N.Y. (GSA Federal Supply Schedule; sole source)
- Upgraded lock control graphics software (\$59,500)  
Optimization Technology, Inc., Rush, N.Y. (sole source)
- System server (\$3,145)  
ABC-MTS Management Technology Solutions, Herndon, Va. (small purchase)

The upgrades are expected to go into production in the summer of 2010 following installation and testing.

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### **Project No. 21: Snell Lock – Compressed Air Systems – Upgrade/Replace**

General Description: This project is for replacing the compressors and corroded piping at Eisenhower and Snell Locks which provide compressed air for various systems at the locks, for maintenance work and for air curtains and bubblers utilized to control ice in and around the locks during the opening and closing of the navigation seasons. The ability of the existing compressed air systems to provide the required volumes and/or pressures reliably is becoming a problem.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$1,508,000      FY 2010 Adjusted Internal Spending Plan: \$1,500,000

FY 2010 Obligations (as of March 31, 2010): \$15,923

Update (as of March 31, 2010): Aubertine and Currier, Watertown, N.Y., one of the SLSDC's indefinite delivery A/E firms, was awarded an order to evaluate the existing compressed air systems and to provide recommendations for improving those systems. The draft report was received from them in March. The final report will be delivered in April 2010 after which Corporation Engineering and Maintenance personnel will select the options to implement and will complete designs, specifications, drawings, and cost estimates for the work. The SLSDC plans to award a contract for the upgrade work in FY 2010.

**Project No. 25: Corporation Facilities – Upgrade/Replace Fire Alarm/Protection Systems**

General Description: This project is for replacing antiquated fire alarm and fire protection systems at Corporation facilities.

Type of Project: Capital Project

Mission Objective: Facility Upgrade and Maintenance

FY 2010 Estimate: \$101,000      FY 2010 Adjusted Internal Spending Plan: \$5,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): This project commenced in FY 2008 due to problems with the antiquated fire alarm systems at Corporation facilities. In FY 2009, the SLSDC obligated funds to multiple vendors for materials required for the installation of new systems by Corporation personnel. A similar approach is expected during the second half of FY 2010.

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**Project No. 26: Corporation Facilities – Upgrade Storage for Lock Spare Parts**

General Description: This project is for constructing and/or upgrading shelters for storage of lock spare parts and equipment to prevent them from corroding. Many of these items are not stored under cover and/or are stored in old storage sheds that are in need of repair or replacement.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance / Facility Upgrade and Maintenance

FY 2010 Estimate: \$201,000      FY 2010 Adjusted Internal Spending Plan: \$200,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): The SLSDC began working this spring to better define the requirements for the first phase of this multiyear project. In FY 2010 the SLSDC plans to design and award a contract for purchase and/or construction of a metal storage building approximately 70 feet by 100 feet. The Corporation is considering doing some of the construction work using in-house personnel to save costs.

**Project No. 27: Corporation Facilities – Replace Windows and Doors and Repair Building Facades**

General Description: This project is for replacing corroded/worn windows and doors with more energy efficient units and for repairing the brick and stone facades which are in need of repair.

Type of Project: Capital Project

Mission Objective: Facility Upgrade and Maintenance

FY 2010 Estimate: \$201,000      FY 2010 Adjusted Internal Spending Plan: \$200,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): In the second half of FY 2010, the SLSDC will hire a consultant to complete an energy and water conservation audit of SLSDC facilities in Massena, N.Y. The audit will include a report with prioritized recommendations for energy conserving improvements. Expenditures in FY 2010 for this project include the audit and will focus on the priorities cited in the audit report.

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**Project No. 29: Eisenhower Lock – Walls, Sills and Culverts – Rehabilitate Concrete**

General Description: This project is to replace deteriorated/damaged concrete at 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. It is resurfacing the mass concrete that forms the locks walls, filling and emptying culverts and the gate sills by replacing concrete to depths ranging between approximately 8 inches and 24 inches.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$2,010,000      FY 2010 Adjusted Internal Spending Plan: \$2,000,000

FY 2010 Obligations (as of March 31, 2010): \$209,395

Update (as of March 31, 2010): In December 2009, the SLSDC awarded a contract to PB Americas, Inc., Buffalo, N.Y., (A/E indefinite delivery; lowest bidder) to complete concrete condition surveys at both U.S. Seaway locks. The final contract amount for this project was \$209,395. Survey work was completed during the winter period and the contractor is completing its report. Following completion of the report, PB Americas will prepare the designs,



*Contractor crews work on surveying concrete conditions in the dewatered Eisenhower Lock.*

specifications, drawings and cost estimates for the first phase of work to be completed at Eisenhower Lock starting in January 2012.

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**Project No. 31: Both Locks – Rehabilitate Upstream Miter Gates**

General Description: This project is to completely rehabilitate the miter gates at the upstream end of both Eisenhower and Snell Locks. This includes replacing worn and/or damaged components including the miter and quoin contact blocks, pintles and bushings, and diagonals to insure proper functioning of the miter gates.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$0

FY 2010 Adjusted Internal Spending Plan: \$2,800,000

FY 2010 Obligations (as of March 31, 2010): \$287,179

Update (as of March 31, 2010): In preparing for the large-scale project to rehabilitate the upstream miter gate at Eisenhower Lock (obligated in FY 2009) which is to be completed next winter starting in January 2011, the SLSDC decided to save costs by purchasing some of the project materials separately. In February 2010, the SLSDC awarded a contract to Wingate Alloys, Inc., Cleveland, Ohio, for the purchase of miter and quoin contact blocks for this project as well as options for purchasing additional materials for the remaining gates. The base contract award amount was \$287,179. A decision will be made before the end of the fiscal year regarding the purchase of the additional miter and quoin blocks for the remaining miter gates. A Statement of Work for inspection services for the work on the upstream miter gate at Eisenhower has been drafted and a contract for these services will be awarded this fiscal year. Work for preparation of designs, specifications, drawings, and cost estimates for rehabilitation of the upstream miter gate at Snell Lock which is planned to start in January 2012 has commenced and a contract for this work will be awarded this fiscal year.

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**Project No. 41: Snell Lock – Install Ice Flushing System Technologies**

General Description: This project is for installation of an ice flushing system at Snell Lock similar to the one at Eisenhower Lock. An ice flushing system is utilized to remove floating ice from the lock chamber to make room for transiting vessels and to prevent/minimize damage to the vessels and/or lock structures. Without an ice flushing system, it is necessary to flush ice utilizing the filling valves which is less efficient and effective and significantly increases the stresses on these valves and causes damage to them.

Type of Project: Capital Project

Mission Objective: Lock Operation Upgrade and Maintenance

FY 2010 Estimate: \$0

FY 2010 Adjusted Internal Spending Plan: \$100,000

FY 2010 Obligations (as of March 31, 2010): \$0

Update (as of March 31, 2010): In the second half of FY 2010, the SLSDC plans to award a contract to one of its indefinite delivery A/E firms to examine the options and develop conceptual designs and cost estimates for a new ice flushing system at Snell Lock. Funding for the new system is included in the FY 2012 and 2013 out year estimates.

## **GAO REVIEW**

In July 2009, the SLSDC was notified by the Government Accountability Office (GAO) that it would be conducting a review of the ARP. The review is in response to a congressional mandate contained in P.L. 111-8, Omnibus Appropriations Act, 2009.

The review focuses on three areas: (1) how the SLSDC developed and estimated costs of projects in its ARP; (2) to what extent the ARP covers all current or expected recapitalization needs; and (3) how effectively the SLSDC coordinated with its Canadian counterpart in developing a comprehensive and coordinated asset renewal program for all Seaway facilities.

Since the start of the review, the SLSDC has responded to numerous requests for information; participated in meetings, conference calls, and interviews; and hosted a GAO team at its operational facilities in Massena, N.Y., for a site visit and file review.

As of March 31, GAO's review was in the final phase, with a final report expected to be issued in May 2010. The results of the review will be reported in the next semiannual report.

## **ARP FIVE-YEAR ESTIMATES**

As provided in the *U.S. St. Lawrence Seaway Asset Renewal Program (ARP) Capital Investment Plan (CIP), 2011-2015*, which was included in the FY 2011 budget request, the SLSDC provided estimates for executing the next five years of the ARP (*see pages 20-21*). In addition, the SLSDC's FY 2010 Budget Request to the Congress included \$16.3 million to fund projects included in Year Two of the ARP. This funding will allow for the work begun in FY 2009 to continue as well as to initiate several new rehabilitation projects.

For the FY 2011-2015 time frame, the Seaway ARP/CIP includes 41 projects and equipment purchases estimated at \$97.2 million with total funding for each year of the plan constrained to funding targets for those years as estimated and approved by the Office of Management and Budget (OMB). It is also important to note that dollar amounts for ARP projects are "project feasibility" baseline estimates and can vary by an industry-recognized 20-30 percent. Project estimates and schedules may fluctuate at various points in the lifespan of the ARP and will be revised as needed.

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**Saint Lawrence Seaway Development Corporation (SLSDC)**  
**Fiscal Year 2010 Asset Renewal Program (ARP) Financial Summary (as of March 31, 2010)**

ARP #	Description	FY 2010 ARP CIP Budget Estimate	FY 2010 Adjusted Internal Operating Plan	FY 2010 Obligations (Actual)	Percent Obligated vs. Estimated
1	Snell Lock - Replace Fendering Downstream Guidewall Extension	\$0	\$10,000	\$0	0%
2	Both Locks - Rehabilitate Downstream Miter Gates (Replaced by ARP No. 31 -- Upstream Gate)	\$1,508,000	\$0	----	----
3	Both Locks - Rehabilitate Mooring Buttons and Concrete Along Guidewalls and Guardwalls	\$251,000	\$0	\$1,687	100%
4	Both Locks - Culvert Valve Machinery - Upgrade to Hydraulic Operation	\$0	\$325,000	\$154,501	48%
5	Both Locks - Rehabilitate and Insulate Winter Maintenance Lock Covers	\$0	\$5,000	\$0	0%
6	Seaway International Bridge - Perform Structural Rehabilitation and Corrosion Prevention	\$5,773,000	\$4,500,000	\$0	0%
7	Both Locks - Culvert Valves - Replace With Single Skin Valves	\$603,000	\$297,000	\$294,528	99%
8	Floating Navigational Aids - Replace	\$60,000	\$60,000	\$0	0%
9	Corporation Equipment - Replace Heavy and Light Equipment, Maintenance Vehicles, and Shop Equipment	\$251,000	\$235,000	\$206,194	88%
10	Both Locks - Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	\$75,000	\$100,000	\$5,497	5%
11	Fixed Navigational Aids - Rehabilitate	\$201,000	\$10,000	\$0	0%
12	Corporation Equipment - Upgrade/Replace Floating Plant	\$503,000	\$1,845,000	\$955,754	52%
14	Corporation Facilities - Replace Paving and Drainage Infrastructure	\$1,508,000	\$1,000,000	\$0	0%
15	Eisenhower Lock - Highway Tunnel - Rehabilitate	\$0	\$275,000	\$257,560	94%
16	Seaway System - Upgrade GPS / AIS / TMS Technologies	\$0	\$0	\$3,103	100%
18	Eisenhower Lock - Vertical Lift Gate - Replace Wire Ropes	\$503,000	\$500,000	\$0	0%
19	Corporation Facilities - Upgrade Electrical Distribution Equipment	\$151,000	\$150,000	\$0	0%
20	Both Locks - Upgrade Lock Status/Controls	\$151,000	\$200,000	\$130,696	65%
21	Both Locks - Compressed Air Systems - Upgrade/Replace	\$1,508,000	\$1,500,000	\$15,923	1%
22	Both Locks - Install Vessel Self Spotting Equipment	\$251,000	\$0	----	----
24	Both Locks - Structural Repair - Grout Leaks in Galleries and Recesses	\$201,000	\$0	----	----
25	Corporation Facilities - Upgrade/Replace Fire Alarm/Protection Systems	\$101,000	\$5,000	\$0	0%
26	Corporation Facilities - Upgrade Storage for Lock Spare Parts	\$201,000	\$200,000	\$0	0%
27	Corporation Facilities - Replace Windows and Doors and Repair Building Facades	\$201,000	\$200,000	\$0	0%
29	Eisenhower Lock - Walls, Sills, and Culverts - Rehabilitate Concrete	\$2,010,000	\$2,000,000	\$209,395	10%
31	Both Locks - Rehabilitate Upstream Miter Gate at Snell (Originally in FY 2010 as ARP No. 2 -- Downstream Gates)	\$0	\$2,800,000	\$287,179	10%
41	Snell Lock - Install Ice Flushing System Technologies	\$0	\$100,000	\$0	0%
99	Engineering Design, Construction Inspection, Contracting Support, and Project Management	\$306,000	N/A	\$0	----
	<b>Asset Renewal Program Total</b>	<b>\$16,317,000</b>	<b>\$16,317,000</b>	<b>\$2,522,017</b>	<b>15%</b>

Note: The \$306,000 shown for Project No. 99 related to support costs, primarily associated with using third-party service providers, is now included in the individual projects. The SLSDC expended an additional \$251,000 in personnel compensation and benefits from its "Operations and Maintenance" program in FY 2010 for staff time associated with ARP work, as of March 31, 2010

**U.S. Seaway Asset Renewal Program Capital Investment Plan FY 2011-2015**

Project No.	Project Title	Type of Project (1)	Mission Objective (2)	Time Work Completed (3)	FY 2011 Request	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Five Year Total
1	Snell Lock - Replace Fendering Downstream Guidewall Extension	CP	L	Other	\$10,000					\$10,000
2	Both Locks - Rehabilitate Downstream Miter Gates	MP	L	Winter	\$4,250,000	\$4,380,000				\$8,630,000
4	Both Locks - Culvert Valve Machinery - Upgrade to Hydraulic Operation	CP	L	Winter	\$4,500,000					\$4,500,000
5	Both Locks - Rehabilitate and Insulate Winter Maintenance Lock Covers	CP	L	Other		\$258,000				\$258,000
6	Seaway International Bridge - Perform Structural Rehabilitation and Corrosion Prevention	MP	T/B	Other	\$3,466,000					\$3,466,000
7	Both Locks - Culvert Valves - Replace with Single Skin Valves	CP	L	Other	\$300,000	\$305,000	\$306,000			\$911,000
8	Floating Navigational Aids - Replace	CP	W	Other	\$61,000	\$61,000	\$61,000	\$62,000	\$62,000	\$307,000
9	Corporation Equipment - Replace Heavy and Light Equipment, Maintenance Vehicles and Shop Equipment	CE	L, W	Other	\$100,000	\$254,000	\$255,000	\$256,000	\$258,000	\$1,123,000
10	Both Locks - Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	MP	L	Other	\$50,000	\$20,000	\$20,000	\$21,000	\$21,000	\$132,000
11	Fixed Navigational Aids - Rehabilitate	MP	W	Other	\$100,000	\$203,000	\$204,000	\$205,000	\$206,000	\$918,000
12	Corporation Equipment - Upgrade/Replace Floating Plant	CP	L, W	Other	\$505,000	\$1,524,000		\$18,455,000		\$20,484,000
13	Corporation Facilities - Replace Roofs	CP	F	Other	\$130,000	\$230,000	\$300,000	\$500,000	\$500,000	\$1,660,000
14	Corporation Facilities - Replace Paving and Drainage Infrastructure	CP	L, F	Other	\$750,000		\$1,530,000		\$1,546,000	\$3,826,000
15	Eisenhower Lock - Highway Tunnel - Rehabilitate	MP	T/B	Other	\$650,000		\$255,000		\$258,000	\$1,163,000
16	Corporation Technologies - Upgrade GPS/AIS/TMS	CP	W	Other	\$50,000		\$102,000		\$103,000	\$255,000
17	Navigation Channels - Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments	MP	W	Other					\$5,152,000	\$5,152,000
19	Corporation Facilities - Upgrade Electrical Distribution Equipment	CP	L, F	Other	\$150,000	\$500,000				\$650,000
20	Both Locks - Upgrade Lock Status/Controls	CP	L	Other	\$75,000					\$75,000
22	Both Locks - Install Vessel Self Spotting Equipment	CP	L	Other				\$288,000	\$291,000	\$579,000
24	Both Locks - Structural Repair - Grout Leaks in Galleries and Recesses	MP	L	Other		\$203,000				\$203,000
26	Corporation Facilities - Upgrade Storage for Lock Spare Parts	CP	L, F	Other		\$203,000		\$205,000		\$408,000
27	Corporation Facilities - Replace Windows and Doors and Repair Building Facades	MP	F	Other		\$203,000		\$205,000		\$408,000
28	Snell Lock - Walls, Sills and Culverts - Rehabilitate Concrete	MP	L	Winter			\$2,040,000			\$2,040,000
29	Eisenhower Lock - Walls, Sills and Culverts - Rehabilitate Concrete	MP	L	Winter		\$2,030,000			\$2,061,000	\$4,091,000
32	Snug Harbor - Rehabilitate Spare Gate Storage and Assembly Area	MP	L	Other	\$253,000	\$254,000	\$255,000			\$762,000

**U.S. Seaway Asset Renewal Program Capital Investment Plan FY 2011-2015**

Project No.	Project Title	Type of Project (1)	Mission Objective (2)	Time Work Completed (3)	FY 2011 Request	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Five Year Total
33	Both Locks - Upgrade Drainage Infrastructure in Galleries and Recesses	CP	L	Other		\$152,000	\$163,000	\$154,000	\$155,000	\$614,000
34	Both Locks - Improve Ice Control	CP	L	Winter	\$100,000	\$228,000	\$230,000	\$231,000	\$232,000	\$1,021,000
35	Vessel Mooring Cells - Rehabilitate and Extend	CP	W	Other	\$100,000		\$1,020,000	\$1,025,000		\$2,145,000
36	Eisenhower Lock - Diffusers - Replace	MP	L	Winter		\$3,045,000				\$3,045,000
37	Eisenhower Lock - Construct Drydock for Vessel Maintenance	CP	L, W	Winter					\$800,000	\$800,000
38	Both Locks - Upgrade/Replace Emergency Generators	CP	L	Winter		\$508,000	\$510,000			\$1,018,000
39	Both Locks - Dewatering Pumps - Upgrade Outdated Equipment	CP	L	Other		\$203,000	\$204,000			\$407,000
40	Both Locks - Extend Guidewalls in Pool	CP	L	Other			\$1,530,000		\$1,546,000	\$3,076,000
41	Snell Lock - Install Ice Flushing System Technologies	CP	L	Winter		\$5,075,000	\$5,103,000			\$10,178,000
42	Both Locks - Miter Gates - Structural Rehabilitation	MP	L	Winter		\$761,000	\$765,000	\$513,000	\$515,000	\$2,554,000
43	Both Locks - Miter Gate Machinery - Upgrade/Replace	CP	L	Winter			\$1,632,000		\$1,649,000	\$3,281,000
44	Both Locks - Ship Arrestor Machinery - Upgrade/Replace	CP	L	Winter				\$410,000	\$415,000	\$825,000
45	Flow Control Dikes - Rehabilitate	MP	W	Other					\$515,000	\$515,000
46	Both Locks - Guidewall Extensions - Rehabilitate	MP	L	Other					\$515,000	\$515,000
51	Corporation Facilities -- Upgrade Physical Security to Meet HSPD-12 Requirements	CP	F	Other	\$100,000	\$50,000	\$50,000			\$200,000
52	Eisenhower Lock Visitors' Center - Replace	CP	F	Other			\$5,000,000			\$5,000,000
	<b>Total</b>				<b>\$15,700,000</b>	<b>\$20,650,000</b>	<b>\$21,525,000</b>	<b>\$22,530,000</b>	<b>\$16,800,000</b>	<b>\$97,205,000</b>

(1) CP=Capital Project; CE=Capital Equipment; MP=Non-Capital Maintenance Project

(2) L=Lock Operation Upgrade and Maintenance; W=Waterway Management; T/B=Tunnel and Bridge Maintenance; F=Facility/Equipment Upgrade and Maintenance

(3) Winter=During Non-Navigation Season; Other=Other Than Non-Navigation Season

Notes: (a) Estimates as of January 2010; (b) Dollar amounts for ARP projects are "project feasibility" estimates and can vary have an industry-recognized contingency of 20-30 percent;

(c) FY 2009 Actuals include No. 99 in project totals. Amount shown is a "non-add" total.

# Funding year two

*U.S. Seaway uses 2010 appropriation to begin hydraulic updates to older locks*

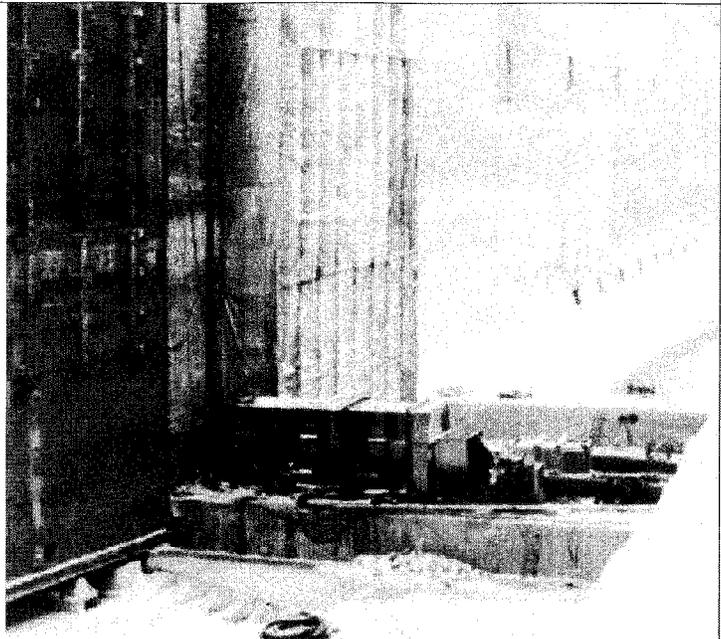
**W**ith an additional \$16.3 million approved by Congress for 2010, the Saint Lawrence Seaway Development Corporation (SLSDC) is moving forward with its Asset Renewal Plan (ARP). The 10-year plan will introduce hydraulics to the U.S. Seaway locks—the Eisenhower and Snell locks—in Massena, New York.

According to Tom Lavigne, Director of Engineering and Maintenance for SLSDC, about \$15 million of the \$92 million budget for the 10-year plan will be invested in hydraulic improvements. In 2010, Canada's St. Lawrence Seaway Management Corporation is also amid an extensive renewal project on its 13 Seaway locks, including completing the installation of hydraulics in their operation, as well as testing new technology such as hands-free mooring (see related story on page 36). Many of SLSDC's planned investments parallel activities underway at the Canadian Seaway locks.

The ARP encompasses 50 projects to renew the U.S. portion of the Great Lakes/St. Lawrence Seaway system. It was originally approved under President George W. Bush in 2008 and the 2011 appropriation is now before Congress.

The 2010 appropriation matches the corporation's request, preparing the way for an additional \$16.3 million to be invested in upgrades that include work on the Seaway International Bridge, purchasing new equipment and integrating modern technology into the locks. Some of the ARP projects begun in 2009 will be completed, such as repairs to the locks' approach walls concluding this spring.

Upgrades at the locks include new ship positioning, ship mooring and hydraulic



*Lock maintenance work underway at U.S. Seaway locks in Massena, New York.*

Many of SLSDC's planned investments parallel activities underway at the Canadian Seaway locks.

operations technology. Currently, computers are used to initiate operations of both the Snell and Eisenhower locks' operations. The original manual controls serve as a back-up. Installation of hydraulic operations is introducing a new programmable logic control system, with a redundant backup. The original control board will no longer be used.

"The hydraulics will improve reliability," Lavigne said. "The existing systems are 50 years old, and we've got parts that are bent and have been through so many cycles that they are worn. We broke a strut arm when closing this year. Hydraulics are more forgiving. The hydraulic cylinders use oil, which is compressible. If it's stressed, it will blow a release valve rather than breaking."

Hydraulics improve reliability because warning systems are designed to alert lock operators when pressure or temperatures are building—before a breakdown.

"The operator will have more information at his or her fingertips," Lavigne said. "They can go to a computer screen and see how everything is operating. It will be easier."

"The hydraulic improvements are something we've wanted to do for quite some time and never had the funding to do," said

Carol Fenton, Deputy Associate Administrator for the SLSDC. "In terms of importance, it is very important to get the hydraulics done."

Year one. In 2009—year one—\$17.5 million was invested in the corporation's and the Great Lakes/St. Lawrence Seaway system's infrastructure. The bulk of the money, about \$6.7 million, was used for improvements at the Eisenhower and Snell locks. About \$61,000 was used to replace floating navigational aids while \$1.85 million was used to update SLSDC facilities and technologies, \$608,000 spent on engineering, inspections and project management, and about \$4.3 million used to dredge and dispose of sediments in navigational channels.

"In 2009, we were on track," Lavigne said. "We worked on everything we planned to. As the project moves forward, there will be more adjustments required."

The adjustments could come in the order of when projects will be bid and completed, as well as potential cost adjustments based on bids received. The original 10-year plan will provide guidance for work to be done.

**Additional projects.** The 2010 appropriation also includes funding for:

- *Rehabilitating the Seaway International*

## U.S. Seaway Asset Renewal Program

Project	2010 Enacted	5-Year Total
<b>BOTH LOCKS</b>		
Rehabilitate downstream miter gates	\$1,508,000	\$3,023,000
Rehabilitate mooring buttons, pins and concrete along guidewalls & guardwalls	251,000	504,000
Culvert valve machinery, upgrade to hydraulic operation	2,020,000	2,020,000
Rehabilitate and insulate winder maintenance lock covers	259,000	259,000
Culvert valves, replace with single skin valves	609,000	1,818,000
Upgrade power supply infrastructure from Moses-Saunders Dam to both locks and adjacent facilities	75,000	212,000
Upgrade lock status, controls	151,000	303,000
Compressed air systems, upgrade, replace	1,508,000	3,023,000
Install vessel self-spotting equipment	251,000	504,000
Structural repair, grout leaks in galleries and recesses	201,000	404,000
Rehabilitate upstream miter gates	0	1,523,000
Upgrade drainage infrastructure in galleries and recesses	0	611,000
Improve ice control	0	790,000
Upgrade/Replace emergency generators	0	1,018,000
Dewatering pumps, upgrade outdated equipment	0	407,000
Extend guidewalls in pool	0	3,053,000
Miter gates, structural rehabilitation	0	2,039,000
Miter gate machinery, upgrade, replace	0	1,632,000
Ship Arrestor machinery, upgrade, replace	0	410,000
<b>CORPORATION EQUIPMENT</b>		
Replace heavy and light equipment, maintenance vehicles and shop equipment	251,000	1,269,000
Upgrade/replace floating plant	503,000	20,986,000
<b>CORPORATION FACILITIES</b>		
Replace roofs	0	469,000
Replace paving and drainage infrastructure	1,508,000	4,553,000
Upgrade electrical distribution equipment	151,000	303,000
Upgrade, replace fire alarm protection systems	101,000	203,000
Upgrade storage for lock spare parts	201,000	609,000
Replace windows and doors and repair building facades	2001,000	609,000
<b>EISENHOWER LOCK</b>		
Highway tunnel rehabilitation	0	508,000
Vertical lift gate replace wire ropes	503,000	503,000
Walls, sills and culverts, rehabilitate concrete	2,010,000	4,040,000
Ice flushing system upgrade	0	202,000
Diffusers, replace	0	3,045,000
Construct drydock for vessel maintenance	0	761,000
<b>ENGINEERING DESIGN</b>		
Construction Inspection and Contracting Support and Project Management	306,000	1,590,000
<b>FIXED NAVIGATIONAL AIDS</b>		
Rehabilitate	201,000	1,015,000
<b>FLOATING NAVIGATIONAL AIDS</b>		
Replace	60,000	305,000
<b>NAVIGATION CHANNELS</b>		
Dredge U.S. sectors to maintain design grade and dispose of sediments	500,000	500,000
<b>SEAWAY INTERNATIONAL BRIDGE</b>		
Perform structural rehabilitation and corrosion prevention	5,773,000	10,439,000
<b>SEAWAY SYSTEM</b>		
Upgrade GPS/AIS/TMS technologies	100,000	300,000
<b>SNELL LOCK</b>		
Walls, sills and culverts, rehabilitate concrete	0	4,060,000
Install ice flushing system technologies	0	10,176,000
<b>SNUG HARBOR</b>		
Rehabilitate spare gate storage and assembly area	0	762,000
<b>VESSEL MOORING CELLS</b>		
Rehabilitate and extend	0	2,035,000
<b>TOTAL</b>	<b>\$16,317,000</b>	<b>\$92,192,000</b>

SOURCE: SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION

**Bridge** - The budget for the bridge work exceeds \$10.4 million and is expected to be in process for three years, with \$5.77 million being appropriated in 2010. The bridge crosses the Seaway channel. The south span, between Roosevelttown and Cornwall Island, New York, is having work on its structural components.

- *Other improvements at both U.S. Seaway locks* - Work on the miter gates, mooring buttons, and pins and concrete along the guidewalls and guardwalls; replace the cables used to raise the emergency gate at the Eisenhower Lock; replace the culvert valves with single skin valves; upgrade the compressed air system that controls ice around the locks; install vessel self-spotting equipment; and boost the power supply structure from the Moses-Saunders Dam to both locks and adjacent facilities.

- *Purchase of a new 130-ton mobile, heavy-lift crane for Massena.*

**Upgrades at the locks include new ship positioning, ship mooring and hydraulic operations technology.**

- *Acquisition of a new floating plant, including the host vessel and survey system.* The survey vessel is being constructed in Arkansas by SeaArk and will be 27 feet long and 8.6 feet wide. Twin 200 hp engines will power the vessel as it determines elevations along the river bottom.

- *A new spud barge that will be used to fix navigational aids along the river, as well as upgrading and replacing some of SLSDC's 100 buoys and 50 winter markers.*

The ARP is based on the finding of the Great Lakes St. Lawrence Seaway Study, a bi-national effort which was released in late 2007 and identified the system's ongoing maintenance and long-term capital requirements.

One conclusion of the study stated: "The existing infrastructure of the Great Lakes St. Lawrence Seaway System must be maintained in good operating condition in order to ensure the continued safety, efficiency, reliability and competitiveness of the system."

For a complete list of the ARP's projects and their anticipated costs, please see the related chart. Janenne Irene Pung ■