WRITTEN STATEMENT OF
COLLISTER JOHNSON, JR., ADMINISTRATOR
SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION

BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
U.S. HOUSE OF REPRESENTATIVES

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The U.S. Saint Lawrence Seaway Development Corporation (SLSDC), a wholly owned government corporation and an operating administration of the U.S. Department of Transportation (DOT), is responsible for the operations and maintenance of the U.S. portion of the St. Lawrence Seaway between Montreal and Lake Erie. This responsibility includes maintaining navigation channels and aids, managing vessel traffic control in areas of the St. Lawrence River and Lake Ontario, and maintaining and operating the two U.S. Seaway locks located in Massena, N.Y. Additionally, the SLSDC performs trade development activities designed to enhance the commercial utilization of the Great Lakes St. Lawrence Seaway System.

The SLSDC coordinates activities with its Canadian counterpart, the St. Lawrence Seaway Management Corporation (SLSMC), particularly its rules and regulations, overall day-to-day operations, traffic management, navigation aids, safety, environmental programs, security, operating dates, and business development programs. The unique binational nature of the Seaway System requires 24-hour, year-round coordination between the two Seaway entities.

In 2009, the U.S./Canadian binational St. Lawrence Seaway celebrates its 50th year of serving global commerce with a safe, secure, efficient, reliable, and cost competitive transportation route connecting the five Great Lakes to the world. Over those first 50 years, more than 2.5 billion metric tons of cargo, valued at more than $375 billion, has moved through the 15-lock waterway.

The St. Lawrence Seaway directly serves an eight-state, two-province region that accounts for 29 percent of the U.S. gross domestic product (GDP), 60 percent of Canada's GDP, 55 percent of North America's manufacturing and services industries, and is home to one-quarter of the continent's population. In fact, maritime commerce on the Great Lakes Seaway System impacts 150,000 U.S. jobs, $4.3 billion in personal income, $3.4 billion in transportation-related business revenue, $1.3 billion in federal, state, and local taxes, and provides approximately $3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation.

FISCAL YEAR (FY) 2010 BUDGET ESTIMATE

For Fiscal Year (FY) 2010, the SLSDC is requesting an appropriation from the Harbor Maintenance Trust Fund (HMTF) of $32.3 million to fund the daily operations and maintenance of the U.S. portion of the St. Lawrence Seaway as well as Year Two projects of the Seaway's Asset Renewal Program (ARP) *(see page 3 for program details).*

The SLSDC's program budget for FY 2010 also includes the use of an estimated $900,000 in agency non-federal revenues for a total spending plan of $33.2 million, approximately $500,000 below the FY 2009 enacted level (due to the planned reduced amount for Year Two ARP projects). The spending plan includes $16.3 million for ARP projects ($1.2 million below the FY 2009 enacted level) and $16.9 million for agency operations, including net baseline increases of $700,000 related to pay raises, benefits, rent, Working Capital Fund, and non-pay inflation.

FY 2010 BUDGET REQUEST BY APPROPRIATION ACCOUNT
Saint Lawrence Seaway Development Corporation
Appropriations
(In thousands of dollars)

ACCOUNT NAME	FY 2008 ACTUAL	FY 2009 ENACTED	FY 2010 REQUEST
Appropriations Request			
Operations and Maintenance - HMTF (69-8003)	$17,392	$31,842	$32,324
Total Program Appropriations			
1. SLSDC Fund (69x4089) [1]			
a. Agency Operations	$18,292	$16,207	$16,907
b. Asset Renewal Program	$0	$17,535	$16,317
SLSDC TOTALS:	**$18,292**	**$33,742**	**$33,224**

[1] The SLSDC Fund (69x4089) for FY 2010 is proposed to include $32,324,000 in an appropriation from the Harbor Maintenance Trust Fund (69-8003) and $900,000 in estimated SLSDC non-federal revenues. Each year, the SLSDC, as a government corporation, generates non-federal income from such sources as interest on investments, rental payments, pleasure craft tolls, tug services, and duty free store revenues.

Under this funding scenario, the SLSDC will be able to perform its core mission of serving the U.S. intermodal and international transportation system and providing a safe, reliable, efficient, and environmentally responsible deep-draft waterway, in cooperation with the Canadian SLSMC.

The $16.3 million estimate to complete 20 ARP projects in FY 2010 was based on the out-year projection provided in the FY 2009 budget request of $16.2 million, plus $82,000 for non-pay inflation. Major ARP projects scheduled for FY 2010 include the continued structural rehabilitation and corrosion prevention of the Seaway International Bridge ($5.8 million) connecting Ontario and New York, which annually accommodates more than 2.5 million vehicles; major concrete rehabilitation at Eisenhower Lock ($2 million); and the rehabilitation of the downstream miter gates at the locks ($1.5 million) *(see appendix for complete list of FY 2010 proposed ARP project costs and descriptions).*

SLSDC programs and activities, including the ARP, are principally focused on meeting the Department's Global Connectivity performance measure of meeting the 99 percent or better goal for U.S. Seaway sector availability. The SLSDC is directly responsible for ensuring the safe, efficient, and secure passage of commercial vessels through the binational St. Lawrence Seaway and it has maintained a 99 percent availability rate throughout the waterway's history, beginning in 1959. In addition, the SLSDC's FY 2010 budget request also supports the Departmental strategic goals of Security, Preparedness and Response, and Organizational Excellence.

SEAWAY ASSET RENEWAL PROGRAM

Background

Starting in 2009, the SLSDC initiated its 10-year U.S. Seaway Asset Renewal Program (ARP) for its navigation infrastructure and facilities. The 50 ARP projects and equipment included in the SLSDC's ARP will focus on improving aging Seaway infrastructure, conducting maintenance dredging, investing in new technologies, purchasing new equipment, and refurbishing old facilities. The ARP marks the first time in the Seaway's history that a coordinated effort to repair and modernize the U.S. Seaway infrastructure has taken place. None of these investments will result in increases to the authorized depth or width of the navigation channel or to the size of the two existing U.S. locks.

The SLSDC developed its ARP to address the long-term asset renewal needs of the U.S. Seaway infrastructure. A perpetual infrastructure asset, such as a lock, needs a capital investment equivalent to its original cost over its design life, which is typically 50 years, in order to sustain itself. The U.S. portion of the St. Lawrence Seaway was built in the late 1950s at an original cost of $130 million. Prior to the start of the ARP in FY 2009, only $47 million (nominal) in capital expenditures had been invested in the U.S. Seaway locks since they opened in 1959.

The SLSDC's ARP closely coordinates with infrastructure renewal work completed or planned by the Canadian SLSMC and supports the engineering considerations highlighted in the November 2007 binational *Great Lakes St. Lawrence Seaway Study*. The study, which was completed with the support of the U.S. Army Corps of Engineers (USACE), Transport Canada, Environment Canada, U.S. Fish and Wildlife Service, and DOT's Office of the Secretary, SLSDC, and Maritime Administration, evaluated the infrastructure needs of the U.S. and Canadian Great Lakes Seaway System and assessed the economic, environmental, and engineering implications of those needs pertaining to commercial navigation. As part of its ARP planning and implementation processes, the SLSDC is working closely with the SLSMC and USACE to leverage their expertise.

An individual system delay or series of delays/shutdowns would seriously jeopardize the Great Lakes Seaway System's global competitiveness for the movement of agricultural and steel-related products. Although the Seaway has enjoyed a 99 percent reliability rate over its history, similar results in the future are uncertain with an aging infrastructure that has not been adequately renewed. In the competitive global market for commercial transportation, a system delay could force Seaway customers to seek alternative maritime routes and other transportation modes.

Unlike many of the other lock-based waterway systems in the world, which have twinned locks to ensure continued operations in the event of a lock failure, the St. Lawrence Seaway is a single-lock system. A delay or shutdown to any one of the 15 U.S. or Canadian Seaway locks would cause system-wide delays. In 1985, a lock failure at the Canadian Welland Canal caused 53 commercial vessels to be trapped in the Seaway System for 24 days at a cost to the shippers of more than $24 million.

Original ARP baseline project estimates were developed by the SLSDC using 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 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.

Although the majority of ARP work will be completed by outside contractors, the SLSDC will utilize its own workforce for several of the maintenance-related projects as well as for completing much of the pre-contract work, including preparation of designs, specifications, and drawings.

Without sufficient investment in the SLSDC's perpetual assets, the future availability and reliability of the U.S. section of the St. Lawrence Seaway would be in jeopardy. The Seaway has enjoyed a 99 percent reliability rate over its history, but similar results in the future are uncertain with an aging infrastructure quickly approaching the end of its original design life. Adequate capital reinvestment in the Seaway infrastructure is critical to maintaining its exceptional reliability record.

Since proposing the ARP in early 2008, the SLSDC has taken several steps to ensure the successful execution of the decade-long plan. For example, the agency has developed an internal team to ensure the ARP is executed properly and efficiency, and utilized innovative contracting vehicles prior to the start of the ARP to provide Seaway officials with an expedited process to contract for project support.

Seaway ARP Internal Working Group – In 2008, the SLSDC created the Seaway ARP Internal Working Group, 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. The group convenes every two weeks to review the status of on-going projects and to collectively discuss ways to improve the overall management, execution, and reporting of the program.

Indefinite Delivery Contracts – 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, and drawings.

To that end, the SLSDC awarded indefinite delivery contracts to three A/E firms to support the ARP. 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 2009 Update

Although Year One (FY 2009) funding for the ARP was not made available until the end of March, the SLSDC expects to fully obligate the enacted $17.5 million for the 17 ARP projects prior to September 30. As of May 26, the SLSDC has obligated $1.8 million on ARP initiatives. Major ARP lock projects to be obligated in FY 2009, including culvert valve and miter gate upgrades, will be completed during the winter months following the 2009 and/or 2010 navigation seasons due to long lead times for ordering equipment and machinery.

The only reportable change to the original ARP Year One estimates included in the 2009 budget request relates to the rehabilitation of the miter gates at the two U.S. locks. The original plan was to fund the rehabilitation of a downstream miter gate (ARP Project No. 2) in FY 2009 at an estimated cost of $1.5 million. Since the original proposal, SLSDC engineers have instead opted to rehabilitate an upstream miter gate at the same cost (ARP Project No. 31). Actual work is expected to occur during the winter months following the 2010 navigation season. With this change, the two downstream gates are now projected to be funded in FYs 2010 and 2011, with the remaining upstream gate funded in FY 2012.

Related to projects that were proposed for FY 2010 and beyond in the FY 2009 request, the SLSDC has revised costs associated with the Seaway International Bridge structural rehabilitation and corrosion prevention project (ARP Project No. 6) and costs and dates related to the installation of vacuum mooring systems at the two U.S. locks (ARP Project No. 23).

Seaway International Bridge – Recent estimates from the Bridge Project Manager for the three-year project are significantly higher than the original projections included in the FY 2009 budget request. The SLSDC's portion of the project is now estimated at $12.4 million as compared to the original estimate of $10.6 million. Estimates are higher due to increases for compliance with environmental requirements/best practices. Project bids are expected in the next 2-4 months, which will provide even more accurate estimates.

Vacuum Mooring System – This two-year ARP project, based on new technology for holding vessels in place while they are in the lock chamber, was originally proposed for FYs 2010-11 at a total cost of $3.3 million. The Canadian SLSMC has been testing the system at its Welland Canal locks over the past several navigation seasons with limited success. The SLSMC will

conclude its research and development on this technology over the next two years. It is expected that final implementation of the vacuum mooring system may require four vacuum units per lock as opposed to the original plan of two per lock. Due to the delays in implementing the new system at the Canadian locks, the SLSDC has deferred this project beyond FY 2014 toward the end of the ARP and estimates are expected to be 2-3 times higher than originally proposed.

FY 2010 and beyond

The SLSDC's FY 2010 budget request included the *U.S. St. Lawrence Seaway Asset Renewal Program Capital Investment Plan (CIP) – FYs 2010-2014*. The ARP/CIP highlighted 41 projects and equipment estimated at $92.2 million for the five-year period, 32 of which are multi-year projects, 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) *(see appendix for five-year schedule, cost estimates, and project descriptions)*. It is also important to note that dollar amounts for ARP projects are "project feasibility" 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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U.S. Seaway Asset Renewal Program FY 2010-2014

Project No.	Project Title	Type of Project (1)	Mission Objective (2)	Time Work Completed (3)	FY 2010 Request	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	Five Year Total
2	Both Locks - Rehabilitate Downstream Miter Gates	MP	L	Winter	$1,508,000	$1,515,000				**$3,023,000**
3	Both Locks - Rehabilitate Mooring Buttons, Pins, and Concrete Along Guidewalls and Guardwalls	MP	L	Other	$251,000	$253,000				**$504,000**
4	Both Locks - Culvert Valve Machinery - Upgrade to Hydraulic Operation	CP	L	Winter		$2,020,000				**$2,020,000**
5	Both Locks - Rehabilitate and Insulate Winter Maintenance Lock Covers	CP	L	Other		$253,000				**$253,000**
6	Seaway International Bridge - Perform Structural Rehabilitation and Corrosion Prevention	MP	T/B	Other	$5,773,000	$4,666,000				**$10,439,000**
7	Both Locks - Culvert Valves - Replace with Single Skin Valves	CP	L	Other	$603,000	$606,000	$609,000			**$1,818,000**
8	Floating Navigational Aids - Replace	CP	W	Other	$60,000	$61,000	$61,000	$61,000	$62,000	**$305,000**
9	Corporation Equipment - Replace Heavy and Light Equipment, Maintenance Vehicles and Shop Equipment	CE	L, W	Other	$251,000	$253,000	$254,000	$255,000	$256,000	**$1,269,000**
10	Both Locks - Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	MP	L	Other	$75,000	$76,000	$20,000	$20,000	$21,000	**$212,000**
11	Fixed Navigational Aids - Rehabilitate	MP	W	Other	$201,000	$202,000	$203,000	$204,000	$205,000	**$1,015,000**
12	Corporation Equipment - Upgrade/Replace Floating Plant	CP	L, W	Other	$503,000	$505,000	$1,523,000		$18,455,000	**$20,986,000**
13	Corporation Facilities - Replace Roofs	CP	F	Other		$91,000	$102,000	$122,000	$154,000	**$469,000**
14	Corporation Facilities - Replace Paving and Drainage Infrastructure	CP	L, F	Other	$1,508,000	$1,515,000		$1,530,000		**$4,553,000**
15	Eisenhower Lock - Highway Tunnel - Rehabilitate	MP	T/B	Other		$253,000		$255,000		**$508,000**
16	Seaway System - Upgrade GPS/AIS/TMS Technologies	CP	W	Other		$101,000		$102,000		**$203,000**
18	Eisenhower Lock - Vertical Lift Gate - Replace Wire Ropes	MP	L	Winter	$503,000					**$503,000**
19	Corporation Facilities - Upgrade Electrical Distribution Equipment	CP	L, F	Other	$151,000	$152,000				**$303,000**
20	Both Locks - Upgrade Lock Status/Controls	CP	L	Other	$151,000	$152,000				**$303,000**
21	Both Locks - Compressed Air Systems - Upgrade/Replace	CP	L	Other	$1,508,000	$1,515,000				**$3,023,000**
22	Both Locks - Install Vessel Self Spotting Equipment	CP	L	Other	$251,000	$253,000				**$504,000**
24	Both Locks - Structural Repair - Grout Leaks in Galleries and Recesses	MP	L	Other	$201,000		$203,000			**$404,000**
25	Corporation Facilities - Upgrade/Replace Fire Alarm/Protection Systems	CP	F	Other	$101,000		$102,000			**$203,000**
26	Corporation Facilities - Upgrade Storage for Lock Spare Parts	CP	L, F	Other	$201,000		$203,000		$205,000	**$609,000**
27	Corporation Facilities - Replace Windows and Doors and Repair Building Facades	MP	F	Other	$201,000		$203,000		$205,000	**$609,000**
28	Snell Lock - Walls, Sills and Culverts - Rehabilitate Concrete	MP	L	Winter		$2,020,000		$2,040,000		**$4,060,000**
29	Eisenhower Lock - Walls, Sills and Culverts - Rehabilitate Concrete	MP	L	Winter	$2,010,000		$2,030,000			**$4,040,000**

U.S. Seaway Asset Renewal Program FY 2010-2014

Project No.	Project Title	Type of Project (1)	Mission Objective (2)	Time Work Completed (3)	FY 2010 Request	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	Five Year Total
30	Eisenhower Lock - Ice Flushing System - Upgrade	CP	L	Other		$202,000				**$202,000**
31	Both Locks - Rehabilitate Upstream Miter Gates	MP	L	Winter			$1,523,000			**$1,523,000**
32	Snug Harbor - Rehabilitate Spare Gate Storage and Assembly Area	MP	L	Other		$253,000	$254,000	$255,000		**$762,000**
33	Both Locks - Upgrade Drainage Infrastructure in Galleries and Recesses	CP	L	Other		$152,000	$152,000	$153,000	$154,000	**$611,000**
34	Both Locks - Improve Ice Control	CP	L	Winter		$101,000	$228,000	$230,000	$231,000	**$790,000**
35	Vessel Mooring Cells - Rehabilitate and Extend	CP	W	Other		$1,010,000			$1,025,000	**$2,035,000**
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			$761,000			**$761,000**
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			$1,523,000	$1,530,000		**$3,053,000**
41	Snell Lock - Install Ice Flushing System Technologies	CP	L	Winter			$5,075,000	$5,101,000		**$10,176,000**
42	Both Locks - Miter Gates - Structural Rehabilitation	MP	L	Winter			$761,000	$765,000	$513,000	**$2,039,000**
43	Both Locks - Miter Gate Machinery - Upgrade/Replace	CP	L	Winter				$1,632,000		**$1,632,000**
44	Both Locks - Ship Arrestor Machinery - Upgrade/Replace	CP	L	Winter					$410,000	**$410,000**
---	Engineering Design, Construction Inspection, Contracting Support, and Project Management	CP	ALL	Other	$306,000	$312,000	$318,000	$324,000	$330,000	**$1,590,000**
	Total				**$16,317,000**	**$18,492,000**	**$19,864,000**	**$15,293,000**	**$22,226,000**	**$92,192,000**

(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 Upgrade and Maintenance

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

Note: Dollar amounts for ARP projects are "project feasibility" estimates and have an industry-recognized contingency of 20-30 percent

U.S. SEAWAY ASSET RENEWAL PROGRAM

PROJECT DESCRIPTIONS

FYs 2010-2014

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.

(Note: ARP projects listed below are those scheduled for funding in FYs 2010-14. Projects not included in this listing were either funded in FY 2009 or are scheduled to be funded in FY 2015 and/or beyond).

Project No. 2: Both Locks – Rehabilitate Downstream Miter Gates (Non-Capital Maintenance Project) (FYs 2010 and 2011 -- $3,023,000) – This project is to completely rehabilitate the miter gates at the downstream end of both Eisenhower and Snell Locks. It includes replacing worn and/or damaged components including the miter and quoin contact blocks, pintles, gate anchorages and diagonals to insure proper functioning of the miter gates.

Project No. 3: Both Locks – Rehabilitate Mooring Buttons, Pins and Concrete along Guidewalls and Guardwalls (Non-Capital Maintenance Project) (FYs 2010 and 2011 -- $504,000) – This project is to rehabilitate the upstream and downstream approach walls at both Eisenhower and Snell 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 would include pinning dislodged lifts, repairing damaged concrete and raising mooring buttons that have settled to improve the serviceability of the approach walls. *(Project started in FY 2009)*

Project No. 4: Both Locks – Culvert Valve Machinery – Upgrade to Hydraulic Operation (Capital Project) (FY 2011 -- $2,020,000) – This project is for replacing the operating machinery for the Eisenhower and Snell Lock culvert valves, which are utilized for filling and emptying the locks. This machinery is nearly 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. *(Project started in FY 2009)*

Project No. 5: Both Locks – Rehabilitate and Insulate Winter Maintenance Lock Covers (Capital Project) (FY 2011 -- $253,000) – 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 insulating them would save on funds used to heat work areas when required for such temperature sensitive projects as placing concrete and painting steel structures. *(Project started in FY 2009)*

Project No. 6: Seaway International Bridge – Perform Structural Rehabilitation and Corrosion Prevention (Non-Capital Maintenance Project) (FYs 2010 and 2011 -- $10,439,000) – This project is for rehabilitation of the structural components of the south span of the 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 for 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 of the 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 south span. *(Project started in FY 2009)*

Project No. 7: Both Locks – Culvert Valves – Replace with Single Skin Valves (Capital Project) (FYs 2010, 2011, and 2012 -- $1,818,000) – This project is for replacing the double skin culvert valves utilized for filling and emptying both Eisenhower and Snell Locks with single skin valves. Cracking of major structural members have occurred and with the double skin construction, the structural members are not accessible for inspection, blast cleaning and painting. The culvert valves are nearly 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. Depending 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. *(Project started in FY 2009)*

Project No. 8: Floating Navigational Aids – Upgrade/Replace (Capital Project) (FYs 2010, 2011, 2012, 2013, and 2014 -- $305,000) (Additional costs anticipated beyond FY 2014) – 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. *(Project started in FY 2009)*

Project No. 9: Corporation Equipment – Replace Heavy and Light Equipment, Maintenance Vehicles and Shop Equipment (Capital Equipment) (FYs 2010, 2011, 2012, 2013, and 2014 -- $1,269,000) (Additional costs anticipated beyond FY 2014) – 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. *(Project started in FY 2009)*

Project No. 10: Both Locks – Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities (Non-Capital Maintenance Project) (FYs 2010, 2011, 2012, 2013, and 2014 -- $212,000) (Additional costs anticipated beyond FY 2014) – 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 nearly 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. *(Project started in FY 2009)*

Project No. 11: Fixed Navigational Aids – Rehabilitate (Non-Capital Maintenance Project) (FYs 2010, 2011, 2012, 2013, and 2014 -- $1,015,000) (Additional costs anticipated beyond FY 2014) – This project is for rehabilitating fixed navigational aids in the Seaway. Many of the structures are nearing 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 will have to be 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. *(Project started in FY 2009)*

Project No. 12: Corporation Equipment – Upgrade/Replace Floating Plant (Capital Project) (FYs 2010, 2011, 2012, and 2014 -- $20,986,000) (Additional costs anticipated beyond FY 2014) – 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 also includes replacing the tug and buoy tender barge; purchasing a smaller tug for more efficient operations where the capabilities of the larger tug are not required, as well as a small boat for emergency response and a small scow for transporting dredged spoil from emergency/ spot dredging; and rehabilitating the Corporation's crane barge/gatelifter, which would have to be utilized if a miter gate was damaged and had to be replaced. *(Project started in FY 2009)*

Project No. 13: Corporation Facilities – Replace Roofs (Capital Project) (FYs 2011, 2012, 2013, and 2014 -- $469,000) (Additional costs anticipated beyond FY 2014) – This project is for replacing the roofs on the Corporation's various buildings and facilities in Massena, N.Y., as required. Most of the roofs are currently insulated ethylene propylene diene monomer (EPDM) roofs with a service life of 15-20 years and have reached the end of that time frame. *(Project started in FY 2009)*

Project No. 14: Corporation Facilities – Replace Paving and Drainage Infrastructure (Capital Project) (FYs 2010, 2011, and 2013 -- $4,553,000) (Additional costs anticipated beyond FY 2014) – This project is for improving the pavement and drainage along lock approach walls, Corporation roadways and public parking and work areas at all Corporation

facilities. In Upstate New York, the damage to pavements caused by winter conditions is significant and if repairs are not made before the damage is too severe, complete replacement of the pavement down to and often including the base materials is required at a much higher cost. *(Project started in FY 2009)*

Project No. 15: Eisenhower Lock Highway Tunnel – Rehabilitate (Non-Capital Maintenance Project) (FYs 2011 and 2013 -- $508,000) (Additional costs anticipated beyond FY 2014) – 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 the New York Power Authority's Robert Moses Power Project and to the New York State Park on Barnhart Island. This project includes 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. *(Project started in FY 2009)*

Project No. 16: Seaway System – Upgrade GPS/AIS/TMS Technologies (Capital Project) (FYs 2011 and 2013 -- $203,000) (Additional costs anticipated beyond FY 2014) – 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. *(Project started in FY 2009)*

Project No. 18: Eisenhower Lock – Vertical Lift Gate – Replace Wire Ropes (Non-Capital Maintenance Project) (FY 2010 -- $503,000) – 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.

Project No. 19: Corporation Facilities – Upgrade Electrical Distribution Equipment (Capital Project) (FYs 2010 and 2011 -- $300,000) – 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 nearly 50 years old.

Project No. 20: Both Locks – Upgrade Lock Status/Controls (Capital Project) (FYs 2010 and 2011 -- $303,000) – 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.

Project No. 21: Both Locks – Compressed Air Systems – Upgrade/Replace (Capital Project) (FYs 2010 and 2011 -- $3,023,000) – This project is for replacing the compressors and corroded piping at both Eisenhower and Snell Locks which provides 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.

Project No. 22: Both Locks – Install Vessel Self Spotting Equipment (Capital Project) (FYs 2010 and 2011 -- $504,000) – This project is for installing equipment at both Eisenhower and Snell Locks such that transiting vessels can spot/locate themselves in the lock. This new technology, once fully implemented, will reduce labor costs for locking vessels. The Canadian Seaway agency has been testing this new technology at one of their locks.

Project No. 24: Both Locks – Structural Repair – Grout Leaks in Galleries and Recesses (Non-Capital Maintenance Project) (FYs 2010 and 2012 -- $404,000) – This project is for grouting cracks/joints in the concrete in the galleries and recesses at both Eisenhower and Snell Locks to reduce the infiltration of water into these areas. Water leaking into these areas accelerates the corrosion of the components/ machinery and makes it difficult to perform maintenance on these items.

Project No. 25: Corporation Facilities – Upgrade/Replace Fire Alarm/Protection Systems (Capital Project) (FYs 2010 and 2012 -- $203,000) – This project if for replacing antiquated fire alarm and fire protection systems at Corporation facilities.

Project No. 26: Corporation Facilities – Upgrade Storage for Lock Spare Parts (Capital Project) (FYs 2010, 2012, and 2014 -- $609,000) – This project is for constructing shelters for storage of lock spare parts to prevent them from corroding prior to their use. 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.

Project No. 27: Corporation Facilities – Replace Windows and Doors and Repair Building Facades (Non-Capital Maintenance Project) (FYs 2010, 2012, and 2014 -- $609,000) (Additional costs anticipated beyond FY 2014) – 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.

Project No. 28: Snell Lock – Walls, Sills and Culverts – Rehabilitate Concrete (Non-Capital Maintenance Project) (FYs 2011 and 2013 -- $4,060,000) (Additional costs anticipated beyond FY 2014) – This project is to replace deteriorated/ damaged concrete at Snell Lock in all areas except the diffusers. This includes 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 deteriorated/damaged concrete.

Project No. 29: Eisenhower Lock – Walls, Sills and Culverts – Rehabilitate Concrete (Non-Capital Maintenance Project) (FYs 2010 and 2012 -- $4,040,000) (Additional costs anticipated beyond FY 2014) – 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.

Project No. 30: Eisenhower Lock – Ice Flushing System – Upgrade (Capital Project) (FY 2011 -- $202,000) – This project is for making improvements to the ice flushing system at Eisenhower Lock. This system was installed in the early 1980's and is utilized for flushing ice from the lock chamber to make room for a vessel and to prevent/minimize damage to the vessel and the lock structures/ components.

Project No. 31: Both Locks – Rehabilitate Upstream Miter Gates (Non-Capital Maintenance Project) FY 2012 -- $1,523,000) – 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, gate anchorages and diagonals to insure proper functioning of the miter gates. *(Project started in FY 2009)*

Project No. 32: Snug Harbor – Rehabilitate Spare Gate Storage and Assembly Area (Non-Capital Maintenance Project) (FYs 2011, 2012, and 2013 -- $762,000) – This project is for rehabilitating the spare miter gate storage and assembly area at Snug Harbor. The work will include repair of the spare gate assembly pads and their supporting piles and blast cleaning and painting of the spare miter gates and gate assembly towers.

Project No. 33: Both Locks – Upgrade Drainage Infrastructure in Galleries and Recesses (Capital Project) (FYs 2011, 2012, 2013, and 2014 -- $611,000) – This project is to open existing drains or to drill new ones in the galleries and machinery recesses at both Eisenhower and Snell Locks. The drains are being filled up with concrete leachate products which slow and/or stop the drains causing flooding of the galleries and machinery recesses.

Project No. 34: Both Locks – Improve Ice Control (Capital Project) (FYs 2011, 2012, 2013, and 2014 -- $790,000) (Additional costs anticipated beyond FY 2014) – This project is to improve the methods/equipment utilized to control ice in and around Eisenhower and Snell Locks during the opening and closing of each navigation season. Currently air curtains and bubblers are utilized to minimize the ice entering a lock chamber and to move it away from the miter gates and backhoes are used for removing ice from the lock walls, which reduces the width available for transiting vessels. Improvements to existing systems/equipment as well as utilizing new technologies would make operations during times when there is ice in the water more efficient and would minimize damages to the lock components and transiting vessels.

Project No. 35: Vessel Mooring Cells – Rehabilitate and Extend (Capital Project) (FYs 2011 and 2014 -- $2,035,000) (Additional costs anticipated beyond FY 2014) – This project is for rehabilitating and extending the vessel mooring cells upstream of Eisenhower Lock and in the Intermediate Pool between the locks. These mooring cells are available for vessels with problems to tie to until the problems can be corrected and/or for vessels to tie to for inspections. The existing cells are almost 50 years old, are in a state of disrepair and are too short for current Seaway length vessels.

Project No. 36: Eisenhower Lock – Diffusers – Replace (Non-Capital Maintenance Project) (FY 2012 -- $3,045,000) – This project is to replace deteriorated/damaged concrete in the diffusers at Eisenhower Lock. This includes concrete that was of poor quality when placed during original construction and 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 and this project would be for removal and replacement of these structures.

Project No. 37: Eisenhower Lock – Construct Drydock for Vessel Maintenance (Capital Project) (FY 2012 -- $761,000) – This project is for constructing a drydock in Eisenhower Lock so that repairs to the Corporation's floating plant can be made on site. Because a lock is dewatered in the winter, it could serve as a drydock by installing a floor and some pedestals/ blocking in a section of the lock to accommodate the Corporation's vessels. This would save the cost of transporting vessels to a drydock typically located in the Great Lakes and the daily rate for having a vessel in that drydock.

Project No. 38: Both Locks – Upgrade/Replace Emergency Generators (Capital Project) (FYs 2012 and 2013 -- $1,018,000) – This project is for replacing the emergency generators at both Eisenhower and Snell Locks and for installing one of those removed from the locks at the Maintenance Facility. The generators at the locks are over 20 years old and will not carry the total load. It is sometimes necessary to eliminate some of the load to insure that the generators will run. Also, installing one of these units at the Maintenance Facility with an automatic transfer switch will insure that if the power goes out, water lines will not freeze and break and it will enable maintenance activities to continue.

Project No. 39: Both Locks – Dewatering Pumps – Upgrade Outdated Equipment (Capital Project) (FYs 2012 and 2013 -- $407,000) – This project is for replacing the pumps used for dewatering both Eisenhower and Snell Locks for maintenance of their underwater components. These pumps are nearly 50 years old and parts for these units are no longer available.

Project No. 40: Both Locks – Extend Guidewalls in Pool (Capital Project) (FYs 2012 and 2013 -- $3,053,000) – This project is for extending the downstream guidewall at Eisenhower Lock and the upstream guidewall at Snell Lock. These approach walls were part of the original construction and are too short for mooring maximum Seaway length vessels.

Project No. 41: Snell Lock – Install Ice Flushing System Technologies (Capital Project) (FYs 2012 and 2013 -- $10,176,000) – 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.

Project No. 42: Both Locks – Miter Gates – Structural Rehabilitation (Non-Capital Maintenance Project) (FYs 2012, 2013, and 2014 -- $2,039,000) (Additional costs anticipated beyond FY 2014) – This project is to blast clean and treat the upstream and downstream miter gates at both Eisenhower and Snell Locks to prevent further corrosion of these structures. They were last treated over 20 years ago.

Project No. 43: Both Locks – Miter Gate Machinery – Upgrade/ Replace (Capital Project) (FY 2013 -- $1,632,000) (Additional costs anticipated beyond FY 2014) – This project is for replacing the operating machinery for the miter gates at both Eisenhower and Snell Locks. This machinery is nearly 50 years old and needs to be upgraded to insure its continued reliability. The upgrade will include new hydraulic operating equipment to match the upgrades made at the Canadian Seaway locks and the other locks in the United States.

Project No. 44: Both Locks – Ship Arrestor Machinery – Upgrade/Replace (Capital Project) (FY 2014 -- $410,000) (Additional costs anticipated beyond FY 2014) – This project is for replacing the operating machinery for the ship arrestors at both Eisenhower and Snell Locks. The ship arrestors protect the miter gates from damage that would be caused if a vessel had a malfunction such that it was unable to stop and struck a miter gate. This operating machinery is nearly 50 years old and needs to be upgraded to insure its continued reliability.

Engineering Design, Construction Inspection, Contracting Support, and Project Management (Capital Project) (FYs 2010, 2011, 2012, 2013, and 2014 -- $1,590,000) (Additional costs anticipated beyond FY 2014) – To accomplish all of the ARP projects, the SLSDC will require additional engineering design support, construction inspectors to monitor and insure the quality of the work, and contracting specialists to handle the increase in contract work.

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