



U.S. Department of  
Transportation

# **BUDGET ESTIMATES FISCAL YEAR 2016**

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## **SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**

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SUBMITTED FOR THE USE OF  
THE COMMITTEES ON APPROPRIATIONS



**U.S. DEPARTMENT OF TRANSPORTATION  
SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION  
FY 2016 BUDGET REQUEST**

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# **Saint Lawrence Seaway Development Corporation**

## **Budget Overview**

### **FY 2016 Budget Request**

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For Fiscal Year (FY) 2016, the Saint Lawrence Seaway Development Corporation (SLSDC) is requesting an appropriation from the Harbor Maintenance Trust Fund of \$36.4 million to fund the operations and maintenance of the U.S. portion of the St. Lawrence Seaway (\$18.250 million) as well as projects supporting the Seaway's Asset Renewal Program (ARP) (\$18.150 million).

At the FY 2016 request level, the SLSDC will be able to perform its core mission of serving the U.S. intermodal and international transportation system while providing a safe, reliable, efficient, and environmentally responsible deep-draft waterway, in cooperation with its Canadian counterpart, the St. Lawrence Seaway Management Corporation (SLSMC). Primary activities include U.S. lock operations and maintenance, vessel traffic control, vessel safety and environmental inspections, trade promotion and economic development, and capital infrastructure renewal.

SLSDC programs and activities are principally focused on the Department's "Economic Competitiveness" performance measure of meeting the 99 percent or better goal for U.S. Seaway sector reliability. The SLSDC is directly responsible for ensuring the safe, efficient, and secure passage of commercial vessels through the St. Lawrence Seaway, and it has consistently maintained a 99 percent reliability rate. The SLSDC's ARP activities support the Department's strategic goal of "State of Good Repair".

The St. Lawrence Seaway directly serves an eight-state, two-province region that accounts for one-quarter of the U.S. gross domestic product (GDP), one-half of North America's manufacturing and services industries, and is home to nearly one-quarter of the continent's population. The Great Lakes region is the world's fourth largest economy with annual economic output of nearly \$5 trillion.

Since the 15-lock binational waterway's opening in 1959, nearly 3 billion metric tons of cargo has moved on the St. Lawrence Seaway valued at \$400 billion. Additionally, maritime commerce on the Great Lakes Seaway System provides shippers with approximately \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation.<sup>1</sup>

The waterway also produces significant economic benefits to the Great Lakes region. In fact, an economic impact study concluded that maritime commerce on the Great Lakes Seaway System sustains 227,000 U.S. and Canadian jobs, \$35 billion in transportation-related business revenue, \$14 billion in personal income, and \$5 billion in federal, state, provincial, and local taxes each year.<sup>2</sup>

In addition, Great Lakes Seaway System ships remain more fuel-efficient and emit fewer greenhouse gases per thousand cargo-ton miles than land-based alternatives.<sup>3</sup> The Great

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<sup>1</sup> *Great Lakes Navigation System: Economic Strength to the Nation*, U.S. Army Corps of Engineers, January 2009.

<sup>2</sup> *The Economic Impacts of the Great Lakes St. Lawrence Seaway System*, Martin Associates, October 2011.

<sup>3</sup> *The Environmental and Social Impacts of Marine Transport in the Great Lakes-St. Lawrence Seaway Region*, Research and Traffic Group, January 2013.

Lakes/Seaway fleet is nearly 7 times more fuel-efficient than trucks and 1.14 times more fuel-efficient than rail. Moreover, it would take 3 million railcars or 7.1 million trucks to carry the total cargo transported by the Great Lakes/Seaway fleet. The SLSDC remains dedicated to promoting the economic and environmental benefits of the marine mode, attracting new cargoes to the Seaway, and leveraging technology to enhance the system's performance and safety.

#### Agency Operations (pages 22-29)

The SLSDC is requesting \$18.250 million and 144 full-time equivalents (FTEs) for the SLSDC's Agency Operations program in FY 2016. The request represents an increase of \$508,000 compared to the FY 2015 enacted level with no requested change to the FTE level. The increase is made up of baseline increases (\$258,000) and program changes (\$250,000).

The program increase is to fund the estimated annual operational expenses of \$250,000 for the SLSDC's accounting system at the U.S. Department of Interior. The SLSDC is expected to complete its financial management system migration to Interior's Federal Shared Service Provider (FSSP) system in the last quarter of FY 2015. The FY 2016 Agency Operations program budget request is the first in 13 years to include program increases; recent budget requests have only included baseline increases.

#### Asset Renewal Program (pages 30-38)

The ARP, which started in FY 2009, addresses the SLSDC's infrastructure needs for the two U.S. Seaway locks, the Seaway International Bridge, maintenance dredging, operational systems, and Corporation facilities and equipment. The program marks the first time in the Seaway's 50-year history that a coordinated effort to repair and modernize the U.S. Seaway infrastructure has taken place. None of the ARP investments result in increases to the authorized depth or width of the navigation channel or to the size of the two locks.

The \$18.150 million included in the FY 2016 budget request to fund five SLSDC ARP projects (*see pages 36-38 for FY 2016 ARP projects and descriptions*). There are two major ARP projects scheduled for funding in FY 2016: (1) the second year of a four-year, \$24.8 million effort to replace the SLSDC's two tugboats – *Robinson Bay* and *Performance* (\$10 million); and (2) the installation of a hands-free vessel mooring system at Snell Lock to match the system that will be installed at Eisenhower Lock and the 13 Canadian Seaway locks (\$8 million). These projects represent two of the largest remaining projects in the ARP.

Without the necessary funding to complete these two highly visible projects, the SLSDC jeopardizes its strong and historic record on safety (tug replacement) and lock transit efficiency (hands-free mooring system). None of these projects can be further divided into smaller funding levels over multiple years.

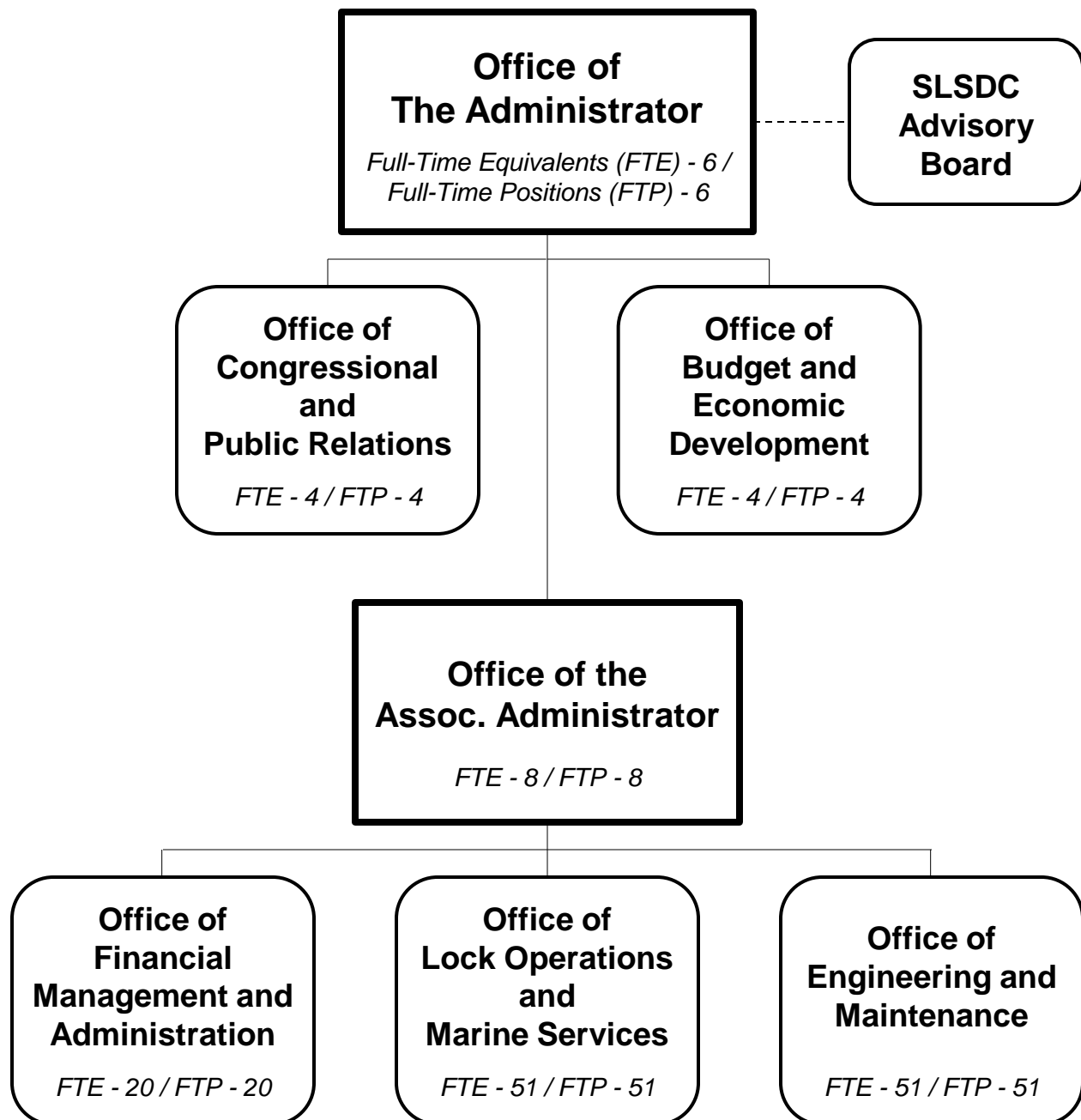


# Saint Lawrence Seaway Development Corporation

## Organization Chart

### FY 2015 FTE/FTP Estimates

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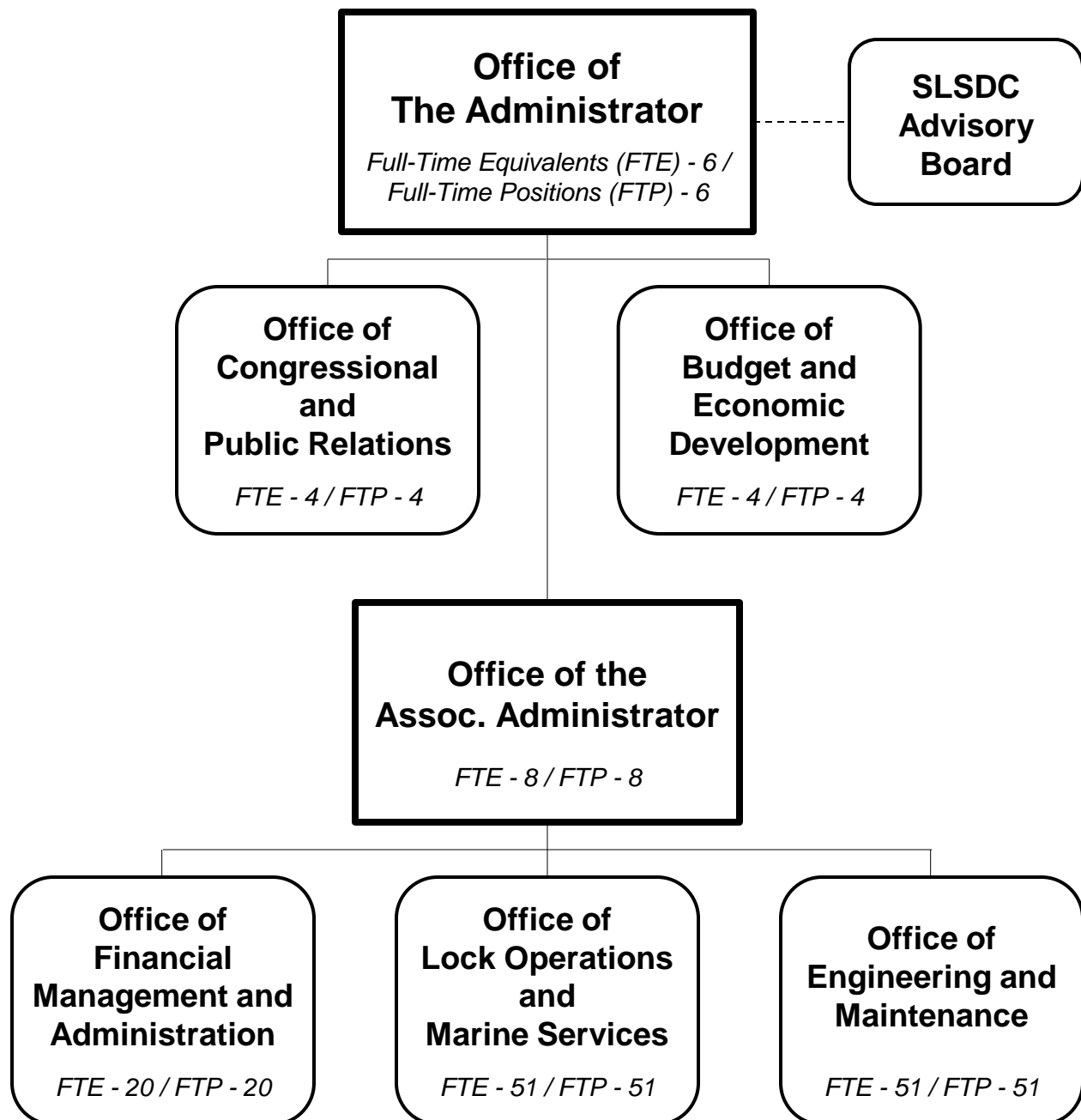


# Saint Lawrence Seaway Development Corporation

## Organization Chart

### FY 2016 FTE/FTP Estimates

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## Budget Summary Tables



**EXHIBIT II-1**  
**FY 2016 COMPARATIVE STATEMENT OF NEW BUDGET AUTHORITY**  
**Saint Lawrence Seaway Development Corporation**  
**Appropriations**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>FY 2014 ACTUAL</u>	<u>FY 2015 ENACTED</u>	<u>FY 2016 REQUEST</u>
Operations and Maintenance - HMTF (69-8003)	\$31,000	\$32,042	\$36,400
	-----	-----	-----
<b>TOTAL APPROPRIATIONS:</b>	<b>\$31,000</b>	<b>\$32,042</b>	<b>\$36,400</b>

**EXHIBIT II-2**  
**FY 2016 TOTAL BUDGETARY RESOURCES BY APPROPRIATIONS ACCOUNT**  
**Saint Lawrence Seaway Development Corporation**  
**Appropriations**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>FY 2014 ACTUAL</u>	<u>FY 2015 ENACTED</u>	<u>FY 2016 REQUEST</u>
Operations and Maintenance - HMTF (69-8003)	\$31,000	\$32,042	\$36,400
	-----	-----	-----
<b>TOTAL APPROPRIATIONS:</b>	<b>\$31,000</b>	<b>\$32,042</b>	<b>\$36,400</b>

**EXHIBIT II-3**  
**FY 2016 BUDGET REQUEST BY DOT STRATEGIC AND PERFORMANCE GOALS**  
**Saint Lawrence Seaway Development Corporation**  
**Appropriations**  
**(\$000)**

	<b><u>FY 2014</u></b> <b><u>ACTUAL</u></b>	<b><u>FY 2015</u></b> <b><u>ENACTED</u></b>	<b><u>FY 2016</u></b> <b><u>REQUEST</u></b>
<b><u>STRATEGIC AND PERFORMANCE GOALS</u></b>			
<b>ECONOMIC COMPETITIVENESS</b>			
<u>EC1: Enhance Productivity and Growth - Improve the contribution to the transportation system to the Nation's productivity and economic growth by supporting strategic, multi-modal investment decisions and policies that reduce costs, increase reliability and competition, satisfy consumer preferences more efficiently, and advance U.S. transportation interests worldwide.</u>			
Maintain the U.S. St. Lawrence Seaway system reliability at 99 percent.	\$15,850	\$17,742	\$18,250
Subtotal Performance Goal	\$15,850	\$17,742	\$18,250
<b>Total - Economic Competitiveness</b>			
<b>STATE OF GOOD REPAIR</b>			
<u>GR2: Improve Equipment and Facilities -- Improve the availability, reliability, and performance of the nation's transportation equipment and facilities by expediting the replacement or rehabilitation of equipment and facilities in poor condition.</u>			
[Measure under development]	\$15,150	\$14,300	\$18,150
Subtotal Performance Goal	\$15,150	\$14,300	\$18,150
<b>Total - State of Good Repair</b>			
<b>GRAND TOTAL</b>	<b>\$31,000</b>	<b>\$32,042</b>	<b>\$36,400</b>

**EXHIBIT II-3a**  
**FY 2016 BUDGET REQUEST BY DOT OUTCOMES**  
**Saint Lawrence Seaway Development Corporation**  
**(\$000)**

<b>DOT Outcome</b>	<b>Program</b>	<b>FY 2016 Request</b>
<b>ECONOMIC COMPETITIVENESS</b>		
Enhance Productivity and Growth (EC1)	SLSDC Agency Operations	\$18,250
<b>STATE OF GOOD REPAIR</b>		
Improve Equipment and Facilities (GR2)	SLSDC Asset Renewal Program	\$18,150
	<b>Total - Operations and Maintenance-HMTF (69-8003)</b>	<b>\$36,400</b>



**EXHIBIT II-4**  
**FY 2016 BUDGET AUTHORITY**  
**Saint Lawrence Seaway Development Corporation**  
**Appropriations**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>FY 2014 ACTUAL</u>	<u>FY 2015 ENACTED</u>	<u>FY 2016 REQUEST</u>
Operations and Maintenance - HMTF (69-8003)	\$31,000	\$32,042	\$36,400
	-----	-----	-----
<b>TOTAL APPROPRIATIONS:</b>	<b>\$31,000</b>	<b>\$32,042</b>	<b>\$36,400</b>

**EXHIBIT II-5**  
**FY 2016 OUTLAYS**  
**Saint Lawrence Seaway Development Corporation**  
**(\$000)**

<b><u>ACCOUNT NAME</u></b>	<b><u>FY 2014 ACTUAL</u></b>	<b><u>FY 2015 ENACTED</u></b>	<b><u>FY 2016 REQUEST</u></b>
SLSDC Fund (69x4089)	\$31,317	\$41,042	\$44,400
	-----	-----	-----
<b>TOTAL:</b>	<b>\$31,317</b>	<b>\$41,042</b>	<b>\$44,400</b>
 [Discretionary] (Operations and Maintenance-HMTF -- 69-8003)	 \$31,000	 \$32,042	 \$36,400
[Mandatory] (SLSDC Fund -- 69x4089)	\$317	\$9,000	\$8,000

**EXHIBIT II-6**  
**SUMMARY OF REQUESTED FUNDING CHANGES FROM BASE**  
**Saint Lawrence Seaway Development Corporation**  
**Appropriations**  
**(\$000)**

BASELINE CHANGES											
Operations and Maintenance - HMTF (69-8003)	FY 2014 Actual	FY 2015 Enacted	FY 2016 Pay Raises*	Annualization of 2015 Pay Raises	One Additional Comp. Day	Washington Office Rent	Working Capital Fund	Non-Pay Inflation	FY 2016 Baseline Estimate	Program Increases/ Decreases	FY 2016 Request
<b>PERSONNEL RESOURCES</b>	<b>131</b>	<b>144</b>									
Direct FTEs	131	144	-	-	-	-	-	-	144	-	144
<b>FINANCIAL RESOURCES</b>											
<b>ADMINISTRATIVE EXPENSES</b>											
Salaries and Benefits	\$3,514	\$3,528	\$26	\$5	\$9	\$0	\$0	\$0	\$3,568	\$0	\$3,568
Travel	\$54	\$54	\$0	\$0	\$0	\$0	\$0	\$0	\$54	\$0	\$54
Transportation of Things	\$2	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$2	\$0	\$2
Washington Office Rent	\$357	\$386	\$0	\$0	\$0	\$40	\$0	\$0	\$426	\$0	\$426
Communications, Rent & Utilities	\$41	\$41	\$0	\$0	\$0	\$0	\$0	\$0	\$41	\$0	\$41
Printing	\$10	\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$10	\$0	\$10
Working Capital Fund (WCF)	\$690	\$726	\$0	\$0	\$0	\$0	\$16	\$0	\$742	\$0	\$742
Supplies	\$25	\$25	\$0	\$0	\$0	\$0	\$0	\$0	\$25	\$0	\$25
Equipment	\$6	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$6	\$0	\$6
<b>Administrative Subtotal</b>	<b>\$4,699</b>	<b>\$4,778</b>	<b>\$26</b>	<b>\$5</b>	<b>\$9</b>	<b>\$40</b>	<b>\$16</b>	<b>\$0</b>	<b>\$4,874</b>	<b>\$0</b>	<b>\$4,874</b>
<b>PROGRAMS</b>											
Agency Operations	\$11,151	\$12,964	\$80	\$14	\$33	\$0	\$0	\$35	\$13,126	\$250	\$13,376
Asset Renewal Program (ARP)	\$15,150	\$14,300	\$0	\$0	\$0	\$0	\$0	\$0	\$14,300	\$3,850	\$18,150
<b>Programs Subtotal</b>	<b>\$26,301</b>	<b>\$27,264</b>	<b>\$80</b>	<b>\$14</b>	<b>\$33</b>	<b>\$0</b>	<b>\$0</b>	<b>\$35</b>	<b>\$27,426</b>	<b>\$4,100</b>	<b>\$31,526</b>
<b>TOTAL</b>	<b>\$31,000</b>	<b>\$32,042</b>	<b>\$106</b>	<b>\$19</b>	<b>\$42</b>	<b>\$40</b>	<b>\$16</b>	<b>\$35</b>	<b>\$32,300</b>	<b>\$4,100</b>	<b>\$36,400</b>

\* "FY 2016 Pay Raises" column includes \$55,000 for three-quarters of the proposed General Schedule (GS) pay increase of 1.3 percent and \$51,000 for a full year of the estimated Wage Grade (WG) pay increase of 1.0 percent.

**EXHIBIT II-7**  
**WORKING CAPITAL FUND**  
**Saint Lawrence Seaway Development Corporation**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>FY 2014 ACTUAL</u>	<u>FY 2015 ENACTED</u>	<u>FY 2016 REQUEST</u>	<u>CHANGE</u>
<b>DIRECT:</b>				
Operations and Maintenance - HMTF (69-8003)	\$686	\$725	\$741	\$16
	-----	-----	-----	-----
<b>TOTAL:</b>	<b>\$686</b>	<b>\$725</b>	<b>\$741</b>	<b>\$16</b>

**EXHIBIT II-8**  
**PERSONNEL RESOURCE -- SUMMARY**  
**TOTAL FULL-TIME EQUIVALENTS**  
**Saint Lawrence Seaway Development Corporation**

	<b><u>FY 2014</u></b> <b><u>ACTUAL</u></b>	<b><u>FY 2015</u></b> <b><u>ENACTED</u></b>	<b><u>FY 2016</u></b> <b><u>REQUEST</u></b>
<b><u>DIRECT FUNDED BY APPROPRIATION</u></b>			
Operations and Maintenance - HMTF (69-8003)	131	144	144
	-----	-----	-----
<b>TOTAL FTEs:</b>	<b>131</b>	<b>144</b>	<b>144</b>

**EXHIBIT II-9**  
**RESOURCE SUMMARY -- STAFFING**  
**FULL-TIME PERMANENT POSITIONS**  
**Saint Lawrence Seaway Development Corporation**

	<b><u>FY 2014</u></b> <b><u>ACTUAL</u></b>	<b><u>FY 2015</u></b> <b><u>ENACTED</u></b>	<b><u>FY 2016</u></b> <b><u>REQUEST</u></b>
<b><u>DIRECT FUNDED BY APPROPRIATION</u></b>			
Operations and Maintenance - HMTF (69-8003)	126	144	144
	-----	-----	-----
<b>TOTAL POSITIONS:</b>	<b>126</b>	<b>144</b>	<b>144</b>

**Budget Request  
by Account**





# **Operations and Maintenance (69-8003)**

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**APPROPRIATIONS LANGUAGE**

**DEPARTMENT OF TRANSPORTATION  
SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**

**TRUST FUNDS**

**OPERATIONS AND MAINTENANCE**

**(Harbor Maintenance Trust Fund)**

For necessary expenses to conduct the operations, maintenance, and capital asset renewal activities of those portions of the St. Lawrence Seaway owned, operated, and maintained by the Saint Lawrence Seaway Development Corporation, \$36,400,000, to be derived from the Harbor Maintenance Trust Fund, pursuant to Public Law 99-662.

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## EXHIBIT III-1

### OPERATIONS AND MAINTENANCE – HMTF (69-8003) SUMMARY BY PROGRAM ACTIVITY Appropriations, Obligation Limitations, and Exempt Obligations (\$000)

<u>Program Activity</u>	<u>FY 2014 ACTUAL</u>	<u>FY 2015 ENACTED</u>	<u>FY 2016 REQUEST</u>	<u>CHANGE FY 2015-16</u>
Agency Operations	\$15,850	\$17,742	\$18,250	\$ 508
Asset Renewal Program	15,150	14,300	18,150	3,850
	-----	-----	-----	-----
<b>Total</b>	<b>\$31,000</b>	<b>\$32,042</b>	<b>\$36,400</b>	<b>\$ 4,358</b>
<b>FTEs</b>	<b>131</b>	<b>144</b>	<b>144</b>	<b>0</b>

#### Program and Performance Statement

The FY 2016 budget request for the SLSDC includes \$36.4 million from the Harbor Maintenance Trust Fund (HMTF) to include general agency operations (\$18.250 million) as well as five capital and non-capital maintenance projects as part of the eighth year of funding for the SLSDC's multi-year Asset Renewal Program (ARP) (\$18.150 million) (*see pages 36-38 for FY 2016 ARP project estimates and descriptions*).

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 historically maintained a 99 percent availability rate. The SLSDC remains dedicated to promoting the economic and environmental benefits of the marine mode, attracting new cargoes to the Seaway, and leveraging technology to enhance the system's performance and safety.

**EXHIBIT III-1a**

**OPERATIONS AND MAINTENANCE – HMTF (69-8003)**  
**SUMMARY ANALYSIS OF CHANGE**  
**FROM FY 2015 ENACTED TO FY 2016 REQUEST**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

<b><u>ITEM</u></b>	<b>Change from</b>	<b>Change from</b>
	<b>FY 2015 to FY 2016</b>	<b>FY 2015 to FY 2016</b>
	<b>(\$000)</b>	<b>(FTE)</b>
<b>FY 2015 ENACTED</b>	<b>\$32,042</b>	<b>144</b>
<b>ADJUSTMENTS TO BASE:</b>		
FY 2016 General Schedule (GS) Pay Increase	\$ 55	
FY 2016 Wage Grade (WG) Pay Increase	51	
One Additional Compensable Day	42	
Washington Office Rent	40	
Non-Pay Inflation	35	
Annualization of FY 2015 GS Pay Increase	19	
DOT Working Capital Fund	16	
<b>SUBTOTAL, ADJUSTMENTS TO BASE</b>	<b>\$ 258</b>	<b>0</b>
<b>PROGRAM CHANGES:</b>		
Financial Management System FSSP O&M (DOI)	\$ 250	
Asset Renewal Program – Year Eight	3,850	
<b>SUBTOTAL, PROGRAM CHANGES</b>	<b>\$ 4,100</b>	<b>0</b>
<b>FY 2016 REQUEST</b>	<b>\$36,400</b>	<b>144</b>

## EXHIBIT III-2

### ANNUAL PERFORMANCE RESULTS AND TARGETS SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION

The Saint Lawrence Seaway Development Corporation (SLSDC) integrates performance results into its budget request to demonstrate alignment with the Department of Transportation's Strategic Plan. SLSDC tracks the following DOT-level performance measures to demonstrate program results:

**DOT Goal/Objective:** Economic Competitiveness / Enhance Productivity and Growth

Seaway System Reliability	2012	2013	2014	2015	2016
Target	99.0%	99.0%	99.0%	99.0%	99.0%
Actual	99.7%	99.1%	97.2%	---	---

In measuring system downtime, the SLSDC includes minutes/hours of delay for weather, including visibility; vessel incidents; insufficient water levels or high velocities; and lock equipment malfunction.

## Detailed Justification for Agency Operations

### What Do I Need to Know before Reading this Justification?

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- The Saint Lawrence Seaway Development Corporation (SLSDC) is responsible for operating and maintaining the U.S. portion of the St. Lawrence Seaway, including the two U.S. Seaway locks, while also performing environmental management activities and promoting regional trade and economic development.
- The St. Lawrence Seaway is a binational waterway and lock system, which connects the Great Lakes to the Atlantic Ocean for commercial waterway trade and is jointly operated by the United States (SLSDC) and Canada (St. Lawrence Seaway Management Corporation – SLSMC).
- Both nations made commitments to each other more than 55 years ago through binding international agreements to operate and maintain their respective portions of the waterway.
- Over its history, the 15-lock binational waterway has moved nearly 3 billion metric tons of cargo valued at \$400 billion. Almost 25 percent of this cargo travels to and from overseas ports.
- SLSDC operations impact 227,000 U.S. and Canadian jobs with associated benefits of \$35 billion in annual business revenue from transportation firms and \$14 billion in annual wages and salaries<sup>1</sup>, and provide approximately \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation<sup>2</sup>.
- The St. Lawrence Seaway directly serves the eight-state Great Lakes region that accounts for one-quarter of the U.S. gross domestic product (GDP), one-half of North America's manufacturing and services industries, and is home to nearly one-quarter of the continent's population. The Great Lakes region is the world's fourth largest economy with economic output of nearly \$5 trillion.
- The Great Lakes/Seaway fleet is nearly 7 times more fuel-efficient than trucks and 1.14 times more fuel-efficient than rail. Moreover, it would take 3 million railcars or 7.1 million trucks to carry the total cargo transported by the Great Lakes/Seaway fleet.<sup>3</sup>

### What is the Request and What Will We Get for the Funds?

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**FY 2016 Agency Operations Budget Request**  
**Operations and Maintenance – HMTF (69-8003)**  
**(\$000)**

<b>Program Activity</b>	<b>FY 2014 Actual</b>	<b>FY 2015 Enacted</b>	<b>FY 2016 Request</b>	<b>Difference from FY 2015 Enacted</b>
Agency Operations	\$15,850	\$17,742	\$18,250	\$508
<b>Total</b>	<b>\$15,850</b>	<b>\$17,742</b>	<b>\$18,250</b>	<b>\$508</b>

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<sup>1</sup> *The Economic Impacts of the Great Lakes St. Lawrence Seaway System*, Martin Associates, October 2011.

<sup>2</sup> *Great Lakes Navigation System: Economic Strength to the Nation*, U.S. Army Corps of Engineers, January 2009.

<sup>3</sup> *The Environmental and Social Impacts of Marine Transport in the Great Lakes-St. Lawrence Seaway Region*, Research and Traffic Group, January 2013.



For FY 2016, the SLSDC is requesting \$18.250 million and 144 full-time equivalents (FTEs) for the SLSDC's Agency Operations program. The FY 2016 request represents an increase of \$508,000 compared to the FY 2015 Enacted level with no requested change to the FTE level. The increase is made up of baseline increases (\$258,000) and program changes (\$250,000).

Baseline increases include:

- Estimated 1.3 percent annual pay raise for SLSDC general schedule employees (9 months) (\$55,000);
- Estimated 1.0 percent annual pay raise for SLSDC wage grade employees (12 months) (\$51,000);
- One additional compensable day in FY 2016 (\$42,000);
- Estimated increase for SLSDC's Washington, D.C. office rent at 55 M Street (\$40,000);
- Estimated 1.0 percent inflation increase for non-pay object class expenditures (\$35,000);
- Estimated annualization of the FY 2015 general schedule pay increase (\$19,000); and
- Estimated increase in DOT Working Capital Fund (WCF) expenses (\$16,000).

The program increase is to fund the estimated annual operational expenses of \$250,000 for the SLSDC's accounting system at the U.S. Department of Interior. The SLSDC is expected to complete its financial management system migration to Interior's Federal Shared Service Provider (FSSP) system in the last quarter of FY 2015. Modernization costs, as well as pro-rated FY 2015 operational expenses, will be funded from the SLSDC's no-year account unobligated balance (non-operational reserve). This request includes the first appropriations year for funding the annual expenses. Once established in the SLSDC's Agency Operations baseline budget, no further significant increases are expected.

The FY 2016 Agency Operations program budget request is the first in 13 years to include a program increase; recent budget requests have only included baseline increases. The SLSDC has effectively managed its entire operations and maintenance program over the past decade with funding at a level lower than an inflation-adjusted amount. Over this period, the SLSDC has successfully accomplished "more with less" by re-prioritizing its activities and reducing administrative expenses in order to absorb unfunded pay and benefits increases, promotions, and other administrative expense increases – all without jeopardizing its operational safety, reliability, and efficiency goals.

At the request level in FY 2016, the SLSDC will:

- (1) Continue operating a safe, secure, and efficient commercial trade route with a reliability rate in the U.S. sector of the system of 99 percent or greater through safe and effective operations of the two U.S. Seaway locks and efficient waterway management.

- (2) Continue close coordination and involvement with the Canadian St. Lawrence Seaway Management Corporation (SLSMC) to ensure consistent practices and greater economies of scale.
- (3) Perform safety inspections and ballast water examinations of all foreign-flag vessels entering the St. Lawrence Seaway in Montreal, Quebec, prior to entering U.S. waters.
- (4) Perform and promote trade and economic development activities focused on increasing Seaway System commercial trade and encouraging Great Lakes regional economic growth and job creation.

Related to its role as the environmental gatekeeper to the Great Lakes, the SLSDC will continue to advocate strict ballast water management efforts to prevent any new introductions of aquatic invasive species via commercial vessels entering Seaway waters. In 2008, the SLSDC implemented regulations jointly with the SLSMC requiring all ships with no ballast in their tanks to conduct saltwater flushing of their empty ballast water tanks before arriving in the Seaway. The SLSDC, along with the U.S. Coast Guard, Transport Canada, and the SLSMC, have enforced ballast water inspections of all vessels to ensure these regulations are carried out.

The SLSDC will also continue to actively participate in the Great Lakes Ballast Water Working Group (BWWG), along with its U.S. and Canadian ballast water governmental partners. The mission of the BWWG is to harmonize ballast water management efforts between the U.S. and Canadian agencies responsible for management and oversight of waterborne transportation on the Great Lakes Seaway System.

The BWWG reported that in 2013, 99 percent of all international vessels entering the St. Lawrence Seaway were in compliance with Seaway regulations requiring that water in ballast water tanks be at least 30 parts salt per thousand parts per water (30 ppt.). Compliance has steadily increased: 2013 (99 percent), 2012 (98 percent), 2011 (97 percent), and 2010 (94 percent). During 2013, 100 percent of the ships bound for the Great Lakes from outside the Exclusive Economic Zone (EEZ) received a ballast tank exam, compared with 100 percent in 2012, 100 percent in 2011, 100 percent in 2010, 100 percent in 2009, 99 percent in 2008, and 74 percent in 2007.

Vessels that had not conducted a ballast water exchange or flush were required to either retain the ballast water and residuals on board, treat the ballast water in an environmentally sound and approved manner, or return to sea to conduct a ballast water exchange. The effectiveness of the Seaway's ballast water inspection program has been publicly credited as a key factor in preventing the discovery of establishment of any new species in the Great Lakes since 2006 – the longest such period of non-detection on record.

The SLSDC's principal performance goal is to provide a safe, secure, reliable, and efficient U.S. portion of the St. Lawrence Seaway to its commercial users. The annual goal is 99 percent reliability for the U.S. section of the Seaway, including the two U.S. locks, during the annual navigation season (typically late March to late December each year).

The U.S. Seaway System reliability rate for Fiscal Year 2014 was 97.2 percent. Severe weather and ice conditions at the end of the 2013 season and start of the 2014 season caused significant system-wide delays. December 2013 delays totaled more than 53 hours, while April 2014 delays totaled 17 hours. The historic winter weather conditions and ice levels in the Seaway System were the primary cause of these delays. The SLSDC has the most control over the proper functioning of its lock equipment. In FY 2014, lock-related delays totaled only 15 percent of all FY 2014 System delays.

### **What is the Program?**

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The SLSDC's Agency Operations program consists of all agency activities, except for the on-going ARP for capital infrastructure replacements and improvements. The Corporation is responsible for the operation and maintenance of the U.S. portion of the binational waterway and lock system for commercial users moving goods to and from the Midwest region of North America.

SLSDC activities associated with the Agency Operations program directly support its core performance measure of system reliability and the Department's "Economic Competitiveness" strategic goal and the Department's outcome measure of enhancing productivity and growth.

The SLSDC performs a number of activities each year as part of the Agency Operations program:

*Lock Operations and Marine Services* – Lock Operations and vessel traffic control on the St. Lawrence Seaway are conducted on a 24-hour day, 7-day week basis throughout the shipping season (typically late March to late December each year). Marine operations consist of commissioning and decommissioning aids to navigation, channel dredging and maintenance, tugboat and other floating equipment services, as well as vessel safety inspections and ballast water examinations.

*Engineering and Maintenance* – The Corporation facilities must be maintained in efficient operating condition. Facilities include: locks and guidewalls; roads; an international bridge; a highway tunnel; channels; public use facilities, such as the Eisenhower Lock Visitors' Center; navigation aids; buildings, grounds, and utilities; and permanent operating equipment. Major maintenance/asset rehabilitation on existing facilities will continue to be performed during the non-navigation winter months as part of the SLSDC's ARP.

*Trade and Economic Development* – The Corporation engages in activities designed to increase public and commercial awareness of the Great Lakes Seaway System and encourage economic development throughout the Great Lakes region. In FY 2015, the SLSDC launched its Great Lakes regional outreach initiative in Cleveland, Ohio, that focuses on trade and economic development activities and provides "on the ground" assistance to the Great Lakes St. Lawrence Seaway System stakeholder community. A Great Lakes regional representative is responsible for advancing the Corporation's trade and economic development goals and programs throughout the region, which are highlighted by the SLSDC's "North America's Opportunity Belt" marketing campaign and include: working with and supporting Great Lakes/Seaway ports, terminals, shippers, carriers, and labor to increase maritime trade;



representing the SLSDC at Great Lakes/Seaway port, trade, and transportation regional events; meeting with federal, state, and local elected officials to offer assistance and respond to inquiries; coordinating with other regional federal entities, Great Lakes state DOTs, and regional economic development agencies to ensure Great Lakes Seaway System maritime transportation is understood and prioritized in regional planning; and promoting federal maritime transportation and funding assistance programs. This office will also be responsible for leading future SLSDC regional activities and programs that directly assist Great Lakes ports, businesses, and other stakeholders.

Administrative – Executive management and administration of the Corporation includes legal, civil rights, financial management, procurement, information technology, human resources, budget, performance, public relations, and other related administrative support services.

Approximately 80 percent of the Agency Operations program budget funds personnel compensation and benefits. The remaining 20 percent of funds are used for programmatic activities and minor capital maintenance of the locks and facilities, vessel traffic control, equipment, supplies, vessel safety and environmental inspections, and marketing activities.

The Agency Operations program is broken down into two categories — operational and administrative. To maximize its funding for operational programs and initiatives, the SLSDC constantly seeks to meet or exceed its internal performance measure of managing agency administrative expenses as a percentage of all operating costs at 23 percent or less. In FY 2014, the SLSDC exceeded its goal, as the administrative cost percentage was 22 percent. Administrative expenses totaled \$3.6 million in FY 2014. On an on-going basis, the SLSDC has implemented a number of activities to achieve the administrative cost ratio goal, including reducing costs associated with supplies and materials and administrative contractual services, and investigating new technologies to reduce administrative overhead costs.

In addition, the SLSDC manages an intensive succession planning program to effectively manage the separation and/or retirement of all SLSDC personnel to ensure efficient operations, while seeking to reduce positions wherever possible and to lower costs associated with personnel compensation and benefits.

Given the real and anticipated advancements in technology impacting how the SLSDC conducts its business, the SLSDC formally launched in May 2013 a “Jobs of the Future” initiative to address a future operational and maintenance workforce needs. A similar initiative was successfully implemented by the Canadian SLSMC several years ago to broaden the skill sets of its operations and maintenance workforce to meet today’s working requirements.

The goal of this initiative is to increase lock operations and maintenance productivity and skill sets and ultimately improve service to SLSDC customers. SLSDC officials have identified an opportunity to more effectively manage the work performed by SLSDC lock personnel when vessels are not transiting the locks. Skilled trades support (electrician/electronics or millwright) will be assigned to each lock crew to operate the lock equipment for the purpose of troubleshooting and performing specific routine maintenance. Maintenance issues will be diagnosed and repaired by qualified Lock Operations employees during times when full maintenance crews are not available.

The SLSDC will offer development programs to train internal or external skilled trades recruits in all areas of responsibilities performed by skilled trades employees, including technical skills in the areas of control systems (mechanical and electrical) and the operation of Seaway locks.

SLSDC management and labor officials meet regularly to establish core skills and competencies for the future and then focus on communicating and applying these profiles to address workforce turnover and development through training, employee advancement, career and succession planning.

FY 2015 Base: The FY 2015 enacted appropriations level for the SLSDC's Agency Operations program is \$17.7 million.

Anticipated FY 2015 Accomplishments: In FY 2015, the SLSDC will:

- Provide a safe, secure, and efficient commercial trade route with a reliability rate of 99 percent or greater through vessel traffic control operations and infrastructure maintenance.
- Continue close coordination and involvement with the Canadian SLSMC in all aspects of Seaway operations and trade development to ensure consistent practices and greater economies of scale. The two agencies will continue to work cooperatively on the vessel inspection procedures of foreign-flagged vessels, invasive species activities affecting the Great Lakes Seaway System, and binational trade and economic development initiatives including the Highway H<sub>2</sub>O program and Short Sea Shipping activities.
- Perform safety inspections and ballast water exams of all foreign-flag vessels entering the St. Lawrence Seaway in Montreal, Quebec, prior to entering U.S. waters.
- Promote regional trade and economic development through traditional marketing efforts and new initiatives and activities aimed at increasing economic growth and job creation in the Great Lakes region.
- Use and enhance technologies to more efficiently manage vessel traffic control and lock transits, including the Global Positioning System/Automatic Identification System (GPS/AIS) vessel traffic system, of which the St. Lawrence Seaway was the first inland waterway in the western hemisphere to use.

### **Why Is This Particular Program Necessary?**

The SLSDC is responsible for the operations and maintenance of the U.S. portion of the binational St. Lawrence Seaway, including the two U.S. Seaway locks in Massena, N.Y. The mission of the Corporation, which is directly linked to this program, is to serve the U.S. intermodal and international transportation system through the operation and maintenance of a safe, reliable, efficient, and environmentally responsible deep-draft waterway, in cooperation with its Canadian counterpart. The SLSDC also encourages the development of trade through the Great Lakes St. Lawrence Seaway System, which contributes to the comprehensive economic development of the entire Great Lakes region.

On average, 40-50 million metric tons of cargo are transported on the St. Lawrence Seaway annually to and from more than 50 nations. Principal commodities include grain, iron ore, coal, finished iron and steel products, and heavy and over dimensional equipment (project cargoes).

The St. Lawrence Seaway directly serves an eight-state, two-province region that accounts for one-quarter of the U.S. gross domestic product (GDP), one-half of North America's manufacturing and services industries, and is home to nearly one-quarter of the continent's population. The Great Lakes region is the world's fourth largest economy with annual economic output of nearly \$5 trillion.

The waterway also produces significant economic benefits to the Great Lakes region. In fact, an economic impact study concluded that maritime commerce on the Great Lakes Seaway System sustains 227,000 U.S. and Canadian jobs, \$35 billion in transportation-related business revenue, \$14 billion in annual wages and salaries<sup>4</sup>, and provides approximately \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation<sup>5</sup>. Since the 15-lock binational waterway's opening in 1959, nearly 3 billion metric tons of cargo has moved on the St. Lawrence Seaway valued at \$400 billion.

Great Lakes Seaway System ships also remain more fuel-efficient and emit less greenhouse gases per thousand cargo-ton miles than land-based alternatives.<sup>6</sup> The Great Lakes/Seaway fleet is nearly 7 times more fuel-efficient than trucks and 1.14 times more fuel-efficient than rail. Moreover, it would take 3 million railcars or 7.1 million trucks to carry the total cargo transported by the Great Lakes/Seaway fleet.

There are no viable alternatives to this program. By law and treaty, the SLSDC is required to operate and maintain its portion of the St. Lawrence Seaway with an identical legislative mandate in Canada for the SLSMC. In addition to these legislative authorities, both nations also executed an Exchange of Notes in 1952 and 1954 establishing the terms of constructing, managing, and operating the Seaway jointly. These diplomatic notes, which have the full force and effect of a treaty between the two countries, have remained in effect since their official exchange. The SLSDC remains committed to fulfilling this binding international obligation.

### **How Do You Know the Program Works?**

Since opening in 1959, the SLSDC has consistently maintained a 99 percent reliability rate for its locks and the U.S. sector of the waterway. This high mark of success is due primarily to the SLSDC's efficient management and operations of the locks and control of vessel traffic. Global customers from more than 50 nations return each year to use the Seaway because of the waterway's strong safety record, efficient operations, and near-perfect reliability rate — all program outcomes of the SLSDC's Agency Operations program.

In 1998, the SLSDC began the process of measuring the success of its Agency Operations program by certifying its operational business practices through the internationally recognized International Standards Organization (ISO). The ISO recognition is only conferred on those

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<sup>4</sup> *The Economic Impacts of the Great Lakes St. Lawrence Seaway System*, Martin Associates, October 2011.

<sup>5</sup> *Great Lakes Navigation System: Economic Strength to the Nation*, U.S. Army Corps of Engineers, January 2009.

<sup>6</sup> *The Environmental and Social Impacts of Marine Transport in the Great Lakes-St. Lawrence Seaway Region*, Research and Traffic Group, January 2013.

service firms and organizations that meet the highest quality customer service and management standards set by the Geneva, Switzerland-based ISO.

In June 2014, the SLSDC successfully completed a two-day surveillance audit of its ISO 9001:2008 certified quality management system, conducted by Lloyds Register of Quality Assurance, an independent accrediting agency. The ISO 9001:2008 standard focuses on self assessment, ongoing improvements, and performance metrics.

The ISO certified quality management system provides a framework to achieve customer satisfaction as is evidenced by high ratings achieved in regular customer surveys. It provides a platform for customers to offer feedback and maintain customer focus throughout the organization. Maintaining the ISO certification has kept SLSDC officials focused on finding better ways of operating the waterway, and recognizing how agency initiatives and decisions affect its customers, both internal and external.

In addition, the program received high marks in the area of financial management. In November 2014, the SLSDC received an unmodified opinion of its financial statements for FY 2014 with no material weaknesses or reportable conditions. The FY 2014 audit marked the 51<sup>st</sup> consecutive unqualified opinion or clean audit report for the Corporation.

#### **Why Do We Want/Need to Fund the Program at the Requested Level?**

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The requested level will provide the SLSDC with the financial and personnel resources necessary to perform the operational, maintenance, and administrative functions of the agency, including lock operations, marine services, vessel traffic control, asset maintenance, ballast water management, safety and environmental inspections, and trade promotion and economic development. The Corporation has made a concerted effort in recent years to reduce program expenses while ensuring that program activities are performed at or above performance targets and within budgetary limits.

The SLSDC remains dedicated to promoting the economic and environmental benefits of the marine mode, attracting new cargoes to the Seaway, and leveraging technology to enhance the system's performance and safety.

## Detailed Justification for Asset Renewal Program

### What Do I Need to Know before Reading this Justification?

- The SLSDC's ARP, which started in FY 2009, is one component of the overall binational Great Lakes-Seaway infrastructure renewal program. The Canadian St. Lawrence Seaway Management Corporation (SLSMC) has been making similar improvements at their 13 Seaway locks. Together, the two agencies have spent \$350 million over the past five years and have projected asset renewal expenses of nearly \$500 million over the next five years.
- A total of \$6.9 billion is being spent on asset renewal and infrastructure improvements in the Great Lakes-St. Lawrence Seaway navigation system by both the public and private sectors.<sup>1</sup>
- The ARP is needed to sustain a safe and reliable transportation route for the movement of commercial goods to and from the Great Lakes region of North America.
- The FY 2016 budget request for the SLSDC's Asset Renewal Program (ARP)<sup>2</sup> is for the eighth year of funding of an originally scheduled 10-year program. As noted in the 2015 President's Budget, the SLSDC expects to extend the program beyond FY 2018 in order to complete all planned projects and transition to a more traditional capital program.
- Prior to the start of the ARP in FY 2009, only \$47 million in capital expenditures had been cumulatively invested in the U.S. Seaway locks since they opened in 1959.
- None of the ARP 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. Seaway locks.
- Through the ARP's first six years (FYs 2009-14), the SLSDC has obligated \$94 million on more than 43 separate projects.
- Approximately two-thirds of the ARP funds obligated during the program's first six years, totaling more than \$60 million, were awarded within the region. In addition to these contracts, the ARP is producing \$1.5-\$2.5 million in additional economic benefits to the region each year.
- The estimated economic losses associated with a shutdown of either of the two U.S. locks range from \$1.3-\$2.3 million per day, depending on the length of the delay.

### What is the Request and What Will We Get for the Funds?

#### FY 2016 Asset Renewal Program (ARP) Budget Request Operations and Maintenance – HMTF (69-8003) (\$000)

Program Activity	FY 2014 Actual	FY 2015 Enacted	FY 2016 Request	Difference from FY 2015 Enacted
Asset Renewal Program	\$15,150	\$14,300	\$18,150	\$3,850
<b>Total</b>	<b>\$15,150</b>	<b>\$14,300</b>	<b>\$18,150</b>	<b>\$3,850</b>

<sup>1</sup> *Infrastructure Investment of the Great Lakes St. Lawrence Seaway System*, Martin Associates, January 2015.

<sup>2</sup> Information on the SLSDC's ARP, including annual capital investment plans and semiannual reports to the Congress, can be found at <http://www.greatlakes-seaway.com/en/management/slsdc/asset/index.html>.



The SLSDC's ARP, which started in FY 2009, addresses the SLSDC's infrastructure needs for the two U.S. Seaway locks, the Seaway International Bridge, maintenance dredging, operational systems, and Corporation facilities and equipment. The program marks the first time in the Seaway's 50-year history that a coordinated effort to repair and modernize the U.S. Seaway infrastructure has taken place. None of the ARP investments result in increases to the authorized depth or width of the navigation channel or to the size of the two locks.

The \$18.150 million included in the FY 2016 budget request to fund five SLSDC ARP projects will address various needs for the two U.S. Seaway locks, operational systems and networks, and Corporation facilities and equipment (*see pages 36-38 for FY 2016 ARP projects and descriptions*).

As highlighted in the FY 2015 budget request, the SLSDC is expected to extend the program beyond its originally scheduled completion in FY 2018. This extension will serve two purposes: (1) to ensure the completion of all original ARP projects, several of which were deferred in order to meet lower-than-estimated annual funding levels in recent years; and (2) to allow the SLSDC to address recurring capital needs beyond the timeframe of the original ARP as it transitions to a more traditional capital program.

There are two major ARP projects scheduled for funding in FY 2016: (1) the second year of a four-year, \$24.8 million effort to replace the SLSDC's two tugboats – *Robinson Bay* and *Performance* (\$10 million); and (2) the installation of a hands-free vessel mooring system at Snell Lock to match the system that will be installed at Eisenhower Lock and the 13 Canadian Seaway locks (\$8 million). These projects represent two of the largest remaining projects in the ARP, and none of them can be further divided into smaller funding levels over multiple years.

SLSDC ARP activities directly support its core performance measure of system availability as well as the Department's "State of Good Repair" strategic goal and the Department's outcome measure of improving equipment and facilities.

### **What is the Program?**

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With the enactment of the FY 2009 Omnibus Appropriations Act, the SLSDC's ARP was initiated. The program focuses on improving aging Seaway infrastructure, conducting maintenance dredging, investing in new technologies, purchasing new equipment, and refurbishing old facilities. The ARP is the first major effort to rehabilitate and modernize the U.S. Seaway infrastructure in the waterway's history.

The Seaway is comprised of perpetual assets (locks, channels, an international bridge, highway tunnel, vessel traffic control system, and accompanying facilities and equipment), which require capital reinvestment in order to continue to operate safely, reliably, and efficiently. The U.S. portion of the St. Lawrence Seaway was built in the late 1950s at an original cost of approximately \$130 million. Prior to the start of the ARP in FY 2009, only \$47 million in capital expenditures had been cumulatively invested in the U.S. Seaway locks since they opened in 1959. Without sufficient investment in these perpetual assets, it will become increasingly difficult to maintain the future availability and reliability of the Seaway.

The goal of the Seaway's ARP is to ensure the long-term structural integrity of the Seaway infrastructure that, in most cases, has reached the end of the original "design" life. In addition to supporting the SLSDC's performance goals, the ARP also advances several key Department priorities, specifically, system performance and reliability, economic competitiveness, and congestion mitigation. The Seaway infrastructure has been a model of performance and reliability – achieving a 99 percent or better reliability rate in four out of the last five navigation seasons. Adequate capital reinvestment in the Seaway infrastructure is critical to maintaining its exceptional reliability record.

Although the majority of ARP work is completed by contractors, the SLSDC federal workforce is directly responsible for completing several maintenance-related projects as well as much of the pre-contract work, including preparation of designs, specifications, drawings, and cost estimates. Since 2009 when the ARP was launched, the SLSDC has been able to effectively manage this program without any significant increase to staff levels.

In the first six years of ARP funding (FYs 2009-2014), the SLSDC obligated \$94 million on more than 43 separate projects. These projects included maintenance dredging in the U.S. portion of the Seaway navigation channel, lock culvert valve machinery upgrade to hydraulic operation, structural rehabilitation and corrosion prevention work on the Seaway International Bridge, gatelifter upgrades, and miter gate rehabilitation, as well as various other structural and equipment repairs and/or replacement.

The SLSDC's ARP is resulting in not only modernized infrastructure and new equipment to ensure the long-term reliability of the St. Lawrence Seaway, but it is also having a positive and significant impact on the Upstate New York economy. In fact, approximately two-thirds of the ARP funds obligated during the program's first six years, totaling more than \$60 million, were awarded within the region. In addition to these contracts, the ARP is producing \$1.5-\$2.5 million in additional economic benefits to the region (local permanent and temporary hires, local spending on supplies and equipment, lodging, meals, etc.) each year.

The completion of ARP projects will extend the life of the U.S. Seaway infrastructure and reduce the risk of system delays to commercial navigation caused by lock equipment malfunction and degradation over time. In addition, several ARP projects will involve the implementation of new and improved technologies for the operation of the Seaway infrastructure, which will result in minimized maintenance needs and improved efficiencies.

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 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 U.S. Army Corps of Engineers (USACE) to leverage their expertise.

The Canadian Seaway locks along the St. Lawrence River are identical in age and design to those owned by the U.S. SLSDC. In the past decade prior to the SLSDC's ARP, the Canadian Government began addressing its own Seaway asset capital reinvestment needs. Together, the SLSDC and SLSMC have spent \$350 million over the past five years and have projected asset

renewal expenses of nearly \$500 million over the next five years. Many of the lock-related ARP improvements at the U.S. locks will parallel activities either completed, underway, or planned at the Canadian Seaway locks.

These significant investments clearly demonstrate the commitment of the United States and Canada to the long-term health and vitality of the Great Lakes Seaway System, complementing similar investments being made by many other Seaway System stakeholders, including ports, terminals, and carriers.

In January 2015, a report was released highlighting public and private investments in the Great Lakes St. Lawrence Seaway navigation system<sup>3</sup>. The report, which was based on a survey of more than 450 U.S. and Canadian public organizations and private companies, found that \$6.9 billion is being spent on asset renewal and infrastructure improvements in the Great Lakes St. Lawrence Seaway navigation system by both the public and private sectors. Between 2009-2013 more than \$4.7 billion has been invested in ships, ports and terminals, and waterway infrastructure, while an additional \$2.2 billion in capital spending has been committed for infrastructure investments in the system by companies and governments.

FY 2015 Base: The FY 2015 enacted appropriations level for the SLSDC's ARP is \$14.3 million.

Anticipated FY 2015 Accomplishments: During FY 2015, the SLSDC's Office of Engineering and Maintenance will complete engineering specifications and plans, permitting and environmental studies (*as applicable*), and contractual obligations for FY 2015 ARP projects.

Major ARP projects expected to be awarded in FY 2015 include the installation of a new hands-free vessel vacuum mooring system to match similar technology currently being installed at the Canadian Seaway locks (\$8 million), continued upgrade of miter gate machinery at the Seaway locks (\$1.8 million), structural rehabilitation of the miter gates (\$800,000), and the start of a four-year, \$24.8 million project to replace the SLSDC's tugboats *Robinson Bay* and *Performance* (\$750,000). The Corporation's Office of Financial Management and Administration and Office of Budget and Programs also support this initiative.

### **Why Is This Particular Program Necessary?**

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The goal of the Seaway's ARP is to ensure the long-term structural integrity and reliability of the Seaway infrastructure. After more than half a century of continuous operation in often harsh weather conditions, the Seaway infrastructure needs to be rehabilitated to continue this level of safety and reliability for the next half century.

The infrastructure and engineering recommendations of the *Great Lakes St. Lawrence Seaway Study* were the genesis of the ARP's creation. During its work on the study, the SLSDC measured its infrastructure assets using a USACE-based lock criticality index to better identify and prioritize maintenance and asset renewal needs. The results of the index were used to develop the ARP.

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<sup>3</sup> *Infrastructure Investment of the Great Lakes St. Lawrence Seaway System*, Martin Associates, January 2015.

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 at any one of the 15 U.S. or Canadian Seaway locks would cause system-wide delays. The estimated economic losses associated with a shutdown of either of the two U.S. locks range from \$1.3-\$2.3 million per day, depending on the length of the delay. In 1985, a lock wall 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 at that time of more than \$24 million (\$54 million in 2014 dollars). In addition, the availability of the Great Lakes Seaway System provides \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation<sup>4</sup>. The ARP program is vital to ensuring system availability and the flow of goods via the St. Lawrence Seaway in the decades to come.

There is a delicate balance between preserving the existing locks, channels, and associated infrastructure, and ensuring their safety and reliability at all times. There is a critical point where regular maintenance and repairs are no longer sufficient and decisions on major rehabilitation or replacement of structures is required. The longer decisions are extended, the higher the risk to the safety of the locks and to other Seaway infrastructure, greatly increasing associated costs. The ARP enables the SLSDC to achieve this balance and to address major rehabilitation and replacement needs in a timely fashion.

In addition to the aging infrastructure needs and economic benefits of this program, the international agreements entered into by the United States and Canada in the 1950s necessitate that the two countries jointly operate and maintain the St. Lawrence Seaway and its physical assets. Over the past 15 years, the Canadian government has begun to address the asset renewal needs of its 13 Seaway locks, eight of which are more than 75 years old (located at the Welland Canal). The SLSDC's ARP functions as the nation's commitment to the long-standing agreement to jointly operate and maintain the binational waterway for commerce.

### **How Do You Know the Program Works?**

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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 ensure that the multi-year program is executed properly and efficiently and to identify any possible concerns early in the process. The group convenes every two weeks to review the status of ARP projects and to collectively discuss ways to improve the overall management, execution, and reporting of the program on an ongoing basis.

In May 2010, the Government Accountability Office (GAO) completed its review of the SLSDC's ARP cost estimating process. The review was in response to a congressional mandate contained in P.L. 111-8, Omnibus Appropriations Act, 2009, and focused on three areas: (1) how the SLSDC developed and estimated the costs of projects in its ARP; (2) to what extent the ARP covered 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.

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<sup>4</sup> *Great Lakes Navigation System: Economic Strength to the Nation*, U.S. Army Corps of Engineers, January 2009.

GAO found that the SLSDC's ARP adequately addressed capitalization needs and that the plan supported the efforts underway or planned in Canada, but that agency cost estimating could be improved. GAO recommended that the SLSDC develop a cost-estimating process that follows federal best practices to ensure that its estimates are comprehensive, accurate, and credible.

Following the issuance of the GAO report, the SLSDC immediately completed an internal review of the GAO Cost Estimating and Assessment Guide to identify "best practices" that could be used by SLSDC cost estimators. The SLSDC instituted several new cost estimating processes in its procedures to further improve the quality and accuracy of ARP cost estimates. Following the implementation of new cost estimating processes, ARP contracts improved, ranging from 25 percent less to 40 percent greater than estimates. The importance of the cost estimates has been stressed and cost estimates have included better documentation of the sources and assumptions used, providing more clearly defined estimates. In FY 2011, GAO officials announced that it considers the review "closed-implemented".

### **Why Do We Want/Need to Fund the Program at the Requested Level?**

As the SLSDC approaches the end of its ARP, there are several large capital projects included in the FY 2016 request that had been deferred in earlier years in order to meet budget targets and enacted levels, but are in great need of completion. Two of these projects are the replacement of the SLSDC tugboat *Robinson Bay* and the installation of the hands-free mooring system at Snell Lock.

Without the necessary funding to complete these two highly visible projects, the SLSDC jeopardizes its strong and historic record on safety (tug replacement) and lock transit efficiency (hands-free mooring system). None of these projects can be further divided into smaller funding levels over multiple years. In fact, the SLSDC's plan to spread the *Robinson Bay* tugboat replacement cost of \$21 million over 2-3 years produces some project risks.

The impacts of not funding these two projects in FY 2016 are:

*Robinson Bay* Tugboat Replacement – Without the \$10 million request in FY 2016, the start of the tugboat replacement project will have to be deferred to future years. The tug is almost 60 years old and the expenses incurred in maintaining it have increased significantly in recent years. The \$10 million request in the FY 2016 request is the lowest annual amount possible for this project. The tugboat is the SLSDC primary watercraft for emergency responses, ice breaking operations, navigation aids placement and maintenance, and other operational activities. It is important to note that the *Robinson Bay* is the only icebreaking asset in the region.

Hands-Free Mooring System Installation at Snell Lock – The SLSDC and Canadian SLSMC have developed a joint implementation schedule for this new technology to ensure that all Seaway locks are modernized in a timely and systematic fashion. The FY 2015 enacted level included the initial \$8 million to install the new system at Eisenhower Lock. The FY 2016 request funds the installation of the technology at Snell Lock. Without project funding in FY 2016, the SLSDC will have to defer the installation to a future year and delay the binational implementation schedule. Commercial carriers will have to maintain larger crew sizes and incur higher operational expenses to accommodate traditional linehandling operations if even one of the 15 U.S./Canadian Seaway locks is not modernized with the new mooring system.

<b>FY 2016 U.S. Seaway Asset Renewal Program (ARP) Projects</b>		
<b>ARP Project Number</b>	<b>Project Name</b>	<b>FY 2016 Request</b>
10	Both Locks – Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	<b>50,000</b>
11	Fixed Navigational Aids – Rehabilitate	<b>50,000</b>
12	Corporation Equipment – Floating Plant/Tugs – Replace	<b>10,000,000</b>
23	Both Locks – Install Vessel Vacuum Mooring Systems	<b>8,000,000</b>
51	Corporation Facilities – Upgrade Physical Security to Meet HSPD-12 Requirements	<b>50,000</b>
<b>ARP Totals (5 projects):</b>		<b>\$18,150,000</b>

The SLSDC's ARP includes capitalized projects and equipment as well as non-capitalized, maintenance projects related to SLSDC-owned assets.

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 keep it in an ordinarily efficient operating condition. Expenditures for these maintenance projects are recognized as operating costs.

Funding for each year of the ARP is constrained to targets for those years as approved by the Office of Management and Budget (OMB). Project estimates and schedules may fluctuate at various points in the lifespan of the ARP and will be revised as needed.

- (1) **ARP Project No. 10: Both Locks – Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities (Non-Capital Maintenance Project) (\$50,000)** – This project is for upgrading the infrastructure that supplies power to Eisenhower and Snell Locks and to the Corporation's Maintenance Facility. This work is performed by the New York Power Authority under a reimbursable agreement with the SLSDC. The power is furnished directly from the Moses-Saunders Power Dam over infrastructure that is over 50 years old. The occasional loss of power from the 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 funds obligated in FY 2009, FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014, and additional obligations are planned in FY 2015)*

- (2) **ARP Project No. 11: Fixed Navigational Aids – Rehabilitate (Capital Project and Non-Capital Maintenance Project) (\$50,000)** – This project is for rehabilitating fixed navigational aids in the Seaway and for upgrading the navigation lights on these structures. Many of the structures are more than 50 years old and are in need of comprehensive repairs. Many of these structures have concrete bases which are partially underwater and have experienced varying degrees of damage from water, ice, and freeze-thaw cycles. Failure of a fixed aid would likely make it necessary to replace it which would cost significantly more than repairing the existing structure. (*Project funds obligated in FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014, and additional obligations are planned in FY 2015*)
- (3) **ARP Project No. 12: Corporation Equipment – Floating Plant/Tugs – Replace (Capital Project, Capital Equipment, and Non-Capital Maintenance Project) (\$10,000,000)** – This is an ongoing program to rehabilitate and/or replace the Corporation's floating plant that is utilized for maintaining the locks and navigation channels. This multi-year project includes: replacing the SLSDC's tugboats *Robinson Bay* and *Performance*; upgrading the buoy tender barge; purchasing a boat to be used for hydrographic surveying with upgraded surveying equipment and software; purchasing a small boat for emergency response; purchasing a spud barge/scow for work on navigational aids and for emergency/spot dredging; and rehabilitating the Corporation's crane barge/gatelifter *Grasse River*, which would have to be utilized if a miter gate were damaged and had to be replaced.

In FY 2013, the SLSDC contracted with the naval architect and marine engineering firm Robert Allan Ltd. to complete a replacement vs. upgrade/rehabilitate cost analysis for the SLSDC's tug fleet, which includes the *Robinson Bay* and *Performance*, to meet current regulations and requirements. Findings from Robert Allan Ltd. indicate that the upgrade/rehabilitate option is not economically feasible for the *Robinson Bay* or for the *Performance*.

The *Robinson Bay* is almost 60 years old and the expenses incurred in maintaining it have increased significantly in recent years. Additionally, the tug experienced an on-board fire in the engine room in December 2013 that caused damage to that area. The cause of the fire was determined to be aging materials adjacent to the exhaust piping.

The new *Robinson Bay* tugboat will not only produce lower emissions but will achieve greater operational and cost-savings efficiencies, especially for navigation aid maintenance and retrieval/placement at the end and start of each navigation season. Currently, the SLSDC must use its buoy barge to move or replace any navigation aid, and tug crews are unable to bunk onboard the tug during multi-day buoy runs resulting in lodging and other travel-related expenses.

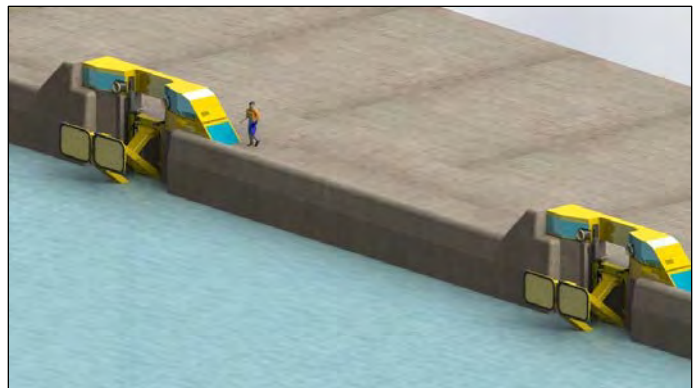
The \$10 million in the FY 2016 budget request is the lowest annual amount possible for this project. The tugboat is the SLSDC's primary watercraft for emergency responses, ice breaking operations, navigation aids placement, and other operational activities. It is important to note that the SLSDC's *Robinson Bay* is the only icebreaking asset in the region.

The total cost to replace both tugboats over a four-year period is \$24.8 million. The current estimated four-year funding breakout is as follows: FY 2015 (\$750,000) to award the large tug (*Robinson Bay* replacement) design; FY 2016 (\$10,000,000) to purchase the parts and equipment and begin construction of the large tug; FY 2017 (\$10,000,000) to complete construction of the large tug and award small tug (*Performance* replacement) design; and FY 2018 (\$4,000,000) to complete construction of the small tug. *(Project funds obligated in FY 2009, FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014, and additional obligations are planned in FY 2015)*

- (4) **ARP Project No. 23: Both Locks – Install Vessel Vacuum Mooring Systems (Capital Project) (\$8,000,000)** – This project is for installing hands-free vacuum mooring equipment at both Eisenhower and Snell Locks to hold vessels in place while they are in the lock instead of using wire ropes deployed by the vessel’s crew to tie the vessel to bollards on the lock wall. It is a two-year project (FYs 2015-16) that requires \$8 million in each year.

This new technology, once fully implemented, will reduce the need for SLSDC employees to tie the vessels up while in the lock, thereby reducing the risk of injuries resulting from handling the wire ropes. In addition, vessel operating costs would be reduced to reflect smaller crew sizes and less equipment to meet current transit requirements.

The Canadian SLSMC initiated this project and began testing the new technology at their Welland Canal locks in 2007. On-going testing has led to a fourth generation design, which includes three units with two vacuum pads on each unit,



mounted in slots in the lock chamber wall. Both the SLSMC and Transport Canada are fully committed to installing this new technology at all 13 of the Canadian Seaway locks by 2017/2018. *(Project funds obligated in FY 2014 and additional obligations are planned in FY 2015)*

- (5) **ARP Project No. 51: Corporation Facilities – Upgrade Physical Security to Meet HSPD-12 Requirements (Capital Project and Non-Capital Maintenance Project) (\$50,000)** – This project is for procuring the Personal Identity Verification (PIV) cards required by the Department as well as the procurement and installation of necessary PIV card readers and other required infrastructure to meet HSPD-12 requirements. *(Project funds obligated in FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014, and additional obligations are planned in FY 2015)*



**DEPARTMENT OF TRANSPORTATION**  
**SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**  
**Operations and Maintenance**  
**Program and Financing**  
*(In thousands of dollars)*

<b>Identification code 69-8003-0-7-403</b>		<b>2014 ACTUAL</b>	<b>2015 ENACTED</b>	<b>2016 REQUEST</b>
	<b>Obligations by Program Activity:</b>			
0001	Operations and maintenance	31,000	32,042	36,400
0900	Total new obligations (Object Class 25.3)	31,000	32,042	36,400
	<b>Budgetary Resources:</b>			
	Budget Authority:			
	Appropriations, discretionary:			
1101	Appropriation (special or trust fund)	31,000	32,042	36,400
1160	Appropriation, discretionary (total)	31,000	32,042	36,400
1930	Total budgetary resources available	31,000	32,042	36,400
	<b>Change in Obligated Balance:</b>			
	Obligated Balance, Start of Year (Net):			
3000	Unpaid obligations, brought forward, Oct 1	0	0	0
	Change in Obligated Balance during the Year:			
3010	Obligations incurred, unexpired accounts	31,000	32,042	36,400
3020	Outlays (gross) (-)	(31,000)	(32,042)	(36,400)
	Obligated Balance, End of Year (Net):			
3050	Unpaid obligations, end of year (gross)	0	0	0
3200	Obligated balance, end of year (net)	0	0	0
	<b>Budget Authority and Outlays, Net:</b>			
	Discretionary:			
	Gross Budget Authority and Outlays:			
4000	Budget authority, gross	31,000	32,042	36,400
	Outlays, gross:			
4010	Outlays from new discretionary authority	31,000	32,042	36,400
	Additional Offsets against Gross Budget Authority only:			
4070	Budget authority, net (discretionary)	31,000	32,042	36,400
4080	Outlays, net (discretionary)	31,000	32,042	36,400
	Budget Authority and Outlays, Net (total):			
4180	Budget authority, net (total)	31,000	32,042	36,400
4190	Outlays, net (total)	31,000	32,042	36,400

**DEPARTMENT OF TRANSPORTATION  
SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION  
10-Year History of Appropriations  
Operations and Maintenance (69-8003)  
(Harbor Maintenance Trust Fund)**

<b><u>YEAR</u></b>	<b><u>REQUEST</u></b>	<b><u>ENACTED</u></b>
2007	\$ 7,920,000 /1	\$16,223,160 /2
2008	\$17,392,000	\$17,392,000
2009	\$31,842,000	\$31,842,000
2010	\$32,324,000	\$32,324,000
2011	\$32,324,000	\$32,259,000 /3
2012	\$33,996,000	\$32,259,000
2013	\$33,000,000	\$30,572,000 /4
2014	\$32,855,000	\$31,000,000
2015	\$31,500,000	\$32,042,000
2016	\$36,400,000	

1/ Total request of \$17,345,000 consists of an appropriation of \$7,920,000 from the Harbor Maintenance Trust Fund (69-8003) and \$9,425,000 in proposed U.S. commercial toll receipts.

2/ Reflects reductions of \$1,121,840, pursuant to P.L. 110-5 (Division B, Title I, Sec. 101(a) and Sec. 111(a)(1)).

3/ Reflects rescission of \$65,000 (0.2%) pursuant to P.L. 112-10 (Division B, Title I, Section 1119).

4/ Reflects a 0.2% across-the-board rescission of \$64,518, pursuant to P.L. 113-6, Division G, Title VIII, Section 3004(c)(1) and a sequestration reduction in the amount of \$1,622,821.

# **SLSDC Fund**

## **(69x4089)**

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**APPROPRIATIONS LANGUAGE**  
**DEPARTMENT OF TRANSPORTATION**  
**SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**  
**FEDERAL FUNDS**

**Public enterprise funds:**

**Saint Lawrence Seaway Development Corporation**

The Saint Lawrence Seaway Development Corporation is hereby authorized to make such expenditures, within the limits of funds and borrowing authority available to the Corporation, and in accord with law, and to make such contracts and commitments without regard to fiscal year limitations as provided by section 104 of the Government Corporation Control Act, as amended, as may be necessary in carrying out the programs set forth in the Corporation's budget for the current fiscal year.

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**DEPARTMENT OF TRANSPORTATION**  
**SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**  
**SLSDC Fund**  
**Program and Financing**  
*(In thousands of dollars)*

Identification code 69-4089-0-3-403		2014 ACTUAL	2015 ENACTED	2016 REQUEST
	<b>OBLIGATIONS BY PROGRAM ACTIVITY</b>			
	<b>Reimbursable Programs:</b>			
0801	Operations and maintenance	17,261	18,642	19,150
0802	Replacements and improvements	14,400	14,300	18,150
0900	<b>Total new obligations</b>	31,661	32,942	37,300
	<b>BUDGETARY RESOURCES</b>			
	<b>Unobligated Balance:</b>			
	Authority to borrow	3,200	3,200	3,200
	Fund balance	13,401	13,712	13,712
1000	Unobligated balance brought forward, Oct 1	16,601	16,912	16,912
	<b>Nonexpenditure Transfers:</b>			
1011	Unobligated balance transferred from other accounts	0	0	0
	<b>Adjustments</b>			
1021	Unobligated Balance: Recoveries of prior year unpaid obligations	131	0	0
1050	Unobligated balance (total)	16,732	16,912	16,912
	<b>Budget Authority:</b>			
	<b>Spending Authority from Offsetting Collections:</b>			
1800	BA: Mandatory: Spending authority: Collected	31,880	32,942	37,300
1801	BA: Mandatory: Spending authority: Change in uncollected payments, Federal sources (+ or -)	(39)	0	0
1850	Budget Authority: Mandatory: Spending authority from offsetting collections (total)	31,841	32,942	37,300
1900	<b>Budgetary authority total (discretionary and mandatory)</b>	31,841	32,942	37,300
1930	<b>Total budgetary resources available (discretionary and mandatory)</b>	48,573	49,854	54,212
	<b>MEMORANDUM (NON-ADD) ENTRIES</b>			
	Authority to borrow	3,200	3,200	3,200
	Fund balance	13,712	13,712	13,712
1941	<b>Unobligated Balance: Memo: Unexpired unobligated balance, end of year</b>	16,912	16,912	16,912
	<b>CHANGE IN OBLIGATED BALANCE</b>			
	<b>Unpaid Obligations:</b>			
3000	Obligated Balance: SOY: Unpaid obligations, brought forward, Oct 1	18,600	17,934	17,744
3010	Obligated Balance: Obligations incurred, unexpired accounts	31,661	32,942	37,300
3020	Obligated Balance: Outlays (gross) (-)	(32,196)	(33,132)	(37,395)
3040	Obligated Balance: Recoveries of unpaid prior year obligations, unexpired accounts	(131)	0	0
3050	Obligated Balance: EOY: Unpaid obligations, end of year	17,934	17,744	17,649
	<b>Uncollected Payments:</b>			
3060	Obligated Balance: SOY: Uncollected customer payments, Federal sources, brought forward, Oct 1 (-)	(139)	(100)	(100)
3070	Obligated Balance: Change in uncollected customer payments, Federal sources, unexpired accounts (+ or -)	39	0	0
3090	Federal sources, end of year (-)	(100)	(100)	(100)
	<b>MEMORANDUM (NON-ADD) ENTRIES</b>			
3100	Obligated balance, start of year (+ or -)	18,461	17,834	17,644
3200	Obligated balance, end of year (+ or -)	17,834	17,644	17,549
	<b>BUDGETARY AUTHORITY AND OUTLAYS, NET:</b>			
	<b>Mandatory:</b>			
	<b>Gross Budget Authority and Outlays:</b>			
4090	Mandatory: Budget authority, gross	31,841	32,942	37,300
	<b>Mandatory: Outlays, gross</b>			
4100	Mandatory: Outlays from new authority	31,841	32,942	37,300
4101	Mandatory: Outlays from balances	355	190	95
4110	Mandatory: Outlays, gross (total)	32,196	33,132	37,395
	<b>Offsets against Gross Budget Authority and Outlays:</b>			
	<b>Offsets collections (collected) from:</b>			
4120	Mandatory: Offsets, BA and OL: Collections from Federal sources (-)	(31,000)	(32,042)	(36,400)
4123	Mandatory: Offsets, BA and OL: Collections from Non-Federal sources (-)	(880)	(900)	(900)
4130	Mandatory: Offsets against gross budget authority and outlays (total) (-)	(31,880)	(32,942)	(37,300)
	<b>Additional Offsets against Gross Budget Authority only:</b>			
4140	Mandatory: Offset, BA: Change in uncollected payments, Federal sources, unexpired accounts (+ or -)	39	0	0
4150	Mandatory: Additional offsets against budget authority only (total)	39	0	0
4160	<b>Mandatory: Budget authority, net</b>	0	0	0
4170	<b>Mandatory: Outlays, net</b>	317	190	95
	Budget Authority and Outlays, Net (total):			
4180	<b>Budget authority, net (discretionary and mandatory)</b>	0	0	0
4190	<b>Outlays, net (discretionary and mandatory)</b>	317	190	95

**DEPARTMENT OF TRANSPORTATION**  
**SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**  
**Object Classification**  
*(In thousands of dollars)*

<b>Identification code 69-4089-0-3-403</b>		<b>2014 ACTUAL</b>	<b>2015 ENACTED</b>	<b>2016 REQUEST</b>
11.1	Personnel compensation: Full-time permanent	9,705	10,117	10,256
11.3	Other than full-time permanent	72	74	75
11.5	Other personnel compensation	650	670	679
11.9	Total personnel compensation	10,427	10,861	11,010
12.1	Civilian personnel benefits	3,601	3,715	3,766
	Personal compensation and benefits	14,028	14,576	14,776
21.0	Travel and transportation of persons	180	275	275
22.0	Transportation of things	9	3	3
23.2	Rental payments to others	4	4	4
23.3	Communications, utilities, and miscellaneous	196	199	201
23.0	Total rent, communications, and utilities	200	203	205
24.0	Printing and reproduction	15	15	15
25.1	Advisory and assistance services	1,484	29	29
25.2	Other services from non-Federal sources	938	850	876
25.3	Purchases of goods/services from Government accounts	1,105	1,184	1,762
25.4	Operation and maintenance of facilities (includes ARP)	311	11	11
25.6	Medical care	14	14	14
25.7	Operation and maintenance of equipment	108	110	10
25.0	Total other contractual services	3,960	2,198	2,702
26.0	Supplies and materials	1,360	1,372	1,174
31.0	Equipment (includes ARP)	521	1,115	10,050
32.0	Land and structures (includes ARP)	11,388	13,185	8,100
	Total other-than-personnel	17,633	18,366	22,524
99.9	Total obligations	31,661	32,942	37,300



**DEPARTMENT OF TRANSPORTATION  
SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION  
Personnel Summary**

<b>Identification code 69-4089-0-3-403</b>	<b>2014 ACTUAL</b>	<b>2015 ENACTED</b>	<b>2016 REQUEST</b>
Total compensable work years:			
5001 Full-time equivalent employment	131	144	144
5005 Full-time equivalent of overtime and holiday hours	4	6	6

**DEPARTMENT OF TRANSPORTATION**  
**SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**  
**Balance Sheet**  
*(In thousands of dollars)*

Identification code 69-4089-0-3-403	2013 ACTUAL	2014 ACTUAL
<b>Assets:</b>		
Federal assets:		
1101 Fund balance with Treasury	21,386	21,529
1106 Receivables, net	0	0
1107 Advances and prepayments	0	0
Non-Federal assets:		
1201 Investments in non-Federal securities	0	0
1206 Receivables, net	111	74
1207 Advances and prepayments	0	0
Other Federal assets:		
1801 Cash and other monetary assets	11,451	10,326
1803 Property, plant and equipment, net	111,961	123,201
1901 Other assets	4,842	5,429
<b>1999 Total assets</b>	<b>149,751</b>	<b>160,559</b>
<b>Liabilities:</b>		
Federal liabilities:		
2101 Accounts payable	0	0
Non-Federal liabilities:		
2201 Accounts payable	5,109	4,415
2206 Pension and other actuarial liabilities	4,815	4,742
2207 Other	0	0
<b>2999 Total liabilities</b>	<b>9,924</b>	<b>9,157</b>
<b>Net Position:</b>		
3200 Invested capital	127,106	138,358
3300 Cumulative results of operations	12,721	13,044
<b>3999 Total net position</b>	<b>139,827</b>	<b>151,402</b>
<b>4999 Total liabilities and net position</b>	<b>149,751</b>	<b>160,559</b>

**DEPARTMENT OF TRANSPORTATION**  
**SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**  
**Summary of Expenses by Activity**  
*(In thousands of dollars)*

<b>Identification code 69-4089-0-3-403</b>	<b>2014 ACTUAL</b>	<b>2015 ENACTED</b>	<b>2016 REQUEST</b>
<b>Operations and Maintenance:</b>			
1. Lock and Marine Operations	3,846	4,154	4,267
2. Maintenance and Engineering	5,115	5,524	5,675
3. General and Development	4,586	4,953	5,088
4. Administrative	3,714	4,011	4,120
<b>Total Operations and Maintenance</b>	<b>17,261</b>	<b>18,642</b>	<b>19,150</b>
<b>Replacements and Improvements:</b>			
1. Equipment	319	1,115	10,050
2. Capital Projects	14,081	13,185	8,100
<b>Total Replacements and Improvements</b>	<b>14,400</b>	<b>14,300</b>	<b>18,150</b>
<b>Total Obligations</b>	<b>31,661</b>	<b>32,942</b>	<b>37,300</b>
<b>Authorized Positions by Activity:</b>			
1. Lock and Marine Operations	51	51	51
2. Maintenance and Engineering	51	51	51
3. General and Development	15	15	15
4. Administrative	27	27	27
<b>Total Authorized Positions</b>	<b>144</b>	<b>144</b>	<b>144</b>

**DEPARTMENT OF TRANSPORTATION**  
**SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**  
**Summary of Travel and Transportation of Persons**  
*(In thousands of dollars)*

<b>Identification code 69-4089-0-3-403</b>	<b>2014 ACTUAL</b>	<b>2015 ENACTED</b>	<b>2016 REQUEST</b>
<b>Field Offices:</b>			
Business travel			
Operations	28	59	59
Administrative	0	0	0
Travel associated with training, conferences, and workshops	22	63	63
Travel to and from Washington, D.C.	1	1	1
Travel to and from Massena, N.Y.	0	0	0
Foreign travel	0	0	0
Canadian travel	7	27	27
<b>Subtotal</b>	<b>58</b>	<b>150</b>	<b>150</b>
<b>DC Office:</b>			
Business travel			
Operations	4	4	4
Administrative	9	9	9
Travel associated with training, conferences, and workshops	31	32	32
Travel to and from Washington, D.C.	1	1	1
Travel to and from Massena, N.Y.	16	17	17
Foreign travel	18	19	19
Canadian travel	41	43	43
<b>Subtotal</b>	<b>120</b>	<b>125</b>	<b>125</b>
<b>Asset Renewal Program</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>Grand Total</b>	<b>180</b>	<b>275</b>	<b>275</b>





# **U.S. St. Lawrence Seaway Asset Renewal Program Capital Investment Plan *FYs 2016-2020***



**Saint Lawrence Seaway  
Development Corporation**



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, Quebec, 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, Eisenhower and Snell, located in Massena, N.Y.

The SLSDC coordinates its activities with its Canadian counterpart, the St. Lawrence Seaway Management Corporation (SLSMC), to ensure that the U.S. portion of the St. Lawrence Seaway is available for commercial transit throughout the navigation season (typically late March to late December). The SLSDC also performs environmental management activities and promotes Great Lakes regional economic development.

For more information on the SLSDC, visit <http://www.greatlakes-seaway.com>.





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**Saint Lawrence Seaway Development Corporation**  
**U.S. Seaway Asset Renewal Program**  
**Capital Investment Plan**  
**FYs 2016-2020**

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**Background**

Operated and maintained by the U.S. Saint Lawrence Seaway Development Corporation (SLSDC) and the Canadian St. Lawrence Seaway Management Corporation (SLSMC), the St. Lawrence Seaway is a unique binational transportation asset, which directly serves an eight-state, two-province region that accounts for one-quarter of the U.S. gross domestic product (GDP), one-half of North America's manufacturing and services industries, and is home to nearly one-quarter of the continent's population. The Great Lakes region is the world's fourth largest economy with annual economic output of nearly \$5 trillion.

Since the 15-lock binational waterway's opening in 1959, nearly 3 billion metric tons of cargo has moved on the St. Lawrence Seaway valued at \$400 billion. Additionally, maritime commerce on the Great Lakes Seaway System provides shippers with approximately \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation. Great Lakes Seaway System ships also remain more fuel-efficient and emit less greenhouse gases per thousand cargo-ton miles than land-based alternatives (*see page 8 for environmental and social impacts study background*). The Great Lakes/Seaway fleet is nearly 7 times more fuel-efficient than trucks and 1.14 times more fuel-efficient than rail. Moreover, it would take 3 million railcars or 7.1 million trucks to carry the total cargo transported by the Great Lakes/Seaway fleet.

The waterway also produces significant economic benefits to the Great Lakes region. In fact, an economic impact study completed in 2011 concluded that maritime commerce on the Great Lakes Seaway System sustains 227,000 U.S. and Canadian jobs, \$35 billion in transportation-related business revenue, \$14 billion in personal income, and \$5 billion in federal, state, provincial, and local taxes each year (*see page 7 for economic impact study background*). The SLSDC remains dedicated to promoting the economic and environmental benefits of the marine mode, attracting new cargoes to the Seaway, and leveraging technology to enhance performance and safety.

To continue providing these economic benefits to the United States and Canada, the binational St. Lawrence Seaway must remain available, efficient, and competitive for commercial transportation. To achieve these goals, the Seaway's infrastructure, which has reached the end of its original "design" life, must be renewed through reinvestment on both sides of the border.



## **Summary**

Starting in 2009, the SLSDC initiated its multi-year Asset Renewal Program (ARP) for its navigation infrastructure and facilities. The projects and equipment included in the ARP Capital Investment Plan (CIP) address various needs for the two U.S. Seaway locks, the Seaway International Bridge, maintenance dredging, operational systems, and Corporation facilities and equipment. The start of the program marked the first time in the Seaway's 50-year history that a coordinated effort to repair and modernize the U.S. Seaway infrastructure had taken place. None of the ARP investments result in increases to the authorized depth or width of the navigation channel or to the size of the two locks.

In the first six years of ARP funding (FYs 2009-2014), the SLSDC obligated \$94 million on more than 43 separate projects (*see page 21*). These projects included maintenance dredging in the U.S. portion of the Seaway navigation channel, lock culvert valve machinery upgrade to hydraulic operation, structural rehabilitation and corrosion prevention work on the Seaway International Bridge, gatelifter upgrades, and miter gate rehabilitation, as well as various other structural and equipment repairs and/or replacement.

For the FY 2016-2020 period, the Seaway ARP/CIP includes 45 separate ARP projects and equipment estimated at \$98.9 million with total funding for each year of the plan constrained to funding targets for those years as approved by the Secretary and subject to annual appropriations. Projects and estimates included in the current ARP five-year plan are detailed on pages 10-20 and 22-23. It is important to note that dollar amounts for ARP projects are "project feasibility" estimates that can vary by an industry-recognized standard of 20-30 percent. Project estimates and schedules may fluctuate at various points in the lifespan of the ARP and will be revised as needed and on a continuing basis throughout the length of the ARP.

This ARP/CIP also includes the extension of the program, which was introduced last year, beyond its originally scheduled completion in FY 2018. This extension serves two purposes: (1) to ensure the completion of all original ARP projects, several of which were deferred in order to meet lower-than-estimated annual funding levels in recent years; and (2) to allow the SLSDC to address recurring capital needs beyond the timeframe of the original ARP as it transitions to a more structured capital asset management program. Any reductions from the current estimates will further increase the program's overall costs and require additional years for the program to be completed.

The SLSDC's ARP is resulting in not only modernized infrastructure and new equipment to ensure the long-term reliability of the St. Lawrence Seaway, but it is also having a positive and significant impact on the Upstate New York economy. In fact, approximately two-thirds of the ARP funds obligated during the program's first six years, totaling more than \$60 million, were awarded within the region. In addition to these contracts, the ARP is producing \$1.5-\$2.5 million in additional economic benefits to the region (local permanent and temporary hires, local spending on supplies and equipment, lodging, meals, etc.) each year.

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 (USACE) for similar work completed at other U.S. locks; (3) consultation with the SLSMC for similar work completed at the Canadian Seaway locks; and

(4) utilization of data from RSMeans<sup>®</sup>, which serves as North America's leading supplier of construction cost information. In several cases, estimates for FYs 2016-2020 have been revised for the latest five-year plan based on either actual bids for similar ARP work and/or more complete designs.

Although the majority of ARP work is completed by contractors, the SLSDC federal workforce is directly responsible for completing several of the maintenance-related projects as well as pre-contract work, including preparation of designs, specifications, and drawings.

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 at any one of the 15 U.S. or Canadian Seaway locks would cause system-wide delays. In 1985, a lock wall 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 (\$54 million in 2014 dollars). The ARP program is vital to ensuring system availability and the flow of goods via the St. Lawrence Seaway.

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* (see pages 5-6 for background). The study 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 U.S. Army Corps of Engineers (USACE) to leverage their expertise.

The Canadian Seaway locks along the St. Lawrence River are identical in age and design to those owned by the U.S. SLSDC. In the past decade prior to the SLSDC's ARP, the Canadian Government began addressing its own Seaway asset capital reinvestment needs. Together, the SLSDC and SLSMC have spent \$350 million over the past five years and have projected asset renewal expenses of nearly \$500 million over the next five years. Many of the lock-related ARP improvements at the U.S. locks will parallel activities either completed, underway, or planned at the Canadian Seaway locks.

These significant investments clearly demonstrate the commitment of the United States and Canada to the long-term health and vitality of the Great Lakes Seaway System, complementing similar investments being made by many other Seaway System stakeholders, including ports, terminals, and carriers.

In January 2015, a report was released highlighting public and private investments in the Great Lakes St. Lawrence Seaway navigation system (see page 9 for background). The report, which was based on a survey of more than 450 U.S. and Canadian public organizations and private companies, found that \$6.9 billion is being spent on asset renewal and infrastructure improvements in the Great Lakes St. Lawrence Seaway navigation system by both the public and private sectors. Between 2009-2013 more than \$4.7 billion has been invested in ships, ports and terminals, and waterway infrastructure, while an additional \$2.2 billion in capital spending has been committed for infrastructure investments in the system by companies and governments.

### **Seaway ARP Internal Working Group**

In 2008, the SLSDC created the ARP Internal Working Group, made up of senior managers in engineering, procurement, financial management, budget, counsel, and policy, to ensure that the multi-year program is executed properly and efficiently as well as to identify any possible concerns throughout the process.

The group convenes every two weeks to review the status of ARP projects and to collectively discuss ways to improve the overall management, execution, and reporting of the program on an ongoing basis.

### **SLSDC Strategic and Performance Goals**

The projects included in the SLSDC's ARP/CIP specifically target the Corporation's core strategic goals related to "Safety, Security and the Environment" and "Reliability and Availability" as well as the U.S. Department of Transportation's strategic goal of "Economic Competitiveness".

The SLSDC's principal performance measure of U.S. St. Lawrence Seaway System Reliability is highlighted in the U.S. Department of Transportation's annual Performance and Accountability Report. The annual goal for providing reliability of the U.S. portion of the St. Lawrence Seaway, including the two U.S. Seaway locks, to its commercial users is 99 percent. In measuring system downtime, the SLSDC includes minutes/hours of delay for weather, including visibility; vessel incidents; insufficient water levels or high velocities; and lock equipment malfunction.

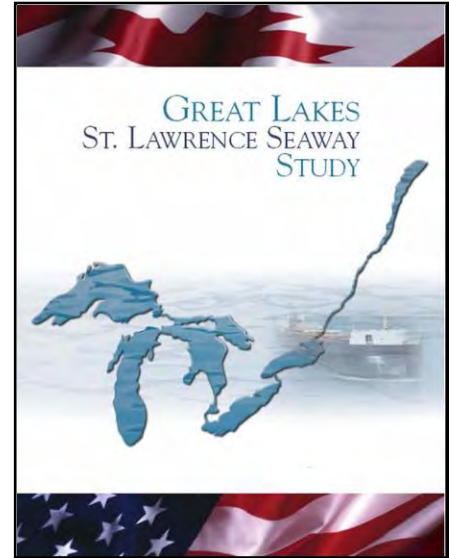
The U.S. Seaway System reliability rate for FY 2014 was 97.2 percent. Severe weather and ice conditions at the end of the 2013 season and start of the 2014 season caused significant system-wide delays. December 2013 delays totaled more than 53 hours, while April 2014 delays totaled 17 hours. The historic winter weather conditions and ice levels in the Seaway System were the primary cause of these delays. The SLSDC has the most control over the proper functioning of its lock equipment. In FY 2014, lock-related delays totaled only 15 percent of all FY 2014 System delays.

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 at risk. Although the SLSDC has maintained a 99 percent reliability rate over its history, the ARP is necessary to accomplish this level in the future.

## ***Binational Great Lakes St. Lawrence Seaway Study Background Information***

On November 26, 2007, the U.S. and Canadian governments released its binational Great Lakes St. Lawrence Seaway Study (Study) – a joint project to assess the ongoing maintenance and long-term capital requirements of the commercial maritime navigation infrastructure of the Great Lakes St. Lawrence Seaway System. In particular, this infrastructure includes the 15 U.S. and Canadian-operated locks of the St. Lawrence Seaway as well as the Soo locks operated and maintained by the U.S. Army Corps of Engineers.

Seven Canadian and U.S. departments and agencies were involved in the multi-year study: Transport Canada, U.S. Department of Transportation, U.S. Army Corps of Engineers, SLSMC, SLSDC, Environment Canada, and the U.S. Fish and Wildlife Service. Their representatives formed a Steering Committee responsible for the Study's overall strategic direction. Study tasks and analyses were overseen by a Management Team consisting of one representative from Transport Canada and one from the Corps.



The three objectives of the Study were to:

- Evaluate the condition and reliability of the Great Lakes Seaway System, including the relative benefits and costs of continuing to maintain the existing transportation infrastructure on which it depends;
- Assess the engineering, economic, and environmental factors associated with current and future needs of the Great Lakes St. Lawrence Seaway System; and
- Identify factors and trends affecting the domestic and international marine transportation industries using the System, including evolving intermodal linkages and transportation technologies.

The final report included a detailed engineering analysis of the System's current infrastructure. This infrastructure is divided into four groups: the USACE's Soo locks in Sault Ste. Marie, Mich.; the eight Canadian locks at the Welland Canal that allow marine circumvention of Niagara Falls; the five Canadian locks in the St. Lawrence River; and the two U.S. St. Lawrence River locks owned and operated by the SLSDC.

The Study also includes an economic analysis of the costs and benefits associated with maintaining the System's infrastructure at its current state of reliability. The final report identifies factors and trends affecting the domestic and international marine transportation industries using the System. In addition, with the active participation and the endorsement of Environment Canada and the U.S. Fish and Wildlife Service, the Study is a unique commercial navigation assessment in that it incorporates an environmental analysis.

Among the Study's important findings are:

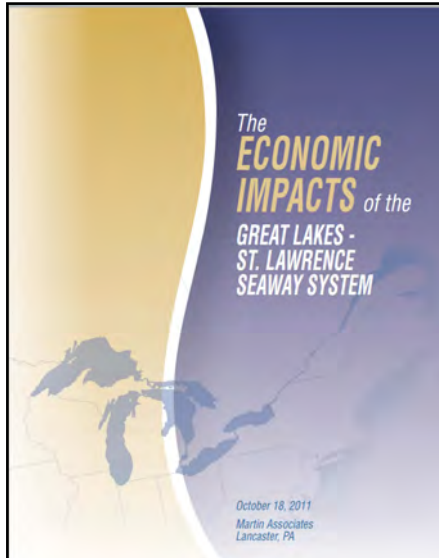
- The Great Lakes St. Lawrence Seaway System continues to play a decisive role in the economic life of North America. An economic analysis concluded that the Great Lakes Seaway System provides approximately \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation. These savings are especially felt in strategic sectors such as steelmaking and energy, the competitiveness of which is vital to the health of the North American economy.
- The System also offers shippers considerable spare capacity. This is becoming increasingly significant as highways and rail lines in the region experience growing congestion. The Great Lakes Seaway System can play an important role in relieving some of these pressures by offering complementary transportation routes through less busy ports and by moving goods directly across lakes rather than around them.
- The commercial maritime lock infrastructure of the System has reached or exceeded its original design life and requires capital investment in order for the System to remain reliable and competitive.

The Study provided specific considerations and conclusions:

- The System has the potential to alleviate congestion on the road and rail transportation networks as well as at border crossings in the Great Lakes basin and St. Lawrence River region.
- A stronger focus on short sea shipping would allow the System to be more closely integrated with the road and rail transportation systems, while providing shippers with a cost-effective, timely and reliable means to transport goods.
- 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.
- The long-term health and success of the System will depend in part on its sustainability, including the further reduction of negative ecological impacts caused by commercial navigation.

*(The report is available at: [www.greatlakes-seaway.com/en/pdf/glsf-final-report-en.pdf](http://www.greatlakes-seaway.com/en/pdf/glsf-final-report-en.pdf))*





## ***Great Lakes Seaway System Economic Impact Study Background Information***

On October 18, 2011, the Great Lakes maritime industry released the results of a year-long study of the economic impacts of the entire Great Lakes-St. Lawrence Seaway navigation system. The study was commissioned by members of the marine shipping industry, in partnership with U.S. and Canadian government agencies. Martin Associates of Lancaster, Pa., a global leader in transportation economic analysis and strategic planning, was retained to conduct the study.

The study found that maritime commerce supported 227,000 U.S. and Canadian jobs, \$35 billion in transportation-related business revenue, \$14 billion in personal income, and \$5 billion in federal, state, provincial, and local taxes each year. North American farmers, steel producers, construction firms, food manufacturers, and power generators depend on the 164 million metric tons of essential raw materials and finished products that are moved annually on the system. Additionally, marine shipping saves companies approximately \$3.6 billion per year in transportation costs compared to the next least-costly land-based alternative.

The report provides the navigation community, transportation planners, government policymakers and the general public with a realistic assessment of the contributions made by the Great Lakes Seaway System to the federal, state/provincial, and local economies. The region depends on ocean vessels, U.S. and Canadian lake carriers, and barges to deliver iron ore, coal, stone, salt, sugar, grain, steel, wind turbine components, and heavy machinery to keep binational businesses running.

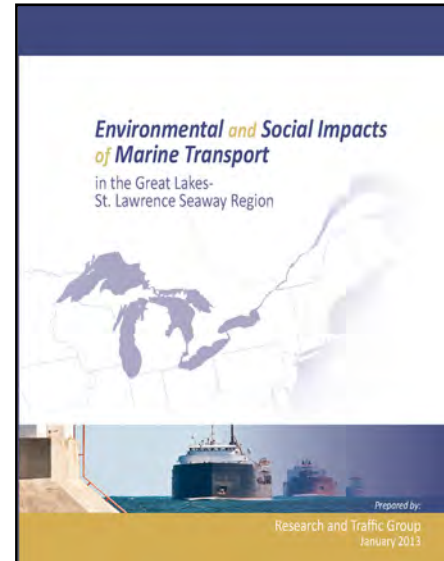
*(The report is available at: [www.greatlakes-seaway.com/en/pdf/eco\\_impact\\_full.pdf](http://www.greatlakes-seaway.com/en/pdf/eco_impact_full.pdf))*



## ***Great Lakes Seaway System Marine Transportation Environmental and Social Impacts Background Information***

On February 5, 2013, a new study titled *The Environmental and Social Impacts of Marine Transport in the Great Lakes-St. Lawrence Seaway Region* was released that found that Great Lakes Seaway System ships are more fuel-efficient and emit fewer greenhouse gases per thousand cargo-ton miles than land-based alternatives. The study was conducted by Ontario transportation consultants Research and Traffic Group.

The study also calculated that the shift from marine to road and/or rail modes of transport would lead to increased societal impacts including additional traffic congestion, higher infrastructure maintenance costs, and significantly greater levels of noise.



In terms of energy efficiency and greenhouse gas emissions, the study finds that:

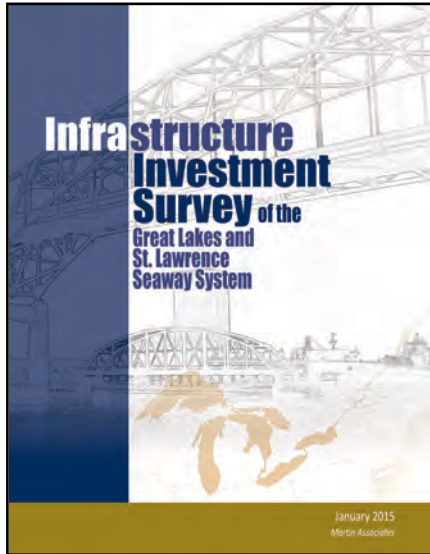
- The Great Lakes/Seaway fleet is nearly 7 times more fuel-efficient than trucks and 1.14 times more fuel-efficient than rail.
- Rail and trucks would emit 19 percent and 533 percent more greenhouse gas emissions respectively if these modes carried the same cargo the same distance as the Great Lakes/Seaway fleet.

The study also emphasizes the significant role that marine shipping plays in reducing congestion on roads and railways:

- It would take 3 million railcars to carry the total cargo transported by the Great Lakes/Seaway fleet in 2010, as much as double the existing traffic on some rail lines in Canada and at least a 50 percent increase in traffic on some of the busiest lines in the U.S.
- It would take 7.1 million trucks to carry the total cargo transported by the Great Lakes/Seaway fleet in 2010, increasing existing truck traffic by between 35 and 100 percent.
- If Great Lakes/Seaway marine shipping cargo shifted permanently to trucks, it would lead to \$4.6 billion in additional highway maintenance costs over a 60-year period.

(The report is available at: [www.greatlakes-seaway.com/en/pdf/impacts-full\\_en.pdf](http://www.greatlakes-seaway.com/en/pdf/impacts-full_en.pdf))





### ***Great Lakes Seaway System Public-Private Sector Infrastructure Investment Survey Background Information***

The results of a year-long infrastructure investment survey were released in January 2015 by the American Great Lakes Ports Association and the Canadian Chamber of Marine Commerce.

The survey report, *Infrastructure Investment Survey of the Great Lakes and St. Lawrence Seaway System*, was commissioned by a coalition of U.S. and Canadian Great Lakes-Seaway maritime industry stakeholders, including the SLSDC, and was conducted by Martin Associates of Lancaster, Pennsylvania.

The purpose of the survey was to document the level of public and private sector investments being made throughout the navigation system. More than 600 entities, including vessel operators, ports, terminals, and government agencies were contacted.

The survey quantifies investments made over the past five years (2009-2013), as well as amounts already committed for future years. Data is broken out by industry sector, by country, by state and province, and by public vs. private sector.

Key survey findings include:

- A total of \$7 billion is being spent on asset renewal and infrastructure improvements by both public and private sectors.
- Between 2009-2013, more than \$4.7 billion has been invested in ships, ports and terminals, and waterway infrastructure.
- An additional \$2.2 billion has been committed for infrastructure investments in the system by companies and governments. The SLSDC's ARP is a subset of this investment amount.
- American, Canadian, and international ship owners are spending more than \$4 billion on the biggest renewal of the Great Lakes fleets in 30 years.
- Total port, terminal and waterway infrastructure investments by state and province total \$2.9 billion.

*(The report is available at: [www.greatlakesports.org/pp/uploads/investment\\_survey\\_final\\_version\\_lr.pdf](http://www.greatlakesports.org/pp/uploads/investment_survey_final_version_lr.pdf))*

## SUMMARY OF SLSDC ARP CAPITAL AND MAINTENANCE PROJECTS

### FYs 2016-2020

### \$98,875,000

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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.

Dollar amounts for ARP projects are "project feasibility" estimates that can vary by an industry-recognized 20-30 percent. Funding for each year of the ARP is constrained to annual funding targets as approved by the Secretary and subject to annual appropriations. Project estimates and schedules may fluctuate at various points in the lifespan of the ARP and will be revised as needed throughout the length of the ARP. Many of the projects listed below have additional ARP-related project costs beyond this five-year plan.

- (1) **Project No. 1: Both Locks – Replace Fendering on Approach Walls (Capital Project) (FYs 2018, 2019, and 2020 – \$900,000)** – This project is to replace the composite fendering on the downstream guidewall extension at both locks. The existing composite fenders were a trial design installed nearly 25 years ago which have become very difficult/expensive to maintain and are in need of replacement to insure that vessels using this approach wall are not damaged due to the condition of the existing fendering. This project needs to be extended to include the replacement of wood fendering on the approach walls at both locks with rubber fenders. This is necessary due to the fact that the cost of the wood fenders is increasing such that the rubber fenders have become cost competitive and rubber fenders that have been installed to date have performed well. *(Project funds obligated in FY 2009, FY 2010, and FY 2014)*
- (2) **Project No. 5: Both Locks – Rehabilitate Winter Maintenance Lock Covers (Capital Project) (FYs 2017 and 2019 – \$50,000)** – This project is for rehabilitating the roof modules used to cover Eisenhower and Snell Locks when major winter maintenance projects are planned. These covers are over 50 years old and require rehabilitation. By installing the new access panels, SLSDC staff will no longer be required to remove entire roof cover modules to access work areas. *(Project funds obligated in FY 2009, FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014)*

- (3) **Project No. 8: Floating Navigational Aids – Upgrade/Replace (Capital Project)** (FYs 2017, 2018, 2019, and 2020 – \$700,000) – 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 funds obligated in FY 2009, FY 2010, FY 2013, and FY 2014*)
- (4) **Project No. 9: Corporation Equipment – Replace Heavy and Light Equipment, Maintenance Vehicles and Shop Equipment (Capital Project, Capital Equipment, and Non-Capital Maintenance Equipment)** (FYs 2017, 2018, 2019, and 2020 – \$1,050,000) – This is an ongoing program to replace heavy and light equipment, vehicles and shop equipment as they become worn out and unserviceable. Heavy and light equipment include such items as a crane, dump truck, snowplow, backhoe, grader, front-end loader and assorted shop equipment. Equipment and vehicles are inspected regularly and their replacement is prioritized based on the results of those inspections. (*Project funds obligated in FY 2009, FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014*)
- (5) **Project No. 10: Both Locks – Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities (Non-Capital Maintenance Project)** (FYs 2016, 2017, 2018, 2019, and 2020 – \$250,000) – 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 use diesel generators, which are expensive to operate, to continue operation of Eisenhower and Snell Locks and the Maintenance Facility. Additionally, the diesel generators will not provide enough power to support all lock and maintenance operations. (*Project funds obligated in FY 2009, FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014*)
- (6) **Project No. 11: Fixed Navigational Aids – Rehabilitate (Capital Project and Non-Capital Maintenance Project)** (FYs 2016, 2017, 2018, 2019, and 2020 – \$400,000) – This project is for rehabilitating fixed navigational aids in the Seaway. Many of the structures are more than 50 years old and are in need of more than routine repairs. Many of these structures have concrete bases that are partially underwater and have experienced varying degrees of damage from water, ice, and freeze-thaw cycles. The inspection of these structures has been completed by divers. Any repairs to the foundations will also require divers as well as the use of a tug and barge with crane to complete. Failure of a fixed aid would likely make replacement necessary at a cost significantly higher than repairing the existing structure. (*Project funds obligated in FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014*)

- (7) **Project No. 12: Corporation Equipment – Upgrade/Replace Floating Plant (Capital Project, Capital Equipment, and Non-Capital Maintenance Project) (FYs 2016, 2017, and 2018 – \$24,000,000)** – This is an ongoing program to rehabilitate and/or replace the Corporation's floating plant that is utilized for maintaining the locks and navigation channels. This multi-year project includes: replacing the SLSDC's tugboats *Robinson Bay* and *Performance*; upgrading the buoy tender barge; purchasing a boat to be used for hydrographic surveying with upgraded surveying equipment and software; purchasing a small boat for emergency response; purchasing a spud barge/scow for work on navigational aids and for emergency/spot dredging; and rehabilitating the SLSDC's crane barge/gatelifter *Grasse River*, which would have to be utilized if a miter gate were damaged and had to be replaced.

In FY 2013, the SLSDC contracted with the naval architect and marine engineering firm Robert Allan Ltd. to complete a replacement vs. upgrade/rehabilitate cost analysis for the SLSDC's tug fleet, which includes the *Robinson Bay* and *Performance*, to meet current regulations and requirements. Findings from Robert Allan Ltd. indicate that the upgrade/rehabilitate option is not economically feasible for the *Robinson Bay* or for the *Performance*.

The *Robinson Bay* is almost 60 years old and the expenses incurred in maintaining it have increased significantly in recent years. Additionally, the tug experienced an on-board fire in the engine room in December 2013 that caused damage to that area. The cause of the fire was determined to be aging materials adjacent to the exhaust piping.

The new *Robinson Bay* tugboat will not only produce lower emissions but will achieve greater operational and cost-savings efficiencies, especially for navigation aid maintenance and retrieval/placement at the end and start of each navigation season. Currently, the SLSDC must use its buoy barge to move or replace any navigation aid and tug crews are unable to bunk onboard the tug during multi-day buoy runs resulting in lodging and other travel-related expenses.

The \$10 million request in the FY 2016 request is the lowest annual amount possible for this project. The tugboat is the SLSDC's primary watercraft for emergency responses, ice breaking operations, navigation aids placement, and other operational activities. It is important to note that the SLSDC's *Robinson Bay* is the only icebreaking asset in the region.

The total cost to replace both tugboats over a four-year period is \$24.8 million. The current estimated four-year funding breakout is as follows: FY 2015 (\$750,000) to award the large tug (*Robinson Bay* replacement) design; FY 2016 (\$10,000,000) to purchase the parts and equipment and begin construction of the large tug; FY 2017 (\$10,000,000) to complete construction of the large tug and award small tug (*Performance* replacement) design; and FY 2018 (\$4,000,000) to complete construction of the small tug. (*Project funds obligated in FY 2009, FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014*)

- (8) **Project No. 14: Corporation Facilities – Replace Paving and Drainage Infrastructure (Capital Project) (FY 2018, 2019, and 2020 – \$2,500,000)** – This project is for improving the pavement and drainage along lock approach walls as well as the roadways, public parking, and work areas at all Corporation facilities. In Upstate New York, the damage to pavements caused by winter conditions is significant. 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 funds obligated in FY 2009 (combined with ARP Project No. 3), FY 2010, and FY 2011)*
- (9) **Project No. 15: Eisenhower Lock Highway Tunnel – Rehabilitate (Capital Project and Non-Capital Maintenance Project) (FY 2018 – \$400,000)** – This is an ongoing project to maintain the highway tunnel which goes through the upper sill area of Eisenhower Lock, providing 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, upgrading the tunnel lighting, 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 funds obligated in FY 2009, FY 2010, FY 2011, FY 2012, and FY 2014)*
- (10) **Project No. 16: Corporation Technologies - Upgrade GPS/AIS/TMS (Capital Project and Capital Equipment) (FYs 2018 and 2020 – \$250,000)** – 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 funds obligated in FY 2009, FY 2010, FY 2012, and FY 2013)*
- (11) **Project No. 17: Navigation Channels – Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments (Non-Capital Maintenance Project) (FYs 2017 and 2020 – \$9,000,000)** – This project is for dredging of the U.S. Seaway navigation channel to remove sediment and to maintain the design grade for the channel bottom. Maintenance dredging areas include the intermediate pool (between Eisenhower and Snell Locks), the international tangent section to the east of Snell Lock, and several other sections of U.S. waters west of Eisenhower Lock. FY 2017 and 2020 funding will address high spots that still remain from earlier year maintenance dredging and begin work on other sections of the St. Lawrence River under U.S. jurisdiction. *(Project funds obligated in FY 2009, FY 2011, FY 2012, FY 2013, and FY 2014)*

- (12) **Project No. 20: Both Locks – Upgrade Lock Status/Controls (Capital Project and Non-Capital Maintenance Project) (FYs 2017, 2018, 2019, and 2020 – \$200,000)** – 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 funds obligated in FY 2009, FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014)*
- (13) **Project No. 21: Both Locks – Compressed Air Systems – Upgrade/Replace (Capital Project) (FY 2019 – \$200,000)** – This project is for replacing the compressors and corroded piping at Snell Lock 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 funds obligated in FY 2009, FY 2010, FY 2011, and FY 2012)*
- (14) **Project No. 22: Both Locks – Install Vessel Self Spotting Equipment (Capital Project) (FYs 2018 and 2019 – \$1,000,000)** – This project is for installing equipment at the U.S. Seaway locks such that transiting vessels can spot/locate themselves in the lock. This new technology, once fully implemented, will eliminate the need for Lock Operations' personnel to spot vessels in a lock. The Canadian St. Lawrence Seaway Management Corporation (SLSMC) has already completed testing and installation of this new technology at their locks. *(Project funds obligated in FY 2014)*
- (15) **Project No. 23: Both Locks – Install Vessel Vacuum Mooring Systems (Capital Project) (FY 2016 – \$8,000,000)** – This project is for installing hands-free vacuum mooring equipment at both Eisenhower and Snell Locks to hold vessels in place while they are in the lock instead of using wire ropes deployed by the vessel's crew to tie the vessel to bollards on the lock wall. It is a two-year project (FYs 2015-16) that requires \$8 million in each year.

This new technology, once fully implemented, will reduce the need for SLSDC employees to tie the vessels up while in the lock thereby reducing the risk of injuries resulting from handling the wire ropes. In addition, vessel operating costs would be reduced to reflect smaller crew sizes and less equipment to meet current transit requirements.

The Canadian SLSMC initiated this project and began testing the new technology at their Welland Canal locks in 2007. On-going testing has led to a fourth generation design, which includes three units with two vacuum pads on each unit, mounted in slots in the lock chamber wall. Both the SLSMC and Transport Canada are fully committed to installing this new technology at all 13 of the Canadian Seaway locks by 2017/2018.



- (16) **Project No. 24: Both Locks – Structural Repair – Grout Leaks in Galleries and Recesses (Non-Capital Maintenance Project) (FYs 2018 and 2020 – \$400,000)** – 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 funds obligated in FY 2009)*
- (17) **Project No. 25: Corporation Facilities – Upgrade/Replace Fire Alarm/Protection Systems (Capital Project) (FYs 2017 and 2019 – \$200,000)** – This project is for replacing antiquated fire alarm and fire protection systems at Corporation facilities in Massena, N.Y. *(Project funds obligated in FY 2009 and FY 2011)*
- (18) **Project No. 26: Corporation Facilities – Upgrade Storage for Lock Spare Parts (Capital Project) (FYs 2018, 2019, and 2020 – \$900,000)** – This project is for constructing shelters/buildings for storage of lock spare parts and equipment to prevent them from corroding. Many of these items are currently not stored under cover and/or are stored in old storage sheds that are in need of repair or replacement. *(Project funds obligated in FY 2010, FY 2011, FY 2013, and FY 2014)*
- (19) **Project No. 27: Corporation Facilities – Replace Windows and Doors and Repair Building Facades (Capital Project) (FYs 2018 and 2020 – \$275,000)** – 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 funds obligated in FY 2010, FY 2011, FY 2012, and FY 2013)*
- (20) **Project No. 28: Snell Lock – Walls, Sills and Culverts – Rehabilitate Concrete (Capital Project) (FYs 2018 and 2020 – \$4,000,000)** – 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 as well as filling and emptying culverts and the gate sills by replacing deteriorated/damaged concrete.
- (21) **Project No. 29: Eisenhower Lock – Walls, Sills and Culverts – Rehabilitate Concrete (Capital Project) (FYs 2017 and 2019 – \$4,000,000)** – 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. This project includes resurfacing the mass concrete that forms the locks walls as well as filling and emptying culverts and the gate sills by replacing concrete to depths ranging between approximately 8 inches and 24 inches. *(Project funds obligated in FY 2010)*

- (22) **Project No. 30: Eisenhower Lock – Ice Flushing System – Upgrade (Capital Project) (FY 2017 – \$500,000)** – 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.
- (23) **Project No. 33: Both Locks – Upgrade Drainage Infrastructure in Galleries and Recesses (Capital Project) (FYs 2017 and 2020 – \$450,000)** – This project is to open existing drains or to drill new drains 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 and cause flooding of the galleries and machinery recesses. *(Project funds obligated in FY 2013 and FY 2014)*
- (24) **Project No. 34: Both Locks – Improve Ice Control (Capital Project) (FYs 2017 and 2020 – \$250,000)** – This project is to improve the methods/equipment used to control ice in and around Eisenhower and Snell Locks during the opening and closing of each navigation season. Air curtains and bubblers are currently used to minimize the ice entering a lock chamber and to move it away from the miter gates. Backhoes are used for removing ice from the lock walls, which reduces the width available for transiting vessels. Improving existing systems/equipment and utilizing new technologies would make operations during icy conditions more efficient and would minimize damages to the lock components and transiting vessels. *(Project funds obligated in FY 2010)*
- (25) **Project No. 35: Vessel Mooring Cells – Rehabilitate and Extend (Capital Project) (FYs 2019 and 2020 – \$2,000,000)** – 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 more than 50 years old, are in a state of disrepair and are too short for current Seaway length vessels.
- (26) **Project No. 36: Eisenhower Lock – Diffusers – Replace (Capital Project) (FY 2018 – \$2,500,000)** – This project is to replace deteriorated/damaged concrete in the diffusers at Eisenhower Lock. This includes poor quality concrete used during original construction of the locks as well as concrete that was damaged by freeze-thaw cycles. The diffusers are the outlet structures used to dampen the flow of water when the lock is emptied.
- (27) **Project No. 37: Eisenhower Lock – Construct Drydock for Vessel Maintenance (Capital Project) (FY 2020 – \$2,000,000)** – 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 both the cost of transporting vessels to a drydock typically located in the Great Lakes and the daily rate costs associated with drydocking a vessel.

- (28) **Project No. 38: Both Locks – Upgrade/Replace Emergency Generators (Capital Project) (FY 2018 – \$500,000)** – This project is for replacing the emergency generators at both Eisenhower and Snell Locks and for installing a generator removed from the locks at the Maintenance Facility. The generators at the locks are over 25 years old and cannot carry the total load. Also, installing one of these units at the Maintenance Facility with an automatic transfer switch will enable maintenance activities to continue and will insure that water lines will not freeze and break in the event of a power outage. (*Project funds obligated in FY 2013 and FY 2014*)
- (29) **Project No. 40: Both Locks – Extend Guidewalls in Pool (Capital Project) (FYs 2019 and 2020 – \$9,000,000)** – 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.
- (30) **Project No. 44: Both Locks – Ship Arrestor Machinery – Upgrade/Replace (Capital Project) (FYs 2018 and 2019 – \$1,600,000)** – 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 should a vessel malfunction, making it unable to stop. This operating machinery is more than 50 years old and needs to be upgraded to insure continued reliability.
- (31) **Project No. 45: Flow Control Dikes – Rehabilitate (Capital Project) (FYs 2018 and 2019 – \$1,300,000)** – This project is for placing additional stone on the dikes downstream of Snell Lock to return them to their original cross-section. These dikes were constructed to deflect the outflow from the Moses-Saunders Power Dam, which enters the Seaway navigation channel downstream of Snell Lock, so that it doesn't cause problems for vessels transiting that area. Over time, stones are moved by the forces of the water and ice. Work needs to be done to restore the dikes to their as-constructed condition.
- (32) **Project No. 46: Both Locks – Guidewall Extensions – Rehabilitate (Capital Project) (FYs 2018 and 2019 – \$1,000,000)** – This project is to repair damage to the guidewall extensions located at the upstream end of Eisenhower Lock and at the downstream end of Snell Lock. These structures were erected after original construction of the locks to lengthen the approach walls, which are used to assist vessels entering the locks. These structures are comprised of sheet pile cells with bridge spans and are not as stable as the original mass concrete guidewalls. They have been damaged by vessel impacts over the years and require rehabilitation to maintain their serviceability.
- (33) **Project No. 47: Eisenhower Lock – Vertical Lift Gate – Structural Rehabilitation (Capital Project) (FY 2019 – \$2,000,000)** – This project is for blast cleaning and painting the vertical lift gate at Eisenhower Lock to prevent further corrosion. The vertical lift gate is an emergency closure designed to be raised in the event of a miter gate failure to prevent loss of the power pool. This gate has not been cleaned and painted in over 25 years.

- (34) **Project No. 48: Both Locks – Stiffleg Derricks – Replace (Capital Project) (FYs 2018 and 2019 – \$4,000,000)** – This project is for replacing the structural components of the stiffleg derricks at both Eisenhower and Snell Locks. There is a stiffleg derrick located at each end of each lock. These are hoisting devices utilized to place the stoplogs, which are the temporary closure structures required for dewatering a lock for inspection and/or repair of the underwater components. These units are of riveted construction, are over 50 years old and are experiencing crevice corrosion.
- (35) **Project No. 50: Snell Lock – Diffusers – Replace (Capital Project) (FY 2018 – \$2,500,000)** – This project is to replace deteriorated/damaged concrete in the diffusers at Snell Lock. This is primarily 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.
- (36) **Project No. 51: Corporation Facilities – Upgrade Physical Security to Meet HSPD-12 Requirements (Capital Project and Non-Capital Maintenance Project) (FYs 2016, 2018, and 2020 – \$150,000)** – This project is for procuring the Personal Identity Verification (PIV) cards required by the Department as well as the procurement and installation of necessary PIV card readers and other required infrastructure to meet HSPD-12 requirements. *(Project funds obligated in FY 2010, FY 2011, FY 2012, FY 2013, and FY 2014)*
- (37) **Project No. 52: Corporation Facilities – Eisenhower Lock Visitors’ Center – Replace/Upgrade (Capital Project) (FYs 2017 and 2018 – \$4,800,000)** – The SLSDC is proposing to replace the Dwight D. Eisenhower Lock Visitors’ Center with a new facility. Each year, the 50-year-old Center is visited by more than 50,000 people and is an important attraction for Upstate New York tourism. The Center provides historical displays on the St. Lawrence Seaway and U.S. President Eisenhower and also includes observation decks for tourists to watch vessels transiting the lock. Earlier requests for this project were denied and the SLSDC was directed to complete a more thorough analysis of the feasibility of and costs associated with the renovation vs. construction.

In the summer of 2011, the SLSDC contracted with the architect, engineering, and land surveying firm Aubertine and Currier Architects to perform a condition survey, conceptual design, and cost analysis for the Visitors’ Center for the two options – renovation and new construction. At that time, the cost estimate to construct a new center was \$3.9 million, while the renovation option was \$3.8 million.

In 2014, the SLSDC awarded a contract to construct a new restroom and security guard facility and to replace the Center’s 50-year-old septic system. The septic system and restroom have been problematic for nearly a decade and SLSDC maintenance teams have made numerous repairs to the septic system and restrooms to keep them in operation. The new system and restroom will reduce annual maintenance work and expenses. The new security checkpoint will replace the temporary trailer that has been used by the Visitors’ Center seasonal security personnel for the past decade. The new security/restroom facility is expected to be operational for the start of the 2015 summer season.

As part of this first phase of Center improvements, the SLSDC again contracted with Aubertine and Currier to perform preliminary design work as well as look at how the FY 2014 improvements could be integrated with either a renovated or a newly constructed main facility. As part of its work, Aubertine and Currier updated the renovation vs. new construction cost estimates to reflect the inclusion of the first phase of work to be funded in FY 2014. The updated preliminary construction cost estimates were \$3.1 million for a new facility as compared to \$2.9 million for refurbishing the current building.

In its draft findings, Aubertine and Currier noted:

*“Our professional opinion (based upon scope of work and cost to renovate the existing facility) would be to start by removing the existing Security Trailer and abating and demolishing the existing Restroom Facility as part of Phase I. We would then suggest building a new Security/Restroom Building as outlined in this study. As part of Phase II (being that there is very little to salvage) we would suggest abating and demolishing the 1950’s Visitors’ Center and building a new energy-efficient facility to meet the needs of the public, the SLSDC, the security setbacks, and other current codes and regulations.”*

A new facility will address many of the shortcomings of the current one, including security, operational safety (current center location does not allow crane accessibility on the south side of the lock), and accessibility to the disabled. *(Project funds obligated in FY 2011, FY 2013, and FY 2014)*

- (38) **Project No. 57: Corporation Technologies – Upgrade Network Security (Capital Project and Non-Capital Maintenance Project) (FYs 2017, 2018, 2019, and 2020 – \$300,000)** – This project enhances and improves the SLSDC’s IT network infrastructure and security in Massena, N.Y. The growth of more technology-based ARP improvements is resulting in an increased need to expand and refine the SLSDC’s network environment. The SLSDC is working closely with DOT’s Office of the Chief Information Officer to coordinate and make these improvements. *(Project funds obligated in FY 2011, FY 2012, and FY 2013)*
- (39) **Project No. 58: Corporation Facilities – Upgrades to Meet Sustainability and Energy Goals (Capital Project) (FYs 2017, 2018, 2019, and 2020 – \$350,000)** – This project is to implement the recommendations of an energy/water conservation audit and a retro-commissioning study both of which were conducted by consultants. These upgrades will be made to meet the sustainability requirements of the various executive orders and acts. *(Project funds obligated in FY 2011, FY 2012, FY 2013, and FY 2014)*

- (40) **Project No. 59: Corporation Facilities – Communications Improvements (Capital Project) (FYs 2018 and 2019 – \$400,000)** – This is a multi-year project to upgrade the communication equipment/systems utilized by SLSDC Operations and Maintenance personnel and by Vessel Traffic Controllers to communicate with commercial vessel crews. SLSDC personnel are currently unable to communicate when working in the machinery recesses at the locks. Installing new equipment to provide this service will increase the safety for personnel working in these areas and improve their ability to troubleshoot and resolve machinery problems at these locations. Additionally, SLSDC Vessel Traffic Controllers have been experiencing recent problems with the equipment used to communicate with commercial vessel crews. Upgrading this equipment will improve the quality and reliability of these communications, which are critical to safe and efficient navigation in the Seaway.
- (41) **Project No. 60: Both Locks – Improve Access and Rehabilitate Machinery in Crossovers and Recesses (Capital Project) (FYs 2017, 2018, 2019, and 2020 – \$1,100,000)** – This project is a multi-year project to rehabilitate the operating machinery that is located within the crossover galleries and recesses at both locks. This equipment will be cleaned and coated to remove existing and to prevent further corrosion. In addition, severely corroded components such as support structures and anchor bolts will be replaced with corrosion resistant materials.
- (42) **Project No. 61: Both Locks – Replace Recess Covers on Lock Walls (Capital Project) (FYs 2018, 2019, and 2020 – \$600,000)** – This is a multi-year project to replace steel and steel/concrete composite covers that are used to access the lock operating machinery located in the galleries and recess at both locks. These recess covers are original and will be over 55 years old when replaced. They have deteriorated due to the use of salt to keep the areas in which these covers are located clear of ice and they have been damaged by trucks and heavy equipment driving over them. The plan is to replace them with more durable materials designed for greater loads.
- (43) **Project No. 62: Both Locks – Install/Upgrade Air Curtains (Capital Project) (FYs 2019 and 2020 – \$2,500,000)** – Both Eisenhower and Snell Locks have air curtains across the upstream entrance to the lock. These are pipes mounted on the channel bottom which distribute air to stop floating ice from entering the lock during the Seaway opening and closing periods. This project is to improve the effectiveness of those two air curtains and to install air curtains at the downstream entrances to both locks.
- (44) **Project No. 63: Both Locks – Install Electronic Toll Collection Facilities (Capital Project) (FY 2020 – \$200,000)** – This project is to install facilities at the upstream approach to Eisenhower Lock and at the downstream approach to Snell Lock so that operators of transiting pleasure boats can pay their tolls electronically. Currently, the Linehandlers at the locks have to collect cash from those boat operators that have not paid on line before entering the Seaway System.

- (45) **Project No. 64: Corporation Facilities – Upgrade Lock Structures Maintenance Building (Capital Project) (FY 2017 – \$200,000)** – This project is to make improvements to a building that was constructed and is set up for blast cleaning, repairing and painting large steel structures including but not limited to stoplogs, ship arrestors, and roof cover bar joists. These improvements will make it much more efficient to change operations within the building by not having to relocate vacuum, grit recycling, and air handling equipment when setting up for different operations.

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# SLSDC ARP Obligations (FYs 2009-2014)

ARP #	ARP Project Description	ARP FY 2009 Obligations (Year 1)	ARP FY 2010 Obligations (Year 2)	ARP FY 2011 Obligations (Year 3)	ARP FY 2012 Obligations (Year 4)	ARP FY 2013 Obligations (Year 5)	ARP FY 2014 Obligations (Year 6)	Six-Year Obligations Totals
1	Snell Lock - Replace Fendering Downstream Guidewall Extension	\$241,600	\$8,091	\$0	\$0	\$0	\$188,725	\$438,416
2	Both Locks - Rehabilitate Downstream Miter Gates	\$0	\$0	\$3,539,935	\$8,384	\$3,009,854	\$203,666	\$6,558,173
3	Both Locks - Rehabilitate Mooring Buttons, Pins, and Concrete Along Guidewalls and Guardwalls	(Comb. w/ No. 14)	\$35,422	\$0	\$0	\$0	\$0	\$35,422
4	Both Locks - Culvert Valve Machinery - Upgrade to Hydraulic Operation	\$4,117,050	\$344,915	\$3,965,005	\$539,889	\$203,678	\$0	\$9,170,537
5	Both Locks - Rehabilitate Winter Maintenance Lock Covers	\$46,698	\$6,638	\$23,781	\$28,335	\$27,906	\$34,254	\$167,612
6	Seaway International Bridge - Perform Structural Rehabilitation and Corrosion Prevention	\$3,102,878	\$5,680,707	\$0	\$0	\$0	\$0	\$8,783,585
7	Both Locks - Culvert Valves - Replace With Single-Skin Valves	\$0	\$326,898	\$65,591	\$302,468	\$162	\$1,370,028	\$2,065,147
8	Floating Navigational Aids - Replace	\$61,254	\$54,576	\$0	\$0	\$31,434	\$68,149	\$215,413
9	Corporation Equipment - Replace Heavy and Light Equipment, Maintenance Vehicles, and Shop Equipment	\$1,574,504	\$481,052	\$108,038	\$81,623	\$137,393	\$227,151	\$2,609,761
10	Both Locks - Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	\$19,594	\$231,269	\$93,613	\$28,003	\$17,099	\$38,320	\$427,898
11	Fixed Navigational Aids - Rehabilitate	\$0	\$10,998	\$16,217	\$21,048	\$29,210	\$14,199	\$91,672
12	Corporation Equipment - Upgrade/Replace Floating Plant	\$678,745	\$1,627,925	\$1,908,563	\$2,160,169	\$860,413	\$572,622	\$7,808,437
13	Corporation Facilities - Replace Roofs	\$143,949	\$0	\$3,348	\$89,024	\$17,820	\$0	\$254,141
14	Corporation Facilities - Replace Paving and Drainage Infrastructure	\$921,837	\$1,829,621	\$85,481	\$0	\$0	\$0	\$2,836,939
15	Eisenhower Lock - Highway Tunnel - Rehabilitate	\$26,636	\$271,804	\$99,459	\$1,523	\$0	\$1,143,224	\$1,542,646
16	Corporation Technologies - Upgrade GPS/AIS/RMS	\$100,997	\$76,451	(\$3,328)	\$10,000	\$6,350	\$0	\$190,470
17	Navigation Channels - Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments	\$4,279,556	\$0	\$3,662,267	\$99,714	\$100	\$100	\$8,041,737
18	Eisenhower Lock - Vertical Lift Gate - Replace Wire Ropes	\$0	\$487,750	\$109,490	\$268,549	\$0	\$0	\$865,789
19	Corporation Facilities - Upgrade Electrical Distribution Equipment	\$0	\$753,400	\$306,847	\$41,304	\$1,465	\$420	\$1,103,436
20	Both Locks - Upgrade Lock Status/Controls	\$8,558	\$139,805	\$89,507	\$37,549	\$76,722	\$32,570	\$384,711
21	Both Locks - Compressed Air Systems - Upgrade/Replace	\$19,878	\$787,549	\$3,381	\$986	\$0	\$0	\$811,794
22	Both Locks - Install Vessel Self Spotting Equipment	\$0	\$0	\$0	\$0	\$0	\$485,201	\$485,201
23	Both Locks - Install Vessel Vacuum Mooring Systems	\$0	\$0	\$0	\$0	\$0	\$686,074	\$686,074
24	Both Locks - Structural Repair - Grout Leaks in Galleries and Recesses	\$37,561	\$0	\$0	\$0	\$0	\$0	\$37,561
25	Corporation Facilities - Upgrade/Replace Fire Alarm/Protection Systems	\$4,148	\$0	\$4,007	\$0	\$0	\$0	\$8,155
26	Corporation Facilities - Upgrade Storage for Lock Spare Parts	\$0	\$418,000	\$12,144	\$0	\$1,115,266	\$18,572	\$1,563,982
27	Corporation Facilities - Replace Windows and Doors and Repair Building Facades	\$0	\$33,776	\$5,537	\$8,070	\$167	\$0	\$47,550
29	Eisenhower Lock - Walls, Sills, and Culverts - Rehabilitate Concrete	\$0	\$209,395	\$0	\$0	\$0	\$0	\$209,395
31	Both Locks - Rehabilitate Upstream Miter Gates	\$2,201,585	\$2,478,896	\$347,662	\$14,961	(\$750)	\$0	\$5,042,354
32	Snug Harbor - Rehabilitate Spare Gate Storage and Assembly Area	\$0	\$12,734	\$346,600	\$0	\$2,099,934	\$42,445	\$2,501,713
33	Both Locks - Upgrade Drainage Infrastructure in Galleries and Recesses	\$0	\$0	\$0	\$0	\$6,938	\$301,737	\$308,675
34	Both Locks - Improve Ice Control	\$0	\$7,462	\$0	\$0	\$0	\$0	\$7,462
38	Both Locks - Upgrade/Replace Emergency Generators	\$0	\$0	\$0	\$0	\$1,764,008	\$344,313	\$2,108,321
39	Both Locks - Dewatering Pumps - Upgrade Outdated Equipment	\$0	\$0	\$0	\$189,763	\$25,721	\$23,568	\$239,052
41	Snell Lock - Install Ice Flushing System Technologies	\$0	\$0	\$272,000	\$11,477,293	\$1,577,272	\$90,045	\$13,416,610
42	Both Locks - Miter Gates - Structural Rehabilitation	\$0	\$0	\$0	\$210	\$2,898,819	\$3,740,613	\$6,639,642
43	Both Locks - Miter Gate Machinery - Upgrade/Replace	\$0	\$0	\$133,364	\$1,207	\$505	\$3,740,933	\$3,876,009
51	Corporation Facilities - Upgrade Physical Security to Meet HSPD-12 Requirements	\$0	\$24,183	\$21,097	\$352,347	\$20,143	\$5,985	\$423,755
52	Corporation Facilities - Eisenhower Lock Visitors' Center - Replace	\$0	\$0	\$13,042	\$0	\$298,391	\$794,473	\$1,105,906
54	Corporation Facilities - Administration Building - Replace Elevator	\$0	\$0	\$140,346	\$0	\$0	\$0	\$140,346
55	Corporation Facilities - Maintenance Building - Replace Fuel Tanks	\$0	\$0	\$189,350	\$2,350	\$0	\$0	\$191,700
56	Corporation Facilities - Duth Free Store Property - Upgrade Security	\$0	\$0	\$13,025	\$0	\$0	\$0	\$13,025
57	Corporation Facilities - Upgrade Network Security	\$0	\$0	\$158,536	\$16,998	\$8,687	\$0	\$184,221
58	Corporation Facilities - Upgrades to Meet Sustainability and Energy Goals	\$0	\$0	\$47,511	\$57,036	\$8,180	\$22,140	\$134,867
--	Miscellaneous Expenses	\$0	\$443	\$1,700	\$0	\$0	\$0	\$2,143
	Asset Renewal Program Total	\$17,587,028	\$16,339,760	\$15,783,116	\$15,838,803	\$14,242,887	\$14,189,527	\$93,777,455

## NOTES:

- (1) Rounding may affect the addition of rows and columns in the table.
- (2) In FY 2009, ARP Project Nos. 3 and 14 were contractually combined.
- (3) The SLSDC expended an additional \$474,000, \$535,000, \$783,000, \$672,000, \$674,000, and \$970,000 in personnel compensation for staff time associated with ARP work in FYs 2009, 2010, 2011, 2012, 2013, and 2014, respectively.
- (4) The miscellaneous expenses of \$443 in FY 2010 and \$1,700 in FY 2011 were for ARP-related travel costs by SLSDC personnel that could not be linked to a specific ARP project.

# SLSDC Asset Renewal Program (ARP) / Post-ARP Capital Plan

## FY 2016 Request / FY 2017-2020 Estimates

PROJECT NO.	PROJECT TITLE	FY 2016 REQUEST	FY 2017 ESTIMATE	FY 2018 ESTIMATE	FY 2019 ESTIMATE	FY 2020 ESTIMATE	FIVE-YEAR TOTALS
1	Both Locks - Replace Fending on Approach Walls	---	---	\$300,000	\$300,000	\$300,000	\$900,000
5	Both Locks - Rehabilitate Winter Maintenance Lock Covers	---	\$25,000	---	\$25,000	---	\$50,000
8	Floating Navigational Aids - Replace	---	\$100,000	\$150,000	\$200,000	\$250,000	\$700,000
9	Corporation Equipment - Replace Heavy and Light Equipment, Maintenance Vehicles and Shop Equipment	---	\$200,000	\$250,000	\$300,000	\$300,000	\$1,050,000
10	Both Locks - Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$250,000
11	Fixed Navigational Aids - Rehabilitate	\$50,000	\$50,000	\$100,000	\$100,000	\$100,000	\$400,000
12	Corporation Equipment - Floating Plant/Tugs - Replace	\$10,000,000	\$10,000,000	\$4,000,000	---	---	\$24,000,000
14	Corporation Facilities - Replace Paving and Drainage Infrastructure	---	---	\$750,000	\$1,000,000	\$750,000	\$2,500,000
15	Eisenhower Lock - Highway Tunnel - Rehabilitate	---	---	\$400,000	---	---	\$400,000
16	Corporation Technologies - Upgrade GPS/AIS/TWS	---	---	\$100,000	---	\$150,000	\$250,000
17	Navigation Channels - Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments	---	\$4,000,000	---	---	\$5,000,000	\$9,000,000
20	Both Locks - Upgrade Lock Status/Controls	---	\$50,000	\$50,000	\$50,000	\$50,000	\$200,000
21	Both Locks - Compressed Air Systems - Upgrade/Replace	---	---	---	\$200,000	---	\$200,000
22	Both Locks - Install Vessel Self Spotting Equipment	---	---	\$500,000	\$500,000	---	\$1,000,000
23	Both Locks - Install Vessel Vacuum Mooring Systems	\$8,000,000	---	---	---	---	\$8,000,000
24	Both Locks - Structural Repair - Grout Leaks in Galleries and Recesses	---	---	\$200,000	---	\$200,000	\$400,000
25	Corporation Facilities - Upgrade/Replace Fire Alarm/Protection Systems	---	\$100,000	---	\$100,000	---	\$200,000
26	Corporation Facilities - Upgrade Storage for Lock Spare Parts and Equipment	---	---	\$200,000	\$500,000	\$200,000	\$900,000
27	Corporation Facilities - Replace Windows and Doors and Repair Building Facades	---	---	\$125,000	---	\$150,000	\$275,000
28	Snell Lock - Walls, Sills and Culverts - Rehabilitate Concrete	---	---	\$2,000,000	---	\$2,000,000	\$4,000,000
29	Eisenhower Lock - Walls, Sills and Culverts - Rehabilitate Concrete	---	\$2,000,000	---	\$2,000,000	---	\$4,000,000
30	Eisenhower Lock - Ice Flushing System - Upgrade	---	\$500,000	---	---	---	\$500,000
33	Both Locks - Upgrade Drainage Infrastructure in Galleries and Recesses	---	\$200,000	---	---	\$250,000	\$450,000
34	Both Locks - Improve Ice Control	---	\$100,000	---	---	\$150,000	\$250,000
35	Vessel Mooring Cells - Rehabilitate and Extend	---	---	---	\$1,000,000	\$1,000,000	\$2,000,000
36	Eisenhower Lock - Diffusers - Replace	---	---	\$2,500,000	---	---	\$2,500,000
37	Eisenhower Lock - Construct Drydock for Vessel Maintenance	---	---	---	---	\$2,000,000	\$2,000,000
38	Both Locks - Upgrade/Replace Emergency Generators	---	---	\$500,000	---	---	\$500,000
40	Both Locks - Extend Guidewalls in Pool	---	---	---	\$5,000,000	\$4,000,000	\$9,000,000
44	Both Locks - Ship Arrestor Machinery - Upgrade/Replace	---	---	\$800,000	\$800,000	---	\$1,600,000
45	Flow Control Dikes - Rehabilitate	---	---	\$500,000	\$800,000	---	\$1,300,000
46	Both Locks - Guidewall Extensions - Rehabilitate	---	---	\$500,000	\$500,000	---	\$1,000,000
47	Eisenhower Lock - Vertical Lift Gate - Structural Rehabilitation	---	---	---	\$2,000,000	---	\$2,000,000
48	Both Locks - Stiffleg Derricks - Replace	---	---	\$2,000,000	\$2,000,000	---	\$4,000,000

## SLSDC Asset Renewal Program (ARP) / Post-ARP Capital Plan

### FY 2016 Request / FY 2017-2020 Estimates

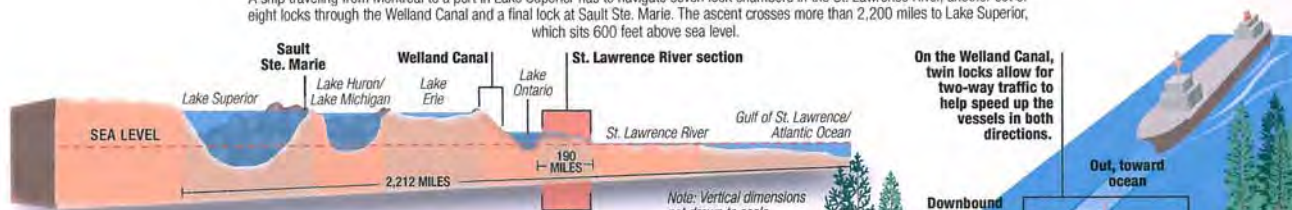
PROJECT NO.	PROJECT TITLE	FY 2016 REQUEST	FY 2017 ESTIMATE	FY 2018 ESTIMATE	FY 2019 ESTIMATE	FY 2020 ESTIMATE	FIVE-YEAR TOTALS
50	Snell Lock - Diffusers - Replace	---	---	\$2,500,000	---	---	\$2,500,000
51	Corporation Facilities - Upgrade Physical Security to Meet HSPD-12 Requirements	\$50,000	---	\$50,000	---	\$50,000	\$150,000
52	Corporation Facilities - Eisenhower Lock Visitors' Center - Replace	---	\$4,000,000	\$800,000	---	---	\$4,800,000
57	Corporation Technologies - Upgrade Network Security	---	\$50,000	\$50,000	\$100,000	\$100,000	\$300,000
58	Corporation Facilities - Upgrades to Meet Sustainability and Energy Goals	---	\$50,000	\$100,000	\$100,000	\$100,000	\$350,000
59	Corporation Facilities - Communications Improvements	---	---	\$200,000	\$200,000	---	\$400,000
60	Both Locks - Improve Access to and Rehabilitate Machinery in Crossovers and Recesses	---	\$250,000	\$250,000	\$300,000	\$300,000	\$1,100,000
61	Both Locks - Replace Recess Covers on Lock Walls	---	---	\$200,000	\$200,000	\$200,000	\$600,000
62	Both Locks - Install/Upgrade Air Curtains	---	---	---	\$1,000,000	\$1,500,000	\$2,500,000
63	Both Locks - Install Electronic Pleasure Craft Toll Collection Facility	---	---	---	---	\$200,000	\$200,000
64	Corporation Facilities - Upgrade Lock Structures Maintenance Building Per OSHA	---	\$200,000	---	---	---	\$200,000
<b>TOTAL</b>		<b>\$18,150,000</b>	<b>\$21,925,000</b>	<b>\$20,125,000</b>	<b>\$19,325,000</b>	<b>\$19,350,000</b>	<b>\$98,875,000</b>

Highlighted projects are those capital plan projects and expenses necessary beyond the original scope and schedule of the ARP



## SEAWAY LOCKS: A 600-FOOT CLIMB IN 16 STEPS

A ship traveling from Montreal to a port in Lake Superior has to navigate seven lock chambers in the St. Lawrence River, another set of eight locks through the Welland Canal and a final lock at Sault Ste. Marie. The ascent crosses more than 2,200 miles to Lake Superior, which sits 600 feet above sea level.

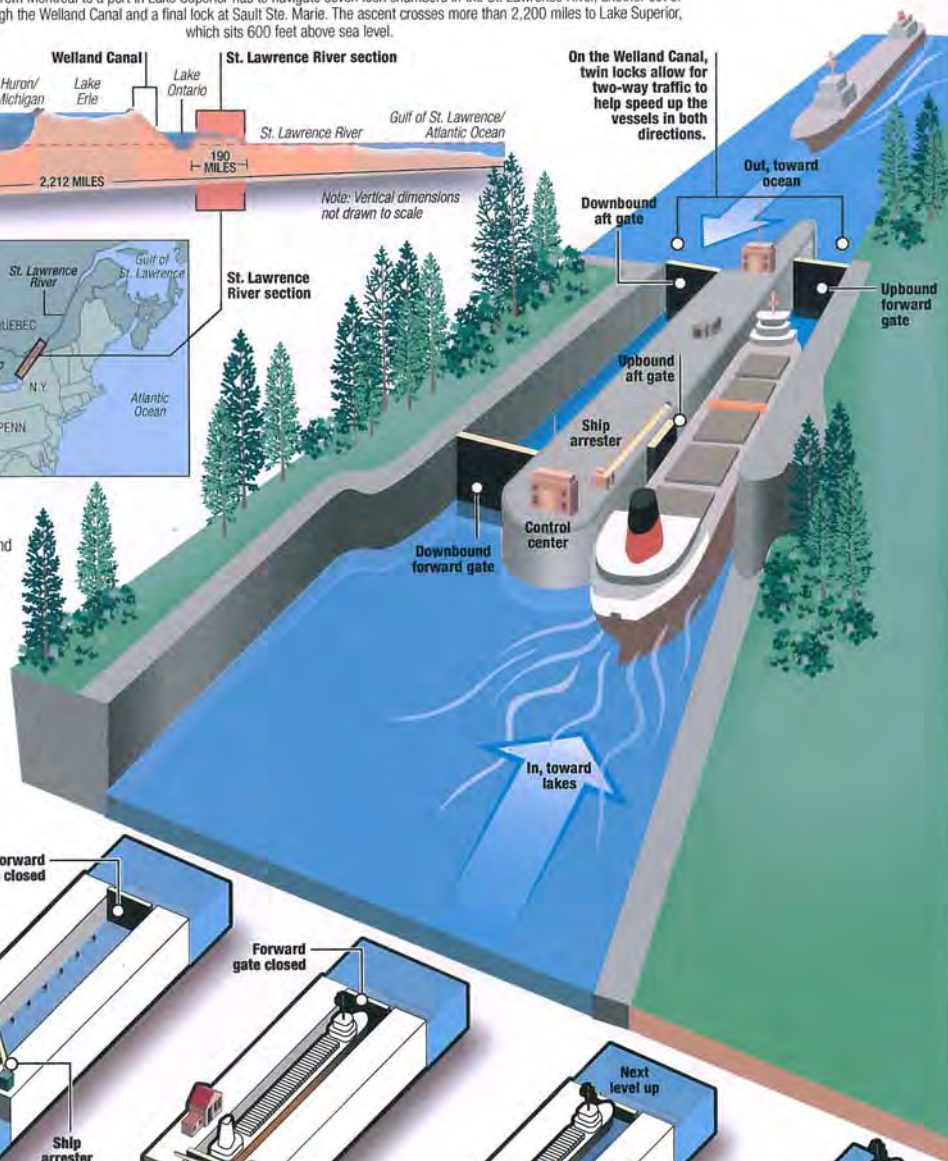


### SEAWAY FACTS

- **Opened in 1959.** The Seaway was considered crucial to the Great Lakes because it is the region's only outlet to the East Coast.
- **INFRASTRUCTURE:** Dams and dikes, locks, channels and bridges.
- **ELEVATION:** A ship in the St. Lawrence River has to go up seven locks – or 225 feet – to get to Lake Ontario.
- Every commercial ship sailing the Seaway carries a transponder that sends out its name, location coordinates and speed to the traffic control center and to other ships nearby.
- Seaway communications use radio signals linked to Differential Global Positioning System satellite technology.
- Computers onboard ships and at the control center display information on a virtual Seaway map.



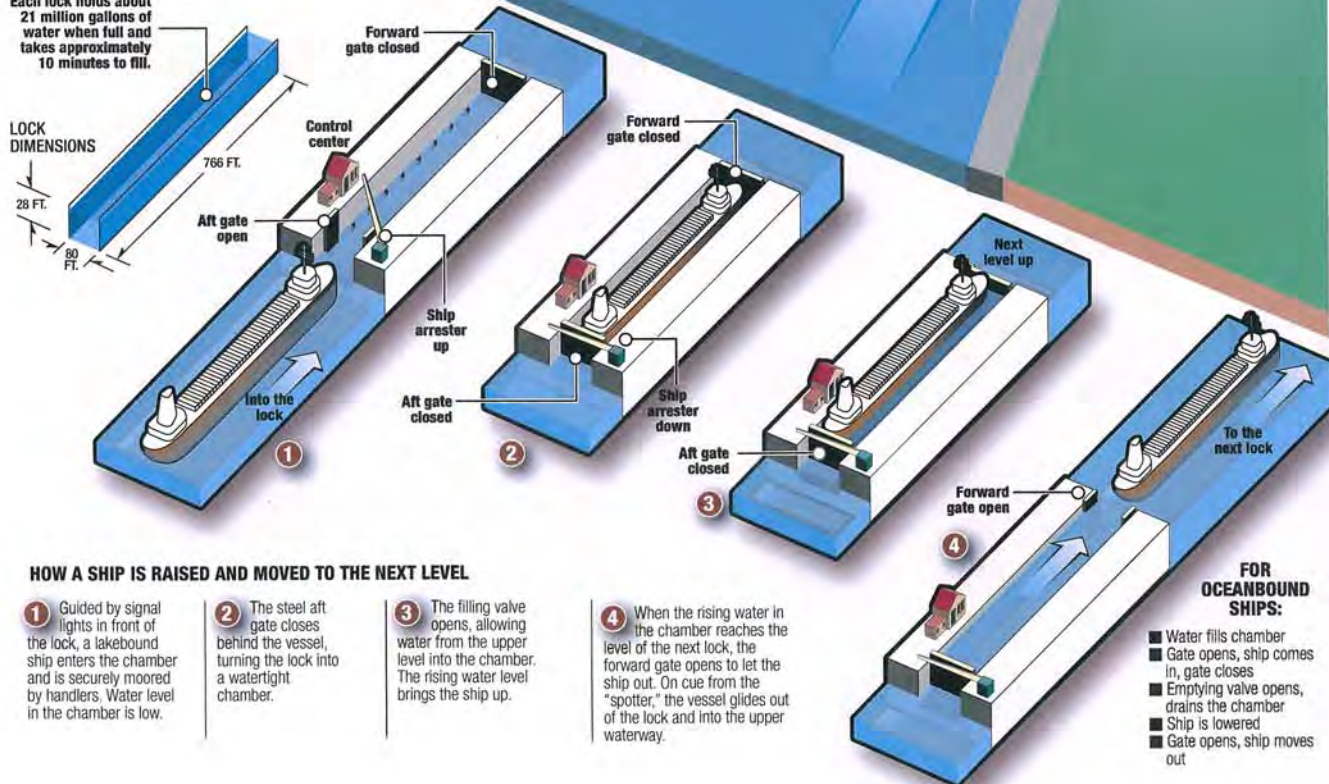
### St. Lawrence River section



### THE LOCK CHAMBER

The watertight chamber has gates at both ends. It allows a vessel in, then raises or lowers the ship from one level of the waterway to another. Each chamber is filled and emptied using the law of gravity – water flowing naturally from a higher elevation to a lower one.

Each lock holds about 21 million gallons of water when full and takes approximately 10 minutes to fill.







**U.S. Saint Lawrence Seaway Development Corporation**  
<http://www.greatlakes-seaway.com>