



U.S. Department of
Transportation

BUDGET ESTIMATES FISCAL YEAR 2017

SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION

SUBMITTED FOR THE USE OF
THE COMMITTEES ON APPROPRIATIONS

**U.S. DEPARTMENT OF TRANSPORTATION
 SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION
 FY 2017 BUDGET REQUEST**

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Saint Lawrence Seaway Development Corporation FY 2017 Budget Overview

For Fiscal Year (FY) 2017, the Saint Lawrence Seaway Development Corporation (SLSDC) is requesting an appropriation from the Harbor Maintenance Trust Fund of \$36.03 million to fund the operations and maintenance of the U.S. portion of the St. Lawrence Seaway (\$18.68 million) as well as projects included in the Seaway's on-going Asset Renewal Program (ARP) (\$17.35 million).

At the FY 2017 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 historically maintained a 99 percent reliability rate. The SLSDC's ARP activities also 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 third largest economy with annual economic output of nearly \$6 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.¹

The binational 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 business revenue, \$14 billion in personal income, and \$5 billion in federal, state, provincial, and local taxes each year.²

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.³ 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 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.

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

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

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

Agency Operations (pages 23-31)

The SLSDC is requesting \$18.68 million and 144 full-time equivalents (FTEs) for the SLSDC's Agency Operations program in FY 2017. The request represents an increase of \$428,000 compared to the FY 2016 enacted level with no requested change to the FTE level.

In addition to baseline increases totaling \$228,000, the SLSDC proposes a program increase of \$200,000 to fully fund the estimated annual operations and maintenance expenses for the SLSDC's modernized accounting, travel, and inventory systems. The SLSDC completed the migration of its legacy financial management system to the U.S. Department of the Interior's Federal Shared Service Provider (FSSP) system in July 2015 and is expected to complete the e-travel system migration in FY 2016.

Without adequate funding for the SLSDC to continue its existing Agency Operations activities and look for new ways to enhance its efforts in the areas of safety, operations, environmental management and sustainability, and trade/economic development, the waterway's historic near-perfect reliability rate will be jeopardized, ultimately resulting in commercial shippers seeking alternative/competing trade modes and routes. Such a mode/route shift would have adverse effects on highway/railway congestion, commercial freight rates/transportation costs, greenhouse gas emissions, and consumer costs for goods and products.

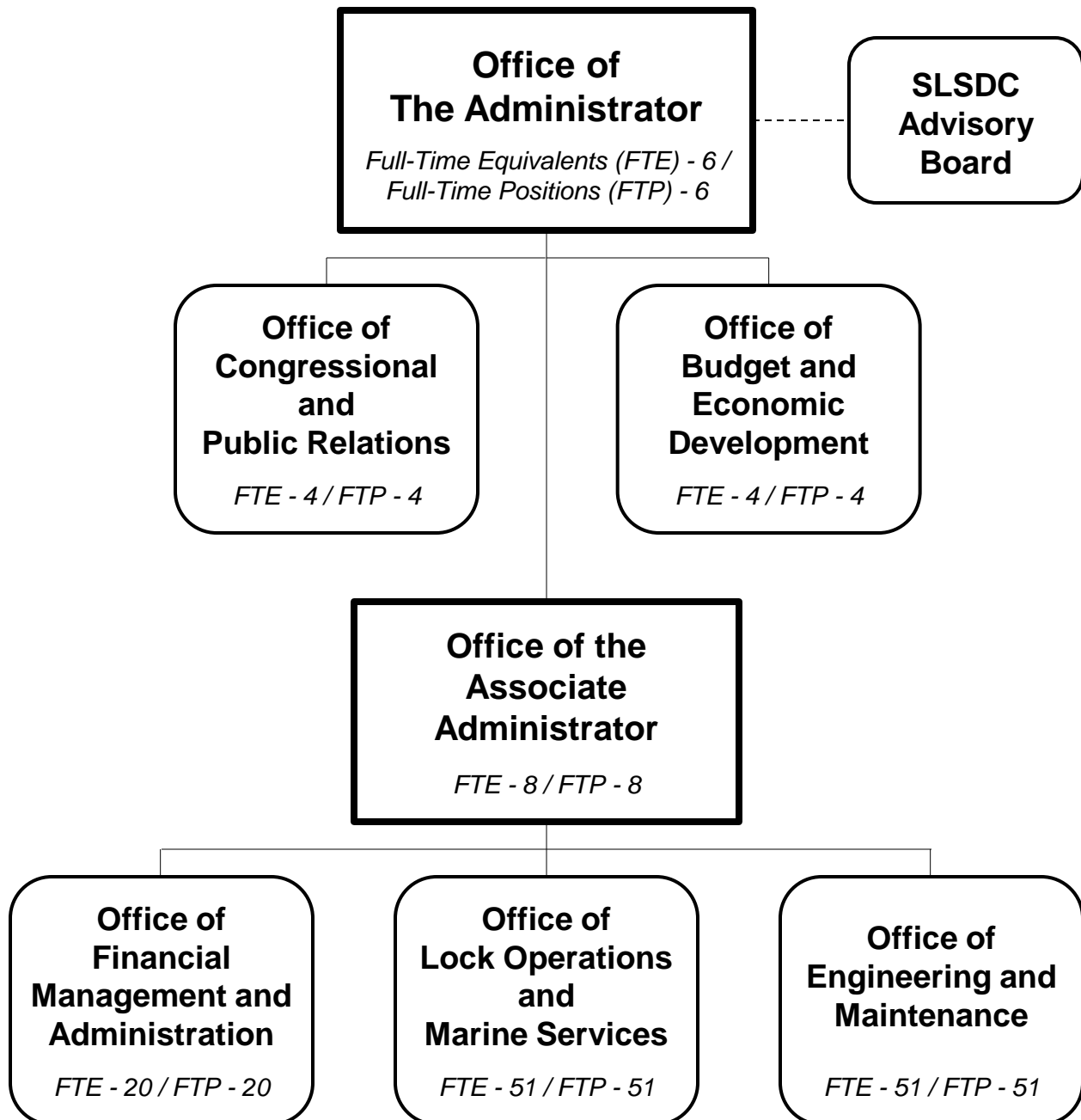
Asset Renewal Program (pages 33-41)

The SLSDC's ARP addresses the on-going infrastructure needs for the two U.S. Seaway locks, the Seaway International Bridge, maintenance dredging, operational systems, and Corporation facilities and equipment. 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.

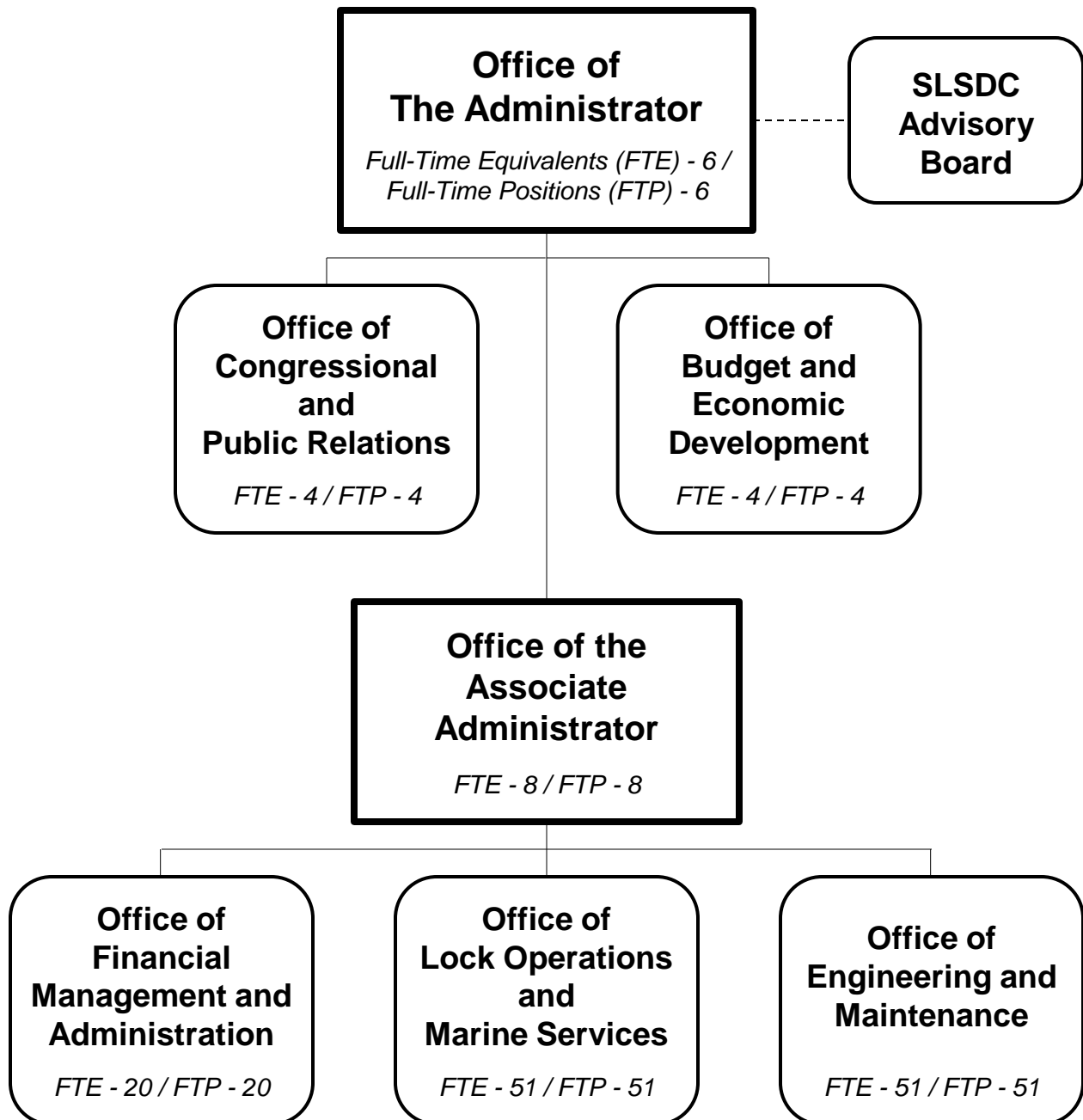
The SLSDC's ARP, which started in FY 2009, is one component of the overall binational Great Lakes-St. Lawrence Seaway infrastructure renewal program. The Canadian St. Lawrence Seaway Management Corporation (SLSMC) has been making similar improvements at its 13 locks. Nearly \$7 billion is being spent on asset renewal and infrastructure improvements in the Great Lakes St. Lawrence Seaway System by both the public and private sectors.

The \$17.35 million included in the FY 2017 budget request to fund nine ARP projects (*see pages 38-42 for FY 2017 ARP projects and descriptions*). There are two major ARP projects scheduled for funding in FY 2017: (1) the continuation of the SLSDC's multi-year project to replace the SLSDC's two operational 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 Canadian Seaway locks (\$6.65 million).

Saint Lawrence Seaway Development Corporation Organization Chart FY 2016 FTE/FTP Estimates



Saint Lawrence Seaway Development Corporation Organization Chart FY 2017 FTE/FTP Estimates



**Budget
Summary Tables**

EXHIBIT II-1
FY 2017 COMPARATIVE STATEMENT OF NEW BUDGET AUTHORITY
Saint Lawrence Seaway Development Corporation
Appropriations
(\$000)

<u>ACCOUNT NAME</u>	<u>FY 2015 ACTUAL</u>	<u>FY 2016 ENACTED</u>	<u>FY 2017 REQUEST</u>
Operations and Maintenance - HMTF (69-8003)	\$32,042	\$28,400	\$36,028
	-----	-----	-----
TOTAL APPROPRIATIONS:	\$32,042	\$28,400	\$36,028

EXHIBIT II-2
FY 2017 TOTAL BUDGETARY RESOURCES BY APPROPRIATIONS ACCOUNT
Saint Lawrence Seaway Development Corporation
Appropriations
(\$000)

<u>ACCOUNT NAME</u>	<u>M/D</u>	<u>FY 2015 ACTUAL</u>	<u>FY 2016 ENACTED</u>	<u>FY 2017 REQUEST</u>
Operations and Maintenance - HMTF (69-8003)	D			
Agency Operations	D	\$17,742	\$18,250	\$18,678
Asset Renewal Program	D	\$14,300	\$10,150	\$17,350
		-----	-----	-----
TOTAL:	D	\$32,042	\$28,400	\$36,028

EXHIBIT II-3
FY 2017 BUDGET REQUEST BY DOT STRATEGIC AND PERFORMANCE GOALS
Saint Lawrence Seaway Development Corporation
Appropriations
(\$000)

<u>STRATEGIC AND PERFORMANCE GOALS</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>
	<u>ACTUAL</u>	<u>ENACTED</u>	<u>TARGET</u>
ECONOMIC COMPETITIVENESS			
<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.	\$17,742	\$18,250	\$18,678
Performance Goal Subtotal	\$17,742	\$18,250	\$18,678
Total - Economic Competitiveness			
STATE OF GOOD REPAIR			
<u>GR1: Maintain or Improve Operating Conditions - Maintain or improve the availability, reliability, and performance of the Nation's transportation infrastructure, equipment, and facilities by ensuring they are functioning as designed within their useful lives.</u>			
<i>[Measure under development]</i>	\$14,300	\$10,150	\$17,350
Performance Goal Subtotal	\$14,300	\$10,150	\$17,350
Total - State of Good Repair			
GRAND TOTAL	\$32,042	\$28,400	\$36,028

EXHIBIT II-3a
FY 2017 BUDGET REQUEST BY DOT OUTCOMES
Saint Lawrence Seaway Development Corporation
(\$000)

DOT Outcome	Program	FY 2017 Request
ECONOMIC COMPETITIVENESS		
Enhance Productivity and Growth (EC1)	SLSDC Agency Operations	\$18,678
STATE OF GOOD REPAIR		
Maintain or Improve Operating Conditions (GR1)	SLSDC Asset Renewal Program	\$17,350
	Total - Operations and Maintenance-HMTF (69-8003)	\$36,028

EXHIBIT II-4
FY 2017 BUDGET AUTHORITY
Saint Lawrence Seaway Development Corporation
Appropriations
(\$000)

<u>ACCOUNT NAME</u>	<u>M/D</u>	<u>FY 2015 ACTUAL</u>	<u>FY 2016 ENACTED</u>	<u>FY 2017 REQUEST</u>
Operations and Maintenance - HMTF (69-8003)	D			
Agency Operations	D	\$17,742	\$18,250	\$18,678
Asset Renewal Program	D	\$14,300	\$10,150	\$17,350
		-----	-----	-----
TOTAL:	D	\$32,042	\$28,400	\$36,028

EXHIBIT II-5
FY 2017 OUTLAYS
Saint Lawrence Seaway Development Corporation
(\$000)

<u>ACCOUNT NAME</u>	<u>FY 2015 ACTUAL</u>	<u>FY 2016 ENACTED</u>	<u>FY 2017 REQUEST</u>
SLSDC Fund (69x4089)	\$30,891	\$37,400	\$46,028
	-----	-----	-----
TOTAL:	\$30,891	\$37,400	\$46,028
[Discretionary] (Operations and Maintenance-HMTF -- 69-8003)	\$32,042	\$28,400	\$36,028
[Mandatory] (SLSDC Fund -- 69x4089)	(\$1,151)	\$9,000	\$10,000

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 2015 Actual	FY 2016 Enacted	FY 2017 Pay Raises*	Annualization of 2016 Pay Raises	Two Less Comp. Days (260 Days)	Washington Office Rent	Working Capital Fund	Non-Pay Inflation	FY 2017 Baseline Estimate	Program Increases/ Decreases	FY 2017 Request
PERSONNEL RESOURCES	135	144									144
Direct FTEs	135	144	-	-	-	-	-	-	144	-	144

FINANCIAL RESOURCES

ADMINISTRATIVE EXPENSES

Salaries and Benefits	\$3,528	\$3,568	\$38	\$5	(\$21)	\$0	\$0	\$0	\$3,590	\$0	\$3,590
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	\$386	\$426	\$0	\$0	\$0	\$40	\$0	\$0	\$466	\$0	\$466
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)	\$726	\$742	\$0	\$0	\$0	\$0	\$54	\$0	\$796	\$0	\$796
Supplies	\$25	\$25	\$0	\$0	\$0	\$0	\$0	\$0	\$25	\$0	\$25
Equipment	\$6	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$6	\$0	\$6
Administrative Subtotal	\$4,778	\$4,874	\$38	\$5	(\$21)	\$40	\$54	\$0	\$4,990	\$0	\$4,990

PROGRAMS

Agency Operations (non-Admin.)	\$12,964	\$13,376	\$113	\$14	(\$63)	\$0	\$0	\$48	\$13,488	\$200	\$13,688
Asset Renewal Program (ARP)	\$14,300	\$10,150	\$0	\$0	\$0	\$0	\$0	\$0	\$10,150	\$7,200	\$17,350
Programs Subtotal	\$27,264	\$23,526	\$113	\$14	(\$63)	\$0	\$0	\$48	\$23,638	\$7,400	\$31,038
TOTAL	\$32,042	\$28,400	\$151	\$19	(\$84)	\$40	\$54	\$48	\$28,628	\$7,400	\$36,028

* "FY 2017 Pay Raises" column includes \$70,000 for three-quarters of the proposed General Schedule (GS) pay increase of 1.6 percent and \$81,000 for a full year of the estimated Wage Grade (WG) pay increase of 1.6 percent.

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

<u>ACCOUNT NAME</u>	<u>FY 2015 ACTUAL</u>	<u>FY 2016 ENACTED</u>	<u>FY 2017 REQUEST</u>	<u>CHANGE</u>
DIRECT:				
Operations and Maintenance - HMTF (69-8003)	\$725	\$741	\$795	\$54
	-----	-----	-----	-----
TOTAL:	\$725	\$741	\$795	\$54

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

	FY 2015	FY 2016	FY 2017
	<u>ACTUAL</u>	<u>ENACTED</u>	<u>REQUEST</u>
<u>DIRECT FUNDED BY APPROPRIATION</u>			
Operations and Maintenance - HMTF (69-8003)	131	144	144
	-----	-----	-----
TOTAL FTEs:	131	144	144

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

	<u>FY 2015</u> <u>ACTUAL</u>	<u>FY 2016</u> <u>ENACTED</u>	<u>FY 2017</u> <u>REQUEST</u>
<u>DIRECT FUNDED BY APPROPRIATION</u>			
Operations and Maintenance - HMTF (69-8003)	129	144	144
	-----	-----	-----
TOTAL POSITIONS:	129	144	144

**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, \$36,028,000, 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>FY 2015</u> <u>ACTUAL</u>	<u>FY 2016</u> <u>ENACTED</u>	<u>FY 2017</u> <u>REQUEST</u>	<u>CHANGE</u> <u>FY 2016-17</u>
<u>Program Activity</u>				
Agency Operations	\$17,742	\$18,250	\$18,678	\$ 428
Asset Renewal Program	14,300	10,150	17,350	7,200
	-----	-----	-----	-----
Total	\$32,042	\$28,400	\$36,028	\$ 7,628
FTEs	131	144	144	0

Program and Performance Statement

The FY 2017 budget request for the SLSDC includes \$36.03 million from the Harbor Maintenance Trust Fund (HMTF) to fund general agency operations (\$18.68 million) and Asset Renewal Program (ARP) capital projects (\$17.35 million) (*see pages 38-41 for FY 2017 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 reliability 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 2016 TO FY 2017
Appropriations, Obligation Limitations, and Exempt Obligations
(\$000)**

<u>ITEM</u>	Change from FY 2016 to FY 2017 (\$000)	Change from FY 2016 to FY 2017 (FTE)
FY 2016 ENACTED	\$28,400	144
ADJUSTMENTS TO BASE:		
FY 2017 Wage Grade (WG) Estimated Pay Increase (1.6%)	\$ 81	
FY 2017 General Schedule (GS) Proposed Pay Increase (1.6%)	70	
DOT Working Capital Fund	54	
Non-Pay Inflation (1.0%)	48	
Washington Office Rent	40	
Annualization of FY 2016 GS Pay Increase (1.3%)	19	
Two Less Compensable Days	(84)	
SUBTOTAL, ADJUSTMENTS TO BASE	\$ 228	0
PROGRAM CHANGES:		
Asset Renewal Program (ARP)	\$ 7,200	
Financial Management System FSSP O&M (DOI)	200	
SUBTOTAL, PROGRAM CHANGES	\$ 7,400	0
FY 2017 REQUEST	\$36,028	144

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 for FYs 2014-18. SLSDC tracks the following DOT-level performance measures to demonstrate program results:

DOT Goal/Objective: Economic Competitiveness / Objective EC1: Improve the contribution of 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.

Seaway System Reliability	2013	2014	2015	2016	2017
Target	99.0%	99.0%	99.0%	99.0%	99.0%
Actual	99.1%	97.2%	97.3%	---	---

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.

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Detailed Justification for Agency Operations

What Do I Need to Know Before Reading This Justification?

- 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 60 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,¹ and provide approximately \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation².
- The St. Lawrence Seaway directly serves the eight-state, two-province 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 third largest economy with economic output of nearly \$6 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.³

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

**FY 2017 Agency Operations Budget Request
Operations and Maintenance – HMTF (69-8003)
(\$000)**

Program Activity	FY 2015 Actual	FY 2016 Enacted	FY 2017 Request	Difference from FY 2016 Enacted
Agency Operations	\$17,742	\$18,250	\$18,678	\$428
Total	\$17,742	\$18,250	\$18,678	\$428
FTE	131	144	144	0

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

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

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

What Is the Program and Why Is It Necessary?

The SLSDC's Agency Operations program consists of all agency activities, except for the ongoing ARP for capital infrastructure replacements and improvements. 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 trade through the Great Lakes St. Lawrence Seaway System, which contributes to the comprehensive economic development of the entire Great Lakes region.

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.

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 represents nearly \$6 trillion in annual economic activity, which equates to the third largest economy in the world if it were a country, behind only the United States and China.

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,⁴ and provides approximately \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation⁵. 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. 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.⁶

⁴ *The Economic Impacts of the Great Lakes St. Lawrence Seaway System.*

⁵ *Great Lakes Navigation System: Economic Strength to the Nation.*

⁶ *The Environmental and Social Impacts of Marine Transport in the Great Lakes-St. Lawrence Seaway Region.*

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).

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.

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 trade/economic development activities.

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.

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 2014, 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 of water (30 ppt.). Compliance has steadily increased: 2014 (99 percent), 2013 (99 percent), 2012 (98 percent), 2011 (97 percent),

and 2010 (94 percent). During 2014, 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 2009-13, 99 percent in 2008, and 74 percent in 2007.⁷

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.

In addition, to ensure that environmental benefits are maximized to the fullest extent possible while maintaining the Order of Precedence of the Boundary Waters Treaty of 1909, the SLSDC is closely monitoring the progress of the International Joint Commission's (IJC) proposed Lake Ontario-St. Lawrence River Water Regulation Plan 2014 (Plan 2014).

In the event Plan 2014 is agreed upon by the U.S. and Canadian governments, the SLSDC would study the impacts of Plan 2014's water level deviations for commercial navigation in order to ensure that the Treaty's Order of Precedence is adhered to.

In the event that such a study is necessary, data would be collected and analyzed on the changes to the Lake Ontario-St. Lawrence River environment both upstream and downstream of the Massena/Cornwall hydropower dam and compare that with the changes that were anticipated with the Plan 2014 to determine if any deviations for commercial navigation limited the predicted environmental benefits. This study would correlate data on the deviations from the approved version of Plan 2014 for commercial navigation and any measured changes to the ecology of the Lake Ontario-St. Lawrence River system to determine if those deviations had a positive, negative, or neutral impact on the predicted environmental benefits of Plan 2014.

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 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, stationed in Cleveland, Ohio, 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,

⁷ 2014 Summary of Great Lakes Seaway Ballast Water Working Group, U.S.-Canadian Great Lakes Seaway System Ballast Water Working Group, February 2015.

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.

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 2015, the SLSDC exceeded its goal, as the administrative cost percentage was 21 percent with administrative expenses totaling \$3.4 million. 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 order to ensure that SLSDC staff is performing operational activities efficiently and with a goal of ensuring that customer concerns are addressed, the Corporation certifies its operational business practices through the internationally recognized International Standards Organization (ISO). The ISO recognition is only conferred on those service firms and organizations that meet the highest quality customer service and management standards set by the Geneva, Switzerland-based ISO.

In June 2015, 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 to its ISO certification, the Agency Operations program also received high marks in the area of financial management. In November 2015, the SLSDC received an unmodified opinion of its financial statements for FY 2015 with no material weaknesses or reportable conditions. The FY 2015 audit marked the 52nd consecutive clean opinion for the Corporation.

Related to human capital, 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 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 offers 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 2016 Base: The FY 2016 enacted level for the SLSDC’s Agency Operations program is \$18.25 million.

Anticipated FY 2016 Accomplishments: In FY 2016, 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 H₂O 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 Do We Need to Fund the Program at the Requested Level?

For FY 2017, the SLSDC is requesting \$18.68 million and 144 full-time equivalents (FTEs) for the SLSDC's Agency Operations program. The FY 2017 request represents an increase of \$428,000 compared to the FY 2016 enacted with no requested change to the FTE level. The increase is made up of baseline increases (\$228,000) and one program increase (\$200,000).

Baseline increases proposed include:

- Estimated 1.6 percent annual pay raise for SLSDC wage grade employees (12 months) (\$81,000);
- Proposed 1.6 percent annual pay raise for SLSDC general schedule employees (9 months) (\$70,000);
- Estimated increase in DOT Working Capital Fund (WCF) expenses (\$54,000);
- Estimated 1.0 percent inflation increase for non-pay object class expenditures (\$48,000);
- Estimated increase for SLSDC's Washington, D.C. office rent at 55 M Street (\$40,000);
- Estimated annualization of the estimated 1.3 percent pay raise in FY 2016 for general schedule employees (\$19,000); and
- Two less compensable days in FY 2017 (-\$84,000).

The SLSDC also requests a program increase of \$200,000 to fully fund the annual operational and maintenance (O&M) expenses for the SLSDC's accounting, travel, and inventory systems. The SLSDC completed its financial management system migration to the U.S. Department of Interior's Federal Shared Service Provider (FSSP) system in July 2015 and is expected to complete the e-travel migration in FY 2016. The additional funds requested will allow the SLSDC to fully fund the full-year O&M for the accounting/inventory system. Once fully established in the SLSDC's Agency Operations budget, no further significant O&M increases are anticipated.

At the request level in FY 2017, 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.

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.

The U.S. Seaway System reliability rate for Fiscal Year 2015 was 97.3 percent. System reliability was impacted by several vessel incidents during the 2015 navigation season, accounting for 80 percent of all system delays. The SLSDC has the most control over the proper functioning of its lock equipment. In FY 2015, lock-related delays represented only 5 percent of total system delays.

The requested level in FY 2017 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.

What Benefits Will Be Provided to the American Public Through This Request?

Since the binational waterway's opening in 1959, the SLSDC has performed operational and maintenance activities, safety programs, and trade/economic development functions to ensure a safe, efficient, reliable, and cost-competitive commercial transportation route while also facilitating trade and economic growth in the eight-state Great Lakes region.

Over its history, nearly 3 billion metric tons of cargo valued at \$400 billion has moved through the St. Lawrence Seaway. SLSDC operations and maintenance activities have resulted in a near-perfect reliability rate for commercial users of approximately 99 percent.

The SLSDC's long-standing and proven effective operations of the St. Lawrence Seaway has produced significant benefits for the Nation in terms of economic conditions, fuel efficiency and congestion mitigation, commercial transportation safety, and reduced greenhouse gas emissions.

Economic Impacts – The SLSDC's 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, and provide approximately \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation.⁸ Each of these significant economic advantages would be jeopardized without sufficient funding for the SLSDC's Agency Operations program.

Fuel Efficiency and Congestion Mitigation – In terms of fuel efficiency and congestion mitigation, the Great Lakes Seaway System commercial 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.⁹ Reductions in SLSDC funding or elimination of its core operational programs would negatively impact Seaway shipping levels and move more traffic to road and rail alternatives, thereby increasing fuel usage and regional congestion.

Transportation Safety – Great Lakes Seaway System shipping also has an outstanding safety record compared with its competing modes. Marine shipping is least disruptive to the general public, has fewer accidents, and fewer workplace injuries. The Seaway's outstanding safety record is the consequence of a pervasive safety culture, well trained and licensed workforce, robust regulatory oversight, and the use of advanced navigation technology. As evidence, a 2014 study of 69,960 voyages between 2002-2011 showed that 98.9 percent were accident free. Of these, 100 percent were fatality free.¹⁰

Greenhouse Gas Reductions – It is important to note that Great Lakes Seaway System shipping produces fewer greenhouse gas emissions compared to other modes of transportation. Carbon dioxide is a byproduct of the combustion of carbon-based fuels in engines. It is one of several greenhouse gases whose concentrations have increased in the earth's atmosphere. Moving the same cargo the same distance, rail transportation emits 19 percent more carbon dioxide than Great Lakes Seaway System shipping. Similarly, trucks emit 533 percent more carbon dioxide.¹¹

Without adequate funding for the SLSDC to continue its existing Agency Operations activities and look for new ways to enhance its efforts in the areas of safety, operations, environmental management and sustainability, and trade/economic development, the waterway's historic near-perfect reliability rate will be jeopardized, ultimately resulting in commercial users seeking alternative/competing trade modes and routes. Such a mode/route shift would have adverse effects on highway/railway congestion, commercial freight rates/transportation costs, greenhouse gas emissions, and consumer costs for goods and products.

⁸ *Great Lakes Navigation System: Economic Strength to the Nation.*

⁹ *The Environmental and Social Impacts of Marine Transport in the Great Lakes-St. Lawrence Seaway Region.*

¹⁰ *Safety Profile of the Great Lakes-St. Lawrence Seaway System*, Research and Traffic Group, March 2014.

¹¹ *The Environmental and Social Impacts of Marine Transport in the Great Lakes-St. Lawrence Seaway Region.*

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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-St. Lawrence Seaway infrastructure renewal program. The Canadian St. Lawrence Seaway Management Corporation (SLSMC) has been making similar improvements at its 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.
- Nearly \$7 billion is being spent on asset renewal and infrastructure improvements in the Great Lakes St. Lawrence Seaway System by both the public and private sectors.¹²
- 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 SLSDC obligated \$109 million on 48 separate projects during the ARP’s first seven years (FYs 2009-2015).
- 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.
- Approximately \$60 million of ARP funds obligated during the program’s first seven years were awarded within the Upstate New York region. In addition to these contracts, the ARP generates, on average, \$2 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 Funds Are Currently Spent on the Program?

**FY 2017 Asset Renewal Program (ARP) Budget Request
Operations and Maintenance – HMTF (69-8003)
(\$000)**

Program Activity	FY 2015 Actual	FY 2016 Enacted	FY 2017 Request	Difference from FY 2016 Enacted
Asset Renewal Program	\$14,300	\$10,150	\$17,350	\$7,200
Total	\$14,300	\$10,150	\$17,350	\$7,200
FTE	0	0	0	0

What Is the Program and Why Is It Necessary?

With the enactment of the FY 2009 Omnibus Appropriations Act, the SLSDC’s capital infrastructure program called the Asset Renewal Program (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.

¹² *Infrastructure Investment of the Great Lakes St. Lawrence Seaway System.*

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 \$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 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. Adequate capital reinvestment in the Seaway infrastructure is critical to maintaining the SLSDC's long-standing 99 percent reliability rate.

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.

The SLSDC obligated \$109 million on 48 separate projects during the ARP's first seven years (FYs 2009-2015). 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 \$60 million of ARP funds obligated during the program's first seven years were awarded within the Upstate New York region. In addition to these contracts, the ARP generates, on average, \$2 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 commercial navigation delays caused by lock equipment malfunction and degradation. In addition, several ARP projects will involve the implementation of new technologies for the operation of the Seaway infrastructure, which will result in improved efficiencies.

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.

The SLSDC's ARP also 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 start of 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.¹³ 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 had 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 for 2014-2018.

FY 2016 Base: The FY 2016 enacted level for the SLSDC's ARP is \$10.15 million.

Anticipated FY 2016 Accomplishments: During FY 2016, 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 2016 ARP projects. In addition, the SLSDC will manage and perform oversight of on-site ARP construction/installation work. The Corporation's Office of Financial Management and Administration and Office of Budget and Economic Development also support this initiative. In FY 2016, the SLSDC will fund the second year of an estimated five-year, \$32 million effort to replace the SLSDC's two tugboats – *Robinson Bay* and *Performance* (\$10 million).

¹³ *Infrastructure Investment of the Great Lakes St. Lawrence Seaway System.*

Why Do We Need to Fund the Program at the Requested Level?

The \$17.35 million included in the FY 2017 budget request to fund nine SLSDC ARP projects will address various needs for the two U.S. Seaway locks, operational systems, and Corporation facilities and equipment (*see pages 38-41 for FY 2017 ARP projects and descriptions*).

There are two major ARP projects scheduled for funding in FY 2017: (1) the third year of a five-year, estimated \$32 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 Canadian Seaway locks (\$6.65 million).

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 maintaining or improving operating conditions.

Without continued funding for these two projects, the SLSDC anticipates both increased overall project costs and a delay in implementation schedules that impact Seaway operations and lock efficiency. In fact, the SLSDC's plan to spread the *Robinson Bay* tugboat replacement cost of approximately \$25 million over several years produces some project risks. The impacts of not funding these two projects in FY 2017 are:

Robinson Bay Tugboat Replacement – Without the \$10 million request in FY 2017, the tugboat replacement project will have to be stopped and the project deferred to future years, resulting in significant cost increases. The initial \$10 million investment for this project was included in the FY 2016 enacted level and the House affirmed its support for this project in both its mark and in report language:

The Committee's recommendation includes funds as requested for the replacement of the Robinson Bay tugboat due to the safety, emergency response, and ice breaking missions of the vessel. (H. Rept. 114-129)

The tug is almost 60 years old and the expenses incurred in maintaining it have increased significantly in recent years. The \$10 million included in the FY 2017 request is the lowest annual amount possible for this phase of the project. The tugboat is the SLSDC's 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 U.S. and Canadian Seaway locks are modernized by 2018.

The new system employs vacuum pads mounted on vertical rails to secure the ship during the lockage process, tracking the ship as it is raised or lowered, while keeping it at a fixed distance from the lock wall.

The FY 2015 enacted level included funding to purchase and install the new system at Eisenhower Lock. The SLSDC is moving forward with the Eisenhower Lock installation and in FY 2016.

Once fully implemented at all U.S. and Canadian Seaway locks, the hands-free mooring system will produce a number of benefits involving workplace safety, carrier operating costs, transit efficiencies, and system competitiveness:

- Eliminates traditional linehandling operations with wire ropes, which increases the risk of workplace-related incidents/injuries when compared with operating the locks using the new hands-free mooring technology.
- Allows commercial carriers to reduce crew sizes and associated expenses that are needed to accommodate traditional linehandling operations.
- Reduces the time to transit one of the Seaway locks by approximately 7-10 minutes each direction.
- Increases the number of commercial ships capable of transiting the St. Lawrence Seaway (the new technology, once fully implemented, will remove many of the physical ship requirements that currently limit the number of commercial vessels capable of transiting the Seaway System).

FY 2017 SLSDC Asset Renewal Program (ARP) Projects		
ARP Project Number	Project Name	FY 2017 Request
9	Corporation Equipment – Replace Heavy and Light Equipment, Maintenance Vehicles, and Shop Equipment	\$ 100,000
12	Corporation Equipment – Floating Plant/Tugs – Replace	10,000,000
21	Both Locks – Compressed Air Systems – Upgrade/Replace	100,000
23	Both Locks – Install Vessel Vacuum Mooring Systems	6,650,000
30	Eisenhower Lock – Ice Flushing System – Upgrade	100,000
38	Both Locks – Upgrade/Replace Emergency Generators	100,000
58	Corporation Facilities – Upgrades to Meet Sustainability and Energy Goals	100,000
61	Both Locks – Replace Recess Covers on Lock Walls	100,000
64	Corporation Facilities – Upgrade Lock Structures Maintenance Building	100,000
ARP Totals (9 projects):		\$17,350,000

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.

- (1) **ARP Project No. 9: Corporation Equipment – Replace Heavy and Light Equipment, Maintenance Vehicles, and Shop Equipment (Capital Project, Capital Equipment, and Non-Capital Maintenance Equipment) (\$100,000)** – 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. In recent years, the SLSDC has purchased dual-fuel and propane-fueled vehicles in order to reduce its fleet petroleum use and greenhouse gas emissions. The SLSDC plans to investigate the feasibility of procuring B20 biodiesel to further reduce fleet petroleum use. *(SLSDC obligated \$2.8 million over seven years from FY 2009-2015)*

- (2) **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.



Computerized image of the SLSDC tugboat replacement design for the *Robinson Bay*.

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.

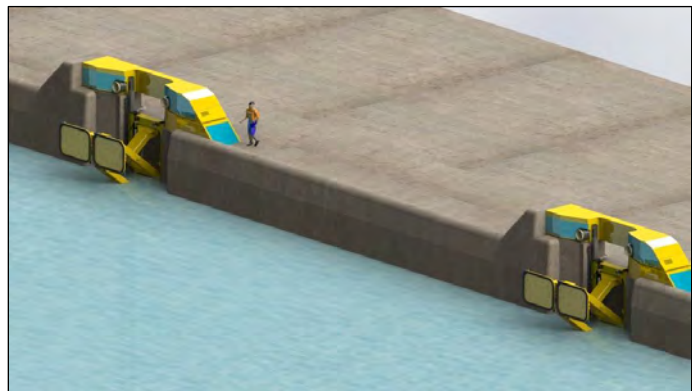
The \$10 million in the FY 2017 budget request represents the third portion of funding for a five-year project to replace both tugboats and is the lowest annual amount possible for this project. The tugboat is the SLSDC's primary watercraft for emergency responses, ice breaking operations, navigation aids placement, and other operational activities. The SLSDC's *Robinson Bay* is the only icebreaking asset in the region.

The estimated total cost to replace both tugboats over a four-year period is approximately \$32 million. (*SLSDC obligated \$8.1 million over seven years from FY 2009-2015 and additional funding was included in the FY 2016 enacted appropriation*)

(3) **ARP Project No. 21: Both Locks – Compressed Air Systems – Upgrade/Replace (Capital Project) (\$100,000)** – This project is to replace air compressors at both locks that are over 50 years old that serve the daily air requirements at the locks. They will be replaced with compressors with increased capacity to accommodate the additional requirements for bubblers that will be installed in the hands-free mooring slots to keep them free of ice during the Seaway opening and closing periods. *(SLSDC obligated \$816,000 over five years from FY 2009-2015)*

(4) **ARP Project No. 23: Both Locks – Install Vessel Vacuum Mooring Systems (Capital Project) (\$6,650,000)** – 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.

The new system employs vacuum pads mounted on vertical rails to secure the ship during the lockage process, tracking the ship as it is raised or lowered, while keeping it at a fixed distance from the lock wall.



Once fully implemented at all U.S. and Canadian Seaway locks, the hands-free mooring system will produce a number of benefits involving workplace safety, carrier operating costs, transit efficiencies, and system competitiveness.

With this new technology, the SLSDC will replace the traditional practice of manually securing cargo ships in locks with steel mooring lines, which is time consuming and potentially dangerous if a line breaks. This revised method of processing ships will enable the SLSDC to orchestrate gains in lock operation efficiency and safety. In addition, vessel operating costs would be reduced to reflect smaller crew sizes and less equipment to meet current transit requirements.

In May 2015, the Seaway’s hands-free vessel mooring system technology was recognized by the Organization for Economic Cooperation and Development (OECD) with the Promising Innovation in Transport Award.

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. The SLSDC, SLSMC, and Transport Canada are committed to installing this new technology at all U.S. and Canadian Seaway locks by 2018. *(SLSDC obligated \$11.4 million over two years from FY 2014-2015)*

- (5) **ARP Project No. 30: Eisenhower Lock – Ice Flushing System – Upgrade (Capital Project) (\$100,000)** – This project is to upgrade the ice flushing system at Eisenhower Lock. This system was installed 35 years ago and is used 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 during Seaway opening and closing periods. The operating equipment will be replaced and improvements to the physical configuration of the system will be made to improve its ice flushing effectiveness and efficiency. *(This is the first year of proposed funding for this ARP project)*
- (6) **ARP Project No. 38: Both Locks – Upgrade/Replace Emergency Generators (Capital Project) (\$100,000)** – 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. *(SLSDC obligated \$2.1 million over three years from FY 2013-2015)*
- (7) **ARP Project No. 58: Corporation Facilities – Upgrades to Meet Sustainability and Energy Goals (Capital Project and Non-Capital Maintenance Project) (\$100,000)** – 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. *(SLSDC obligated \$143,000 over five years from FY 2011-2015)*
- (8) **ARP Project No. 61: Both Locks – Replace Recess Covers on Lock Walls (Capital Project) (\$100,000)** – This is a multi-year project to replace the original 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 covers will be nearly 60 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. *(SLSDC obligated \$2,000 in FY 2015)*
- (9) **ARP Project No. 64: Corporation Facilities – Upgrade Lock Structures Maintenance Building (Capital Project) (\$100,000)** – This project is to relocate the dust collection/ventilation equipment used when blast cleaning and painting operations are performed in the Lock Structures Maintenance Building. As a result of an OSHA inspection of the building in August 2014, it was determined that a wall in the building had to be fireproofed. It has been decided that moving the dust collection/ventilation equipment to a building outside the existing building and re-piping the equipment would help resolve the issue raised by OSHA as well as make it 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. *(This is the first year of proposed funding for this ARP project)*

What Benefits Will Be Provided to the American Public Through This Request?

The Great Lakes St. Lawrence Seaway System is a binational waterway connecting world markets to North America's "Opportunity Belt" – the Great Lakes region. The goal of the SLSDC's ARP is to ensure the long-term structural integrity and reliability of the Seaway infrastructure, which is a critical component to the economic vitality of the eight-state region – the world's third largest economy with economic output of nearly \$6 trillion.

The SLSDC's lock and waterway infrastructure are vital to serving the 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.

Each year, approximately 40-50 million metric tons of cargo is moved through the Seaway locks. After more than half a century of continuous operation in often harsh weather conditions, the Seaway infrastructure needs to be rehabilitated to continue its strong record of safety and reliability for the next half century.

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, an approximate value of \$54 million in 2015 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.¹⁴

Without the SLSDC's continued efforts to modernize the U.S. Seaway infrastructure, commercial users would begin to examine alternative, more dependable modes and routes to move goods to and from the region, which would result in increased road/rail congestion, greenhouse gas emissions, and consumer costs for goods and products.

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.

¹⁴ *Great Lakes Navigation System: Economic Strength to the Nation.*

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

Identification code 69-8003-0-7-403		2015 ACTUAL	2016 ENACTED	2017 REQUEST
	Obligations by Program Activity:			
0001	Operations and maintenance	32,042	28,400	36,028
0900	Total new obligations (Object Class 25.3)	32,042	28,400	36,028
	Budgetary Resources:			
	Budget Authority:			
	Appropriations, discretionary:			
1101	Appropriation (special or trust fund)	32,042	28,400	36,028
1160	Appropriation, discretionary (total)	32,042	28,400	36,028
1930	Total budgetary resources available	32,042	28,400	36,028
	Change in Obligated Balance:			
	Obligated Balance, Start of Year (Net):			
3000	Unpaid obligations, brought forward, Oct 1 (gross)	0	0	0
	Change in Obligated Balance during the Year:			
3010	Obligations incurred, unexpired accounts	32,042	28,400	36,028
3020	Outlays (gross) (-)	(32,042)	(28,400)	(36,028)
	Obligated Balance, End of Year (Net):			
3050	Unpaid obligations, end of year (gross)	0	0	0
3100	Obligated balance, start of year (net)	0	0	0
3200	Obligated balance, end of year (net)	0	0	0
	Budget Authority and Outlays, Net:			
	Discretionary:			
	Gross Budget Authority and Outlays:			
4000	Budget authority, gross	32,042	28,400	36,028
	Outlays, gross:			
4010	Outlays from new discretionary authority	32,042	28,400	36,028
	Additional Offsets against Gross Budget Authority only:			
4070	Budget authority, net (discretionary)	32,042	28,400	36,028
4080	Outlays, net (discretionary)	32,042	28,400	36,028
	Budget Authority and Outlays, Net (total):			
4180	Budget authority, net (total)	32,042	28,400	36,028
4190	Outlays, net (total)	32,042	28,400	36,028

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

<u>YEAR</u>	<u>REQUEST</u>	<u>ENACTED</u>
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 /1
2012	\$33,996,000	\$32,259,000
2013	\$33,000,000	\$30,572,000 /2
2014	\$32,855,000	\$31,000,000
2015	\$31,500,000	\$32,042,000
2016	\$36,400,000	\$28,400,000
2017	\$36,028,000	

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

2/ 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		2015 ACTUAL	2016 ENACTED	2017 REQUEST
OBLIGATIONS BY PROGRAM ACTIVITY				
Reimbursable Programs:				
0801	Operations and maintenance	17,901	19,050	19,478
0802	Replacements and improvements	17,413	10,150	17,350
0900	Total new obligations	35,315	29,200	36,828
BUDGETARY RESOURCES				
Unobligated Balance:				
	Authority to borrow	3,200	3,200	3,200
	Fund balance	13,712	11,265	11,265
1000	Unobligated balance brought forward, Oct 1	16,912	14,465	14,465
Nonexpenditure Transfers:				
1011	Unobligated balance transferred from other accounts	0	0	0
Adjustments				
1021	Unobligated Balance: Recoveries of prior year unpaid obligations	222	0	0
1050	Unobligated balance (total)	17,134	14,465	14,465
Budget Authority:				
Spending Authority from Offsetting Collections:				
1800	BA: Mandatory: Spending authority: Collected	32,746	29,200	36,828
1801	BA: Mandatory: Spending authority: Change in uncollected payments, Federal sources (+ or -)	(100)	0	0
1850	Budget Authority: Mandatory: Spending authority from offsetting collections (total)	32,646	29,200	36,828
1910	Total budgetary resources available (discretionary and mandatory)	49,780	43,665	51,293
MEMORANDUM (NON-ADD) ENTRIES				
	Authority to borrow	3,200	3,200	3,200
	Fund balance	11,265	11,265	11,265
1941	Unobligated Balance: Memo: Unexpired unobligated balance, end of year	14,465	14,465	14,465
CHANGE IN OBLIGATED BALANCE				
Unpaid Obligations:				
3000	Obligated Balance: SOY: Unpaid obligations, brought forward, Oct 1	17,933	21,431	12,431
3010	Obligated Balance: Obligations incurred, unexpired accounts	35,315	29,200	36,828
3020	Obligated Balance: Outlays (gross) (-)	(31,595)	(38,200)	(46,828)
3040	Obligated Balance: Recoveries of unpaid prior year obligations, unexpired accounts	(222)	0	0
3050	Obligated Balance: EOY: Unpaid obligations, end of year	21,431	12,431	2,431
Uncollected Payments:				
3060	Obligated Balance: SOY: Uncollected customer payments, Federal sources, brought forward, Oct 1 (-)	(100)	0	0
3070	Obligated Balance: Change in uncollected customer payments, Federal sources, unexpired accounts (+ or -)	100	0	0
3090	Federal sources, end of year (-)	0	0	0
MEMORANDUM (NON-ADD) ENTRIES				
3100	Obligated balance, start of year (+ or -)	17,833	21,431	12,431
3200	Obligated balance, end of year (+ or -)	21,431	12,431	2,431
BUDGETARY AUTHORITY AND OUTLAYS, NET:				
Mandatory:				
Gross Budget Authority and Outlays:				
4090	Mandatory: Budget authority, gross	32,646	29,200	36,828
Mandatory: Outlays, gross				
4100	Mandatory: Outlays from new authority	31,305	29,200	36,828
4101	Mandatory: Outlays from balances	290	9,000	10,000
4110	Mandatory: Outlays, gross (total)	31,595	38,200	46,828
Offsets against Gross Budget Authority and Outlays:				
Offsets collections (collected) from:				
4120	Mandatory: Offsets, BA and OL: Collections from Federal sources (-)	(32,090)	(28,400)	(36,028)
4123	Mandatory: Offsets, BA and OL: Collections from Non-Federal sources (-)	(656)	(800)	(800)
4130	Mandatory: Offsets against gross budget authority and outlays (total) (-)	(32,746)	(29,200)	(36,828)
Additional Offsets against Gross Budget Authority only:				
4140	Mandatory: Offset, BA: Change in uncollected payments, Federal sources, unexpired accounts (+ or -)	100	0	0
4150	Mandatory: Additional offsets against budget authority only (total)	100	0	0
4160	Mandatory: Budget authority, net	0	0	0
4170	Mandatory: Outlays, net	(1,151)	9,000	10,000
Budget Authority and Outlays, Net (total):				
4180	Budget authority, net (discretionary and mandatory)	0	0	0
4190	Outlays, net (discretionary and mandatory)	(1,151)	9,000	10,000

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

Identification code 69-4089-0-3-403		2015 ACTUAL	2016 ENACTED	2017 REQUEST
	Personnel compensation:			
11.1	Full-time permanent	9,510	10,256	10,342
11.3	Other than full-time permanent	226	75	75
11.5	Other personnel compensation	796	679	679
11.9	Total personnel compensation	10,532	11,010	11,096
12.1	Civilian personnel benefits	3,776	3,766	3,766
	Personal compensation and benefits	14,308	14,776	14,862
21.0	Travel and transportation of persons	259	275	275
22.0	Transportation of things	5	3	3
23.2	Rental payments to others	1	4	4
23.3	Communications, utilities, and miscellaneous	179	201	204
23.0	Total rent, communications, and utilities	180	205	208
24.0	Printing and reproduction	13	15	15
25.1	Advisory and assistance services	395	29	29
25.2	Other services from non-Federal sources	1,294	756	765
25.3	Other goods and services from Federal Sources	3,120	1,762	2,079
25.4	Operation and maintenance of facilities (includes ARP)	269	11	11
25.6	Medical care	14	14	14
25.7	Operation and maintenance of equipment	43	10	10
25.0	Total other contractual services	5,135	2,582	2,908
26.0	Supplies and materials	1,693	1,194	1,207
31.0	Equipment (includes ARP)	416	10,050	10,100
32.0	Land and structures (includes ARP)	13,306	100	7,250
	Total other-than-personnel	21,007	14,424	21,966
99.9	Total obligations	35,315	29,200	36,828

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

Identification code 69-4089-0-3-403	2015 ACTUAL	2016 ENACTED	2017 REQUEST
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	2014 ACTUAL	2015 ACTUAL
Assets:		
Federal assets:		
1101 Fund balance with Treasury	21,529	22,490
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	74	63
1207 Advances and prepayments	0	0
Other Federal assets:		
1801 Cash and other monetary assets	10,326	10,524
1803 Property, plant and equipment, net	123,201	133,640
1901 Other assets	5,429	4,735
1999 Total assets	160,559	171,452
Liabilities:		
Federal liabilities:		
2101 Accounts payable	0	0
Non-Federal liabilities:		
2201 Accounts payable	4,415	4,308
2206 Pension and other actuarial liabilities	4,742	4,078
2207 Other	0	0
2999 Total liabilities	9,157	8,386
Net Position:		
3200 Invested capital	138,358	148,798
3300 Cumulative results of operations	13,044	14,268
3999 Total net position	151,402	163,066
4999 Total liabilities and net position	160,559	171,452

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

Identification code 69-4089-0-3-403	2015 ACTUAL	2016 ENACTED	2017 REQUEST
Operations and Maintenance:			
1. Lock and Marine Operations	5,708	6,074	6,210
2. Maintenance and Engineering	6,219	6,618	6,767
3. General and Development	2,080	2,214	2,264
4. Administrative	3,894	4,144	4,237
Total Operations and Maintenance	17,901	19,050	19,478
Replacements and Improvements:			
1. Equipment	251	10,050	10,100
2. Capital Projects	17,163	100	7,250
Total Replacements and Improvements	17,414	10,150	17,350
Total Obligations	35,315	29,200	36,828
Authorized Positions by Activity:			
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
Total Authorized Positions	144	144	144

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

Identification code 69-4089-0-3-403	2015 ACTUAL	2016 ENACTED	2017 REQUEST
Field Offices:			
Business travel	58	64	64
Travel associated with training, conferences, and workshops	14	15	15
Travel to and from Washington, D.C.	0	0	0
Travel to and from Massena, N.Y.	22	24	24
Foreign travel	0	0	0
Canadian travel	9	10	10
Subtotal	103	113	113
DC Office:			
Business travel	30	33	33
Travel associated with training, conferences, and workshops	40	43	43
Travel to and from Washington, D.C.	24	26	26
Travel to and from Massena, N.Y.	0	0	0
Foreign travel	15	16	16
Canadian travel	41	44	44
Subtotal	150	162	162
Asset Renewal Program	6	0	0
Grand Total	259	275	275

**Asset Renewal Program
Capital Investment Plan**

U.S. St. Lawrence Seaway Asset Renewal Program Capital Investment Plan *FYs 2017-2021*



**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, please 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 2017-2021

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 represents nearly \$6 trillion in annual economic activity, which equates to the third largest economy in the world if it were a country, behind only the United States and China.

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. 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 began its Asset Renewal Program (ARP) for its navigation infrastructure and associated facilities and equipment. The projects and equipment included in the ARP address various needs for the two U.S. Seaway locks, the Seaway International Bridge, maintenance dredging, operational systems, and Corporation facilities and equipment in Massena, N.Y. 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 SLSDC obligated \$109 million on 48 separate projects during the ARP's first seven years (FYs 2009-2015) (*see page 25*). 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 2017-2021 period, the Seaway ARP/Capital Investment Plan (CIP) includes 60 separate ARP projects and equipment estimated at \$98.3 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 10-23 and 26-27. 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.

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 \$60 million of ARP funds obligated during the program's first seven years were awarded within the Upstate New York region. In addition to these contracts, the ARP generates, on average, \$2 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[®], which serves as North America's leading supplier of construction cost information. In several cases, estimates for FYs 2017-2021 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, an approximate value of \$54 million in 2015 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.

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.

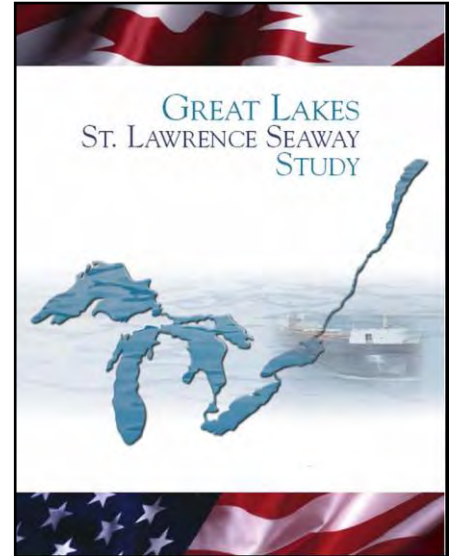
The U.S. Seaway System reliability rate for Fiscal Year 2015 was 97.3 percent. System reliability was impacted by several vessel incidents during the 2015 navigation season, accounting for 80 percent of all system delays. The SLSDC has the most control over the proper functioning of its lock equipment. In FY 2015, lock-related delays represented only 5 percent of all FY 2015 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/glsl-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.

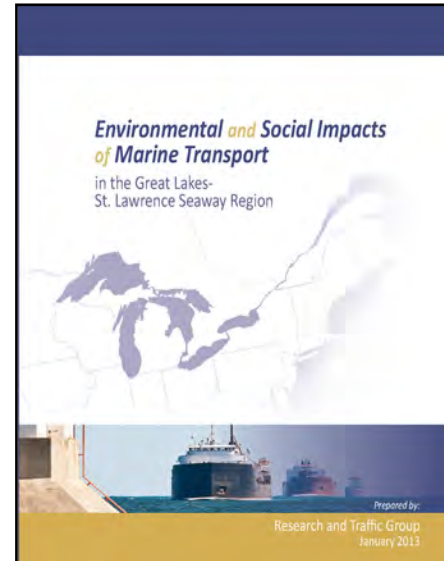
(The report is available at: www.greatlakes-seaway.com/en/pdf/eco_impact_full.pdf)



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:

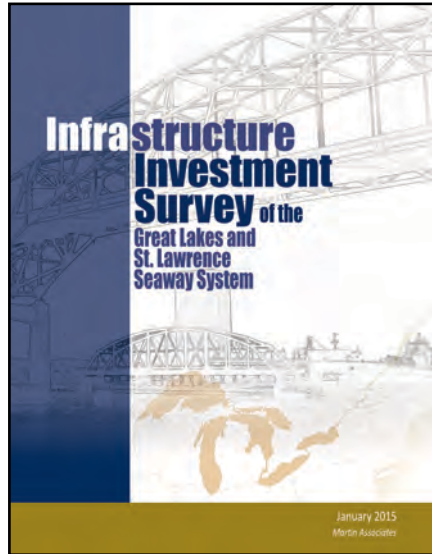
- The Great Lakes/Seaway fleet is nearly 7 times more fuel-efficient than trucks and 1.14 times more fuel-efficient than rail.
- Rail and trucks would emit 19 percent and 533 percent more greenhouse gas emissions respectively if these modes carried the same cargo the same distance as the Great Lakes/Seaway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





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:

<http://greatlakesseaway.org/wp-content/uploads/2015/04/Investment-Survey-Final-Version-LR.pdf>)

SUMMARY OF SLSDC ARP CAPITAL AND MAINTENANCE PROJECTS

FYs 2017-2021

\$98,295,000

The SLSDC's Asset Renewal Program (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 2020 and 2021 – \$600,000)** – 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. *(SLSDC obligated \$439,000 over four years in FYs 2009-2010 and 2014-2015)*

- (2) **Project No. 3: Both Locks – Rehabilitate Mooring Buttons, Pins, and Concrete Along Guidewalls and Guardwalls (Capital Project) (FYs 2020 and 2021 – \$800,000)** – This project is to rehabilitate the upstream and downstream approach walls at both Eisenhower and Snell Locks. These are mass concrete monolithic structures with vessel mooring buttons located behind them for transiting vessels to tie to. Since they were constructed, the concrete lifts/blocks have been dislodged and concrete damaged by vessel impact and the mooring buttons have settled such that they collect water/ice, making them difficult to use. The rehabilitation work would include pinning dislodged lifts, repairing damaged concrete and raising mooring buttons that have settled to improve the serviceability of the approach walls. *(SLSDC obligated \$35,000 over two years in FYs 2009-2010)*

- (3) **Project No. 4: Both Locks – Culvert Valve Machinery – Upgrade to Hydraulic Operation (Capital Project) (FY 2021 – \$400,000)** – This project is for replacing the operating machinery for the Eisenhower and Snell Lock culvert valves, which are utilized for filling and emptying the locks. This machinery is nearly 50 years old and the open gearing is exhibiting macropitting. This equipment needs to be upgraded to insure its continued reliability. Failure of this equipment will cause delays to shipping while repairs are made. Due to the fact that this machinery was custom made and spare parts are limited, repairs to multiple pieces of machinery using the spare parts that are on-hand would not be possible. The upgrade will include new hydraulic operating machinery to match the upgrades made at the Canadian Seaway locks and other similar locks in the United States. *(SLSDC obligated \$9.2 million over five years in FYs 2009-2013)*
- (4) **Project No. 5: Both Locks – Rehabilitate Winter Maintenance Lock Covers (Capital Project) (FYs 2018, 2019, 2020, and 2021 – \$220,000)** – 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. *(SLSDC obligated \$169,000 over seven years in FYs 2009-2015)*
- (5) **Project No. 8: Floating Navigational Aids – Upgrade/Replace (Capital Project) (FYs 2018, 2019, 2020, and 2021 – \$900,000)** – 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. *(SLSDC obligated \$341,000 over five years in FYs 2009-2010 and 2013-2015)*
- (6) **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, 2020, and 2021 – \$1,800,000)** – 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. *(SLSDC obligated \$2.8 million over seven years in FYs 2009-2015)*
- (7) **Project No. 10: Both Locks – Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities (Non-Capital Maintenance Project) (FYs 2018, 2019, 2020, and 2021 – \$425,000)** – 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. *(SLSDC obligated \$428,000 over six years in FYs 2009-2014)*

- (8) **Project No. 11: Fixed Navigational Aids – Rehabilitate (Capital Project and Non-Capital Maintenance Project) (FYs 2018, 2019, 2020, and 2021 – \$500,000)** – 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. (SLSDC obligated \$114,000 over six years in FYs 2010-2015 and additional obligations are expected in FY 2016)
- (9) **Project No. 12: Corporation Equipment – Upgrade/Replace Floating Plant (Capital Project, Capital Equipment, and Non-Capital Maintenance Project) (FYs 2017, 2018, 2019, 2020, and 2021 – \$21,600,000)** – 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 tugboats.

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 2017 budget request represents the third portion of funding for a four-year project to replace both tugboats and 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. The SLSDC's *Robinson Bay* is the only icebreaking asset in the region.

In FY 2016, the SLSDC will fund the second year of an estimated five-year, \$32 million effort to replace the SLSDC's two tugboats – *Robinson Bay* and *Performance* (\$10 million). (SLSDC obligated \$8.1 million over seven years in FYs 2009-2015 and additional obligations are expected in FY 2016)

- (10) **Project No. 14: Corporation Facilities – Replace Paving and Drainage Infrastructure (Capital Project) (FY 2019, 2020, and 2021 – \$4,750,000)** – 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. (SLSDC obligated \$2.8 million over three years in FYs 2009-2011)
- (11) **Project No. 15: Eisenhower Lock Highway Tunnel – Rehabilitate (Capital Project and Non-Capital Maintenance Project) (FYs 2019 and 2021 – \$800,000)** – 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. (SLSDC obligated \$1.6 million over six years in FYs 2009-2012 and 2014-2015)
- (12) **Project No. 16: Corporation Technologies - Upgrade GPS/AIS/TMS (Capital Project and Capital Equipment) (FYs 2018, 2019, 2020, and 2021 – \$500,000)** – 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. (SLSDC obligated \$190,000 over four years in FYs 2009-2010 and 2012-2013)
- (13) **Project No. 17: Navigation Channels – Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments (Non-Capital Maintenance Project) (FYs 2018 and 2020 – \$12,500,000)** – 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. (SLSDC obligated \$8.1 million over six years in FYs 2009 and 2011-2015)

- (14) **Project No. 19: Corporation Facilities – Upgrade Electrical Distribution Equipment (Capital Project) (FYs 2018, 2019, 2020, and 2021 – \$1,250,000)** – This project is for upgrading electrical distribution equipment at both Eisenhower and Snell Locks and at the Maintenance Facility to insure continued reliability. The majority of this equipment is more than 50 years old. *(SLSDC obligated \$1.1 million over six years in FYs 2010-2015)*
- (15) **Project No. 20: Both Locks – Upgrade Lock Status/Controls (Capital Project and Non-Capital Maintenance Project) (FYs 2018, 2019, 2020, and 2021 – \$400,000)** – 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. *(SLSDC obligated \$422,000 over seven years in FYs 2009-2015)*
- (16) **Project No. 21: Both Locks – Compressed Air Systems – Upgrade/Replace (Capital Project) (FYs 2017 and 2018 – \$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. *(SLSDC obligated \$816,000 over five years in FYs 2009-2012 and 2015)*
- (17) **Project No. 22: Both Locks – Install Vessel Self Spotting Equipment (Capital Project) (FYs 2018 and 2019 – \$200,000)** – 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. *(SLSDC obligated \$487,000 over two years in FYs 2014-2015)*
- (18) **Project No. 23: Both Locks – Install Vessel Vacuum Mooring Systems (Capital Project) (FY 2017, 2018, 2019, 2020, and 2021 – \$7,100,000)** – 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.

The new system employs vacuum pads mounted on vertical rails to secure the ship during the lockage process, tracking the ship as it is raised or lowered, while keeping it at a fixed distance from the lock wall.

Once fully implemented at all U.S. and Canadian Seaway locks, the hands-free mooring system will produce a number of benefits involving workplace safety, carrier operating costs, transit efficiencies, and system competitiveness.

With this new technology, the SLSDC will replace the traditional practice of manually securing cargo ships in locks with steel mooring lines, which is time consuming and potentially dangerous if a line breaks. This revised method of processing ships will enable the SLSDC to orchestrate gains in lock operation efficiency and safety. In addition, vessel operating costs would be reduced to reflect smaller crew sizes and less equipment to meet current transit requirements.

In May 2015, the Seaway's hands-free vessel mooring system technology was recognized by the Organization for Economic Cooperation and Development (OECD) with the Promising Innovation in Transport Award.

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. The SLSDC, SLSMC, and Transport Canada are committed to installing this new technology at all U.S. and Canadian Seaway locks by 2018. *(SLSDC obligated \$11.4 million over two years in FYs 2014-2015 and additional obligations are expected in FY 2016)*

- (19) **Project No. 24: Both Locks – Structural Repair – Grout Leaks in Galleries and Recesses (Non-Capital Maintenance Project) (FYs 2019, 2020, and 2021 – \$450,000)** – 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. *(SLSDC obligated \$38,000 in FY 2009)*
- (20) **Project No. 25: Corporation Facilities – Upgrade/Replace Fire Alarm/Protection Systems (Capital Project) (FYs 2018 and 2021 – \$250,000)** – This project is for replacing antiquated fire alarm and fire protection systems at Corporation facilities in Massena, N.Y. *(SLSDC obligated \$8,000 over two years in FYs 2009 and 2011)*
- (21) **Project No. 26: Corporation Facilities – Upgrade Storage for Lock Spare Parts (Capital Project) (FYs 2019 and 2020 – \$950,000)** – 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. *(SLSDC obligated \$1.6 million over five years in FYs 2010-2011 and 2013-2015)*
- (22) **Project No. 27: Corporation Facilities – Replace Windows and Doors and Repair Building Facades (Capital Project) (FYs 2018, 2019, 2020, and 2021 – \$1,400,000)** – 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. *(SLSDC obligated \$49,000 over five years in FYs 2010-2013 and 2015)*

- (23) **Project No. 28: Snell Lock – Walls, Sills and Culverts – Rehabilitate Concrete (Capital Project) (FYs 2020 and 2021 – \$5,000,000)** – 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. *(No prior ARP funds were obligated)*
- (24) **Project No. 29: Eisenhower Lock – Walls, Sills and Culverts – Rehabilitate Concrete (Capital Project) (FYs 2019 and 2021 – \$5,000,000)** – This project is to replace deteriorated/damaged concrete at Eisenhower Lock. 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. *(SLSDC obligated \$209,000 in FY 2010)*
- (25) **Project No. 30: Eisenhower Lock – Ice Flushing System – Upgrade (Capital Project) (FYs 2017 and 2021 – \$200,000)** – 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. *(No prior ARP funds were obligated)*
- (26) **Project No. 32: Snug Harbor – Rehabilitate Spare Gate Storage and Assembly Area (Capital Project) (FYs 2019 and 2020 – \$300,000)** – This project is for rehabilitating the spare miter gate storage and assembly area at Snug Harbor. The work will include repair of the spare gate assembly pads and their supporting piles, repairs to failing sheetpile bulkheads, and painting of the spare miter gates and gate assembly towers. *(SLSDC obligated \$2.5 million over four years in FYs 2010-2011 and 2013-2014)*
- (27) **Project No. 33: Both Locks – Upgrade Drainage Infrastructure in Galleries and Recesses (Capital Project) (FYs 2018, 2019, 2020, and 2021 – \$350,000)** – 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. *(SLSDC obligated \$309,000 over three years in FYs 2013-2015)*
- (28) **Project No. 34: Both Locks – Improve Ice Control (Capital Project) (FYs 2018, 2019, 2020, and 2021 – \$600,000)** – This project is to improve the methods/equipment used to control ice in and around both U.S. Seaway 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. *(SLSDC obligated \$7,000 in FY 2010)*

- (29) **Project No. 35: Vessel Mooring Cells – Rehabilitate and Extend (Capital Project)** (FYs 2018 and 2019 – \$200,000) – 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. *(No prior ARP funds were obligated)*
- (30) **Project No. 36: Eisenhower Lock – Diffusers – Replace (Capital Project)** (FY 2019 – \$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. *(No prior ARP funds were obligated)*
- (31) **Project No. 37: Eisenhower Lock – Construct Drydock for Vessel Maintenance (Capital Project)** (FY 2020 – \$1,000,000) – 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. *(No prior ARP funds were obligated)*
- (32) **Project No. 38: Both Locks – Upgrade/Replace Emergency Generators (Capital Project)** (FYs 2017 and 2020 – \$800,000) – 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. *(SLSDC obligated \$2.1 million over three years in FYs 2013-2015)*
- (33) **Project No. 41: Snell Lock – Install Ice Flushing System Technologies (Capital Project)** (FYs 2018 – \$1,000,000) – This multi-year project will result in the installation of an ice flushing system at Snell Lock similar to the one already in operation at Eisenhower Lock. The project is critical to the safe and efficient operation of Snell Lock during the waterway's opening and closing periods when ice is present. With today's larger ships transiting the Seaway, the lock must be flushed almost completely free of ice before a vessel can be allowed to enter the locks because of the limited space between the vessels and the lock walls. Currently, ice is flushed from the Snell Lock chamber by utilizing the lock filling valves, exposing them to very high water flow/velocity for long periods of time. This causes the valves to vibrate and, in some instances, incur damage. *(SLSDC obligated \$13.5 million over five years in FYs 2011-2015)*

- (34) **Project No. 43: Both Locks – Miter Gate Machinery – Upgrade/Replace (Capital Project) (FYs 2018 – \$800,000)** – This project is for replacing the operating machinery for the miter gates at both locks. This machinery is more than 50 years old and needs to be upgraded to insure its continued reliability. The upgrade will include new hydraulic operating equipment to match the improvements made at the Canadian Seaway locks and other locks in the United States. *(SLSDC obligated \$5.4 million over five years in FYs 2011-2015)*
- (35) **Project No. 44: Both Locks – Ship Arrestor Machinery – Upgrade/Replace (Capital Project) (FYs 2018 and 2019 – \$1,000,000)** – 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. *(No prior ARP funds were obligated)*
- (36) **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. *(No prior ARP funds were obligated)*
- (37) **Project No. 48: Both Locks – Stiffleg Derricks – Replace (Capital Project) (FY 2021 – \$1,000,000)** – 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. *(No prior ARP funds were obligated)*
- (38) **Project No. 50: Snell Lock – Diffusers – Replace (Capital Project) (FY 2021 – \$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. *(No prior ARP funds were obligated)*
- (39) **Project No. 51: Corporation Facilities – Upgrade Physical Security to Meet HSPD-12 Requirements (Capital Project and Non-Capital Maintenance Project) (FYs 2018, 2019, 2020, and 2021 – \$220,000)** – 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. *(SLSDC obligated \$425,000 over six years in FYs 2010-2015 and additional obligations are expected in FY 2016)*

- (40) **Project No. 52: Corporation Facilities – Eisenhower Lock Visitors’ Center – Replace/Upgrade (Capital Project) (FYs 2018 and 2019 – \$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. (SLSDC obligated \$1.1 million over four years in FYs 2011 and 2013-2015)

- (41) **Project No. 57: Corporation Technologies – Upgrade Network Security (Capital Project and Non-Capital Maintenance Project) (FYs 2018, 2019, 2020, and 2021 – \$220,000)** – 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. *(SLSDC obligated \$184,000 over three years in FYs 2011-2013)*
- (42) **Project No. 58: Corporation Facilities – Upgrades to Meet Sustainability and Energy Goals (Capital Project) (FYs 2017, 2018, 2019, 2020, and 2021 – \$600,000)** – 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. *(SLSDC obligated \$143,000 over five years in FYs 2011-2015)*
- (43) **Project No. 59: Corporation Facilities – Communications Improvements (Capital Project) (FYs 2018 and 2021 – \$300,000)** – 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. Upgrading this equipment will improve the quality and reliability of these communications, which are critical to safe and efficient navigation in the Seaway. *(SLSDC obligated \$29,000 in FY 2015)*
- (44) **Project No. 60: Both Locks – Improve Access and Rehabilitate Machinery in Crossovers and Recesses (Capital Project) (FYs 2018, 2019, 2020, and 2021 – \$450,000)** – 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. *(SLSDC obligated \$716,000 in FY 2015)*
- (45) **Project No. 61: Both Locks – Replace Recess Covers on Lock Walls (Capital Project) (FYs 2017, 2018, 2019, 2020, and 2021 – \$320,000)** – 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. *(SLSDC obligated \$2,000 in FY 2015)*

- (46) **Project No. 62: Both Locks – Install/Upgrade Air Curtains (Capital Project)** (FYs 2018, 2019, and 2021 – \$4,050,000) – 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. *(No prior ARP funds were obligated)*
- (47) **Project No. 63: Both Locks – Install Electronic Please Craft Toll Collection Facilities (Capital Project)** (FY 2019 – \$100,000) – 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, SLSDC linehandlers at the locks collect cash from those boat operators that have not paid on-line before entering the Seaway. *(No prior ARP funds were obligated)*
- (48) **Project No. 64: Corporation Facilities – Upgrade Lock Structures Maintenance Building (Capital Project)** (FYs 2017 and 2018 – \$150,000) – 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. *(No prior ARP funds were obligated)*
- (49) **Project No. 66: Corporation Facilities – Upgrade/Replace CCTV Systems (Capital Project)** (FY 2018 – \$250,000) – This project upgrades the Corporation’s CCTV system and provides additional cameras, monitors, and data recording capabilities for the hands-free mooring systems to be installed at Eisenhower and Snell Locks. The existing CCTV system has also exceeded its expected service life and daily security and vessel traffic monitoring has become increasingly difficult due to frequent equipment failures and lack of redundancy. *(No prior ARP funds were obligated)*
- (50) **Project No. 67: Both Locks – Improve Lighting (Capital Project)** (FYs 2018, 2019, 2020, and 2021 – \$450,000) – This is an ongoing rehabilitation program to upgrade or replace inefficient lighting equipment with high-efficiency lighting equipment at Eisenhower and Snell Locks. These improvements are needed to replace deteriorated existing equipment, improve illumination for employee work areas, and meet developing Executive Order and DOT policy requirements for sustainability. *(No prior ARP funds were obligated)*
- (51) **Project No. 68: Corporation Facilities – Repair/Replace Security Fencing (Capital Project)** (FYs 2018, 2019, 2020, and 2021 – \$400,000) – This is an ongoing maintenance program to repair or replace security fencing and personnel or vehicle entry gates at Corporation facilities. These improvements are needed to rehabilitate deteriorated fencing or gates and to eliminate barrier gaps that are critical to maintaining perimeter and entry security. *(No prior ARP funds were obligated)*

- (52) **Project No. 69: Both Locks – Repair/Replace Corroded Piping and Malfunctioning Valves (Capital Project) (FYs 2018, 2019, 2020, and 2021 – \$600,000)** – This is an ongoing maintenance program to repair and/or replace air and water piping, fittings, valves and monitoring equipment at Eisenhower and Snell Locks. The lock facilities have extensive air and water distribution systems that are continuously subject to corrosion damage. Repairs are needed to clean and paint or replace deteriorated piping and appurtenances to maintain these critical utilities. *(No prior ARP funds were obligated)*
- (53) **Project No. 70: Snell Lock – Upgrade Bailey Bridge / Install Swing Bridge (Capital Project) (FY 2018 – \$50,000)** – This project rehabilitates the existing Bailey bridge or designs and constructs a new swing bridge. The Bailey bridge is installed annually to provide vehicular access across Snell Lock during the winter work season. It is also part of an emergency evacuation route if the Eisenhower Lock Highway Tunnel were to be inaccessible due to an unpredictable event. The Bailey bridge was last rehabilitated over 10 years ago and needs to be disassembled for repairs, cleaning, and painting. If feasible, a new swing bridge would reduce the maintenance demands and safety hazards related to deployment procedures and operating weight limits of the Bailey bridge. *(No prior ARP funds were obligated)*
- (54) **Project No. 71: Corporation Facilities – Facility and Underground Utilities Improvements (Capital Project and Non-Capital Maintenance Project) (FY 2019 – \$200,000)** – This project investigates Corporation facilities and underground utilities to survey existing features and revise facility maps and master utility plans. Various improvements and additions over the years have necessitated the need to verify the type and location of all existing facilities and utilities and update this information on record documents, maps, and plans. *(No prior ARP funds were obligated)*
- (55) **Project No. 72: Corporation Facilities – Stormwater Upgrades (Capital Project) (FY 2020 – \$200,000)** – This project evaluates existing stormwater systems at Corporation facilities and rehabilitates or installs upgrades to meet current Environmental Protection Agency (EPA) and New York State Department of Environmental Conservation (NYSDEC) standards. These improvements are also needed for expanding stormwater collection and flow control during increasingly severe weather events to help avoid potential scouring or flooding damage to critical infrastructure. *(No prior ARP funds were obligated)*
- (56) **Project No. 74: Corporation Facilities – Building Rehabilitation (Capital Project and Non-Capital Maintenance Project) (FYs 2018, 2019, 2020, and 2021 – \$220,000)** – This is an ongoing maintenance program to rehabilitate, repair, or replace building systems and office or workshop spaces utilized by Corporation employees. These improvements are needed to update building systems, finishes, and/or furnishings that are exceeding their intended service life or requiring excessive resources to maintain. *(No prior ARP funds were obligated)*

- (57) **Project No. 75: Maintenance Facility – Install Vehicle Corrosion Prevention Facility (Capital Project) (FY 2021 – \$250,000)** – This project designs and constructs a vehicle wash building including equipment and utilities for maintaining and extending the service life of Corporation vehicles. Winter conditions in Upstate New York require the use of road salt for typically 4-6 months per year. A vehicle wash building improves the Corporation’s ability to clean vehicles more regularly and significantly reduce the corrosive effects of road salt on these vehicles. *(No prior ARP funds were obligated)*
- (58) **Project No. 76: Maintenance Facility – Upgrade Waste Storage and Lead Decontamination Rooms (Capital Project) (FYs 2018 and 2019 – \$20,000)** – This project rehabilitates and upgrades the hazardous waste and waste oil storage buildings and lead decontamination rooms to meet current EPA, NYSDEC, and Occupational Safety and Health Administration (OSHA) standards. These improvements are needed to continuously maintain updated hazardous materials storage and abatement safety procedures for Corporation employees. *(No prior ARP funds were obligated)*
- (59) **Project No. 79: Maintenance Facility – Replace Buried Potable Water Line (Capital Project and Non-Capital Maintenance Project) (FY 2018 – \$300,000)** – This project replaces an underground potable water line and constructs a new line to supply the Corporation maintenance facility. Multiple leaks were discovered in the existing 30-year-old water line in FY 2015. Attempts to repair the line have not eliminated the leaks. The water line piping has been damaged over the years by underground frost conditions and related joint fittings are beginning to fail. The water line replacement is needed to eliminate service interruptions and maintain potable water supply to the maintenance facility. *(No prior ARP funds were obligated)*
- (60) **Project No. 80: Corporation Facilities – Renewable Energy Project (Capital Project) (FYs 2020 – \$2,000,000)** – This project evaluates, designs, and constructs a renewable energy system to meet developing Executive Order and DOT policy requirements for on-site renewable energy generation. The Corporation will work with a consultant to determine a feasible system that meets policy requirements and then implement a development plan to build and commission an approved system in Massena, N.Y. *(No prior ARP funds were obligated)*

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SLSDC ARP Obligations (FYs 2009-2015)

ARP #	ARP Project Description	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	TOTAL
1	Both Locks - Replace Fendering on Approach Walls	\$241,600	\$8,091	\$0	\$0	\$0	\$188,725	\$140	\$438,556
2	Both Locks - Rehabilitate Downstream Miter Gates	\$0	\$0	\$3,539,935	\$8,384	\$3,009,854	\$203,666	\$0	\$6,761,839
3	Both Locks - Rehabilitate Mooring Buttons, Pins, and Concrete Along Guardwalls and Guardwalls <small>(Comb. w/ No. 14)</small>	\$4,117,050	\$35,422	\$0	\$0	\$0	\$0	\$0	\$35,422
4	Both Locks - Culvert Valve Machinery - Upgrade to Hydraulic Operation	\$4,638	\$6,638	\$3,965,005	\$539,889	\$203,678	\$0	\$0	\$9,170,537
5	Both Locks - Culvert Valve Machinery - Upgrade to Hydraulic Operation	\$3,102,878	\$5,680,707	\$23,781	\$28,335	\$27,906	\$34,254	\$1,700	\$169,312
6	Seaway International Bridge - Perform Structural Rehabilitation and Corrosion Prevention	\$0	\$326,898	\$65,591	\$302,468	\$162	\$0	\$0	\$8,783,585
7	Both Locks - Culvert Valves - Replace with Single Skin Valves	\$61,254	\$54,576	\$0	\$0	\$31,434	\$68,149	\$125,562	\$2,167,238
8	Floating Navigational Aids - Replace	\$1,574,504	\$481,052	\$108,038	\$81,623	\$137,393	\$227,151	\$141,124	\$2,750,885
9	Corporation Equipment - Upgrade Heavy and Light Equipment, Maintenance Vehicles, and Shop Equipment	\$19,594	\$231,269	\$93,613	\$28,003	\$17,099	\$38,320	\$0	\$427,898
10	Both Locks - Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	\$0	\$10,998	\$16,217	\$21,048	\$29,210	\$14,199	\$22,456	\$114,128
11	Fixed Navigational Aids - Rehabilitate	\$678,745	\$1,627,925	\$1,908,563	\$2,160,169	\$860,413	\$572,622	\$313,398	\$8,121,835
12	Corporation Equipment - Upgrade/Replace Floating Plant	\$143,949	\$0	\$3,348	\$89,024	\$17,820	\$0	\$283,426	\$537,567
13	Corporation Facilities - Replace Roofs	\$921,837	\$1,829,621	\$85,481	\$0	\$0	\$0	\$0	\$2,836,939
14	Corporation Facilities - Replace Paving and Drainage Infrastructure	\$26,636	\$271,804	\$99,459	\$1,523	\$0	\$1,143,224	\$33,583	\$1,576,229
15	Eisenhower Lock - Highway Tunnel - Rehabilitate	\$100,997	\$76,451	(\$3,328)	\$10,000	\$6,350	\$0	\$0	\$190,470
16	Corporation Technologies - Upgrade GPS/AIS/TMS	\$4,279,556	\$0	\$3,662,267	\$99,714	\$100	\$100	\$19,542	\$8,061,279
17	Navigation Channels - Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments	\$0	\$487,750	\$109,490	\$268,549	\$0	\$0	\$0	\$865,789
18	Eisenhower Lock - Vertical Lift Gate - Replace Wire Ropes	\$0	\$753,400	\$306,847	\$41,304	\$1,465	\$420	\$7,384	\$1,110,820
19	Corporation Facilities - Upgrade Electrical Distribution Equipment	\$8,558	\$139,805	\$89,507	\$37,549	\$76,722	\$32,570	\$37,698	\$422,409
20	Both Locks - Upgrade Lock Status/Controls	\$19,878	\$787,549	\$3,381	\$986	\$0	\$0	\$4,154	\$815,948
21	Both Locks - Compressed Air Systems - Upgrade/Replace	\$0	\$0	\$0	\$0	\$0	\$485,201	\$1,491	\$486,692
22	Both Locks - Install Vessel Self Spotting Equipment	\$0	\$0	\$0	\$0	\$0	\$686,074	\$10,756,839	\$11,442,913
23	Both Locks - Install Vessel Vacuum Mooring Systems	\$37,561	\$0	\$0	\$0	\$0	\$0	\$0	\$37,561
24	Both Locks - Structural Repair - Grout Leaks in Galleries and Recesses	\$4,148	\$0	\$4,007	\$0	\$0	\$0	\$0	\$8,155
25	Corporation Facilities - Upgrade/Replace Fire Alarm/Protection Systems	\$0	\$418,000	\$12,144	\$0	\$1,115,266	\$18,572	\$3,380	\$1,566,362
26	Corporation Facilities - Upgrade Storage for Lock Spare Parts	\$0	\$33,776	\$5,537	\$8,070	\$167	\$0	\$1,811	\$49,361
27	Corporation Facilities - Replace Windows and Doors and Repair Building Facades	\$0	\$209,295	\$0	\$0	\$0	\$0	\$0	\$209,295
28	Eisenhower Lock - Walls, Sills, and Culverts - Rehabilitate Concrete	\$2,201,585	\$2,478,896	\$347,662	\$14,961	(\$750)	\$0	\$0	\$5,042,354
29	Both Locks - Rehabilitate Upstream Miter Gates	\$0	\$12,734	\$346,600	\$0	\$2,099,934	\$42,445	\$0	\$2,501,713
30	Snug Harbor - Rehabilitate Spare Gate Storage and Assembly Area	\$0	\$0	\$0	\$0	\$6,938	\$301,737	\$152	\$308,827
31	Both Locks - Upgrade Drainage Infrastructure in Galleries and Recesses	\$0	\$7,462	\$0	\$0	\$0	\$0	\$0	\$7,462
32	Both Locks - Improve Ice Control	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
33	Both Locks - Upgrade/Replace Emergency Generators	\$0	\$0	\$0	\$0	\$1,764,008	\$344,313	\$32,774	\$2,141,095
34	Both Locks - Upgrade/Replace Emergency Generators	\$0	\$0	\$0	\$0	\$25,721	\$23,568	\$17,936	\$256,988
35	Both Locks - Dewatering Pumps - Upgrade Outdated Equipment	\$0	\$0	\$0	\$189,763	\$1,577,272	\$90,045	\$128,144	\$13,544,754
36	Snell Lock - Install Ice Flushing System Technologies	\$0	\$0	\$272,000	\$11,477,293	\$0	\$0	\$0	\$6,639,642
37	Both Locks - Miter Gates - Structural Rehabilitation	\$0	\$0	\$0	\$210	\$210	\$3,740,613	\$0	\$6,639,642
38	Both Locks - Miter Gates - Upgrade/Replace	\$0	\$0	\$133,364	\$1,207	\$505	\$3,740,933	\$1,568,096	\$5,444,105
39	Corporation Facilities - Upgrade Physical Security to Meet HSPD-12 Requirements	\$0	\$24,183	\$21,097	\$352,347	\$20,143	\$5,985	\$977	\$424,732
40	Corporation Facilities - Eisenhower Lock Visitors' Center - Replace	\$0	\$0	\$13,042	\$0	\$298,391	\$794,473	\$5,631	\$1,111,537
41	Corporation Facilities - Administration Building - Replace Elevator	\$0	\$0	\$140,346	\$0	\$0	\$0	\$0	\$140,346
42	Corporation Facilities - Maintenance Building - Replace Fuel Tanks	\$0	\$0	\$189,350	\$2,350	\$0	\$0	\$0	\$191,700
43	Corporation Facilities - Upgrade Security	\$0	\$0	\$13,025	\$0	\$0	\$0	\$0	\$13,025
44	Corporation Technologies - Upgrade Network Security	\$0	\$0	\$158,536	\$16,998	\$8,687	\$0	\$0	\$184,221
45	Corporation Facilities - Upgrade Network Security	\$0	\$0	\$47,511	\$57,036	\$8,180	\$22,140	\$8,405	\$143,272
46	Corporation Facilities - Upgrades to Meet Sustainability and Energy Goals	\$0	\$0	\$0	\$0	\$0	\$0	\$29,000	\$29,000
47	Corporation Facilities - Communications Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
48	Both Locks - Improve Access to and Rehabilitate Machinery in Crossovers and Recesses	\$0	\$0	\$0	\$0	\$0	\$0	\$716,052	\$716,052
49	Both Locks - Replace Recess Covers on Lock Walls	\$0	\$0	\$0	\$0	\$0	\$0	\$2,200	\$2,200
50	Both Locks - Install Lock Wall Guardrails	\$0	\$0	\$0	\$0	\$0	\$0	\$548,679	\$548,679
51	Miscellaneous Expenses	\$0	\$443	\$1,700	\$0	\$0	\$0	\$0	\$2,143
52	Asset Renewal Program Total	\$17,587,028	\$16,339,760	\$15,783,116	\$15,838,803	\$14,242,887	\$14,189,527	\$14,912,825	\$108,893,946

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 \$620,000 in personnel compensation for staff time associated with ARP work in FYs 2009-2015, 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)

FY 2017 Request / FY 2018-2021 Estimates

PROJECT NO.	PROJECT TITLE	FY 2017 REQUEST	FY 2018 ESTIMATE	FY 2019 ESTIMATE	FY 2020 ESTIMATE	FY 2021 ESTIMATE	FIVE-YEAR TOTALS
1	Both Locks - Replace Fendering on Approach Walls	---	---	---	\$300,000	\$300,000	\$600,000
3	Both Locks - Rehabilitate Mooring Butrons, Pins, and Concrete Along Guidewalls and Guardwalls	---	---	---	\$400,000	\$400,000	\$800,000
4	Both Locks - Culvert Valve Machinery - Upgrade to Hydraulic Operation	---	---	---	---	\$400,000	\$400,000
5	Both Locks - Rehabilitate Winter Maintenance Lock Covers	---	\$10,000	\$10,000	\$100,000	\$100,000	\$220,000
8	Floating Navigational Aids - Replace	---	\$200,000	\$200,000	\$250,000	\$250,000	\$900,000
9	Corporation Equipment - Replace Heavy and Light Equipment, Maintenance Vehicles and Shop Equipment	\$100,000	\$500,000	\$300,000	\$400,000	\$500,000	\$1,800,000
10	Both Locks - Upgrade Power Supply/Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	---	\$50,000	\$75,000	\$150,000	\$150,000	\$425,000
11	Fixed Navigational Aids - Rehabilitate	---	\$100,000	\$100,000	\$150,000	\$150,000	\$500,000
12	Corporation Equipment - Floating Plant/Tugs - Replace	\$10,000,000	\$5,000,000	\$6,000,000	\$500,000	\$100,000	\$21,600,000
14	Corporation Facilities - Replace Paving and Drainage Infrastructure	---	---	\$1,000,000	\$1,750,000	\$2,000,000	\$4,750,000
15	Eisenhower Lock - Highway Tunnel - Rehabilitate	---	---	\$500,000	---	\$300,000	\$800,000
16	Corporation Technologies - Upgrade GPS/AIS/TMS	---	\$100,000	\$100,000	\$150,000	\$150,000	\$500,000
17	Navigation Channels - Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments	---	\$5,000,000	---	\$7,500,000	---	\$12,500,000
19	Corporation Facilities - Upgrade Electrical Distribution Equipment	---	\$50,000	\$100,000	\$100,000	\$1,000,000	\$1,250,000
20	Both Locks - Upgrade Lock Status/Controls	---	\$100,000	\$100,000	\$100,000	\$100,000	\$400,000
21	Both Locks - Compressed Air Systems - Upgrade/Replace	\$100,000	\$100,000	---	---	---	\$200,000
22	Both Locks - Install Vessel Self Spotting Equipment	---	\$100,000	\$100,000	---	---	\$200,000
23	Both Locks - Install Vessel Vacuum Mooring Systems	\$6,650,000	\$300,000	\$50,000	\$50,000	\$50,000	\$7,100,000
24	Both Locks - Structural Repair - Grout Leaks in Galleries and Recesses	---	---	\$250,000	\$100,000	\$100,000	\$450,000
25	Corporation Facilities - Upgrade/Replace Fire Alarm/Protection Systems	---	\$100,000	---	---	\$150,000	\$250,000
26	Corporation Facilities - Upgrade Storage for Lock Spare Parts and Equipment	---	---	\$200,000	\$750,000	---	\$950,000
27	Corporation Facilities - Replace Windows and Doors and Repair Building Facades	---	\$100,000	\$100,000	\$200,000	\$1,000,000	\$1,400,000
28	Snell Lock - Walls, Sills and Culverts - Rehabilitate Concrete	---	---	---	\$2,000,000	\$3,000,000	\$5,000,000
29	Eisenhower Lock - Walls, Sills and Culverts - Rehabilitate Concrete	---	---	\$2,000,000	---	\$3,000,000	\$5,000,000
30	Eisenhower Lock - Ice Flushing System - Upgrade	\$100,000	---	---	---	\$100,000	\$200,000
32	Snug Harbor - Rehabilitate Spare Gate Storage and Assembly Area	---	---	\$50,000	\$250,000	---	\$300,000
33	Both Locks - Upgrade Drainage Infrastructure in Galleries and Recesses	---	\$200,000	\$50,000	\$50,000	\$50,000	\$350,000
34	Both Locks - Improve Ice Control	---	\$50,000	\$50,000	\$250,000	\$250,000	\$600,000
35	Vessel Mooring Cells - Rehabilitate and Extend	---	\$100,000	\$100,000	---	---	\$200,000
36	Eisenhower Lock - Diffusers - Replace	---	---	\$2,500,000	---	---	\$2,500,000
37	Eisenhower Lock - Construct Drydock for Vessel Maintenance	---	---	---	\$1,000,000	---	\$1,000,000

SLSDC Asset Renewal Program (ARP)

FY 2017 Request / FY 2018-2021 Estimates

PROJECT NO.	PROJECT TITLE	FY 2017 REQUEST	FY 2018 ESTIMATE	FY 2019 ESTIMATE	FY 2020 ESTIMATE	FY 2021 ESTIMATE	FIVE-YEAR TOTALS
38	Both Locks - Upgrade/Replace Emergency Generators	\$100,000	---	---	\$700,000	---	\$800,000
41	Snell Lock - Install Ice Flushing System Technologies	---	\$1,000,000	---	---	---	\$1,000,000
43	Both Locks - Miter Gate Machinery - Upgrade/Replace	---	\$800,000	---	---	---	\$800,000
44	Both Locks - Ship Arrestor Machinery - Upgrade/Replace	---	\$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	---	---	---	---	\$1,000,000	\$1,000,000
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	\$60,000	\$60,000	\$220,000
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	\$60,000	\$60,000	\$220,000
58	Corporation Facilities - Upgrades to Meet Sustainability and Energy Goals	\$100,000	\$100,000	\$100,000	\$150,000	\$150,000	\$600,000
59	Corporation Facilities - Communications Improvements	---	\$200,000	---	---	\$100,000	\$300,000
60	Both Locks - Improve Access to and Rehabilitate Machinery in Crossovers and Recesses	---	\$100,000	\$100,000	\$125,000	\$125,000	\$450,000
61	Both Locks - Replace Recess Covers on Lock Walls	\$100,000	\$50,000	\$50,000	\$60,000	\$60,000	\$320,000
62	Both Locks - Install/Upgrade Air Curtains	---	\$50,000	\$2,000,000	---	\$2,000,000	\$4,050,000
63	Both Locks - Install Electronic Pleasure Craft Toll Collection Facilities	---	---	\$100,000	---	---	\$100,000
64	Corporation Facilities - Upgrade Lock Structures Maintenance Building	\$100,000	\$50,000	---	---	---	\$150,000
66	Corporation Facilities - Upgrade/Replace CCTV Systems	---	\$250,000	---	---	---	\$250,000
67	Both Locks - Improve Lighting	---	\$100,000	\$100,000	\$125,000	\$125,000	\$450,000
68	Corporation Facilities - Repair/Replace Security Fencing	---	\$100,000	\$100,000	\$100,000	\$100,000	\$400,000
69	Both Locks - Repair/Replace Corroded Piping and Malfunctioning Valves	---	\$200,000	\$200,000	\$100,000	\$100,000	\$600,000
70	Snell Lock - Upgrade Bailey Bridge / Install Swing Bridge	---	\$50,000	---	---	---	\$50,000
71	Corporation Facilities - Facility and Underground Utilities Improvements	---	---	\$200,000	---	---	\$200,000
72	Corporation Facilities - Stormwater Upgrades	---	---	---	\$100,000	---	\$100,000
74	Corporation Facilities - Building Rehabilitation	---	\$50,000	\$50,000	\$60,000	\$60,000	\$220,000
75	Maintenance Facility - Install Vehicle Corrosion Prevention Facility	---	---	---	---	\$250,000	\$250,000
76	Maintenance Facility - Upgrade Waste Storage and Lead Decontamination Rooms	---	\$10,000	\$10,000	---	---	\$20,000
79	Maintenance Facility - Replace Buried Potable Water Line	---	\$300,000	---	---	---	\$300,000
80	Corporation Facilities - Renewable Energy Project	---	---	---	\$2,000,000	---	\$2,000,000
	TOTAL	\$17,350,000	\$20,170,000	\$20,345,000	\$20,140,000	\$20,290,000	\$98,295,000

