



U.S. Department of  
Transportation

# **BUDGET ESTIMATES**

## **FISCAL YEAR 2018**

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### **SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION**

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SUBMITTED FOR THE USE OF  
THE COMMITTEES ON APPROPRIATIONS



**U.S. DEPARTMENT OF TRANSPORTATION  
SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION  
FY 2018 BUDGET REQUEST**

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## **Saint Lawrence Seaway Development Corporation Overview**

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The Saint Lawrence Seaway Development Corporation (SLSDC), a wholly owned Government Corporation within the U.S. Department of Transportation, was created by the Congress in 1954 as the U.S. federal agency responsible for the operations and maintenance of the U.S. portion of the St. Lawrence Seaway between Montreal and Lake Erie. 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 headquarters are located in Washington, D.C.; operations are located in Massena, New York.

At the FY 2018 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. In addition, the SLSDC performs trade and economic development functions designed to enhance Great Lakes St. Lawrence Seaway System utilization.

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 (SLSMC). 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 jointly constructing, managing, and operating the Seaway. 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's annual funding is derived from an annual appropriation from the Harbor Maintenance Trust Fund (HMTF) as well as other revenues (e.g., interest on investments, pleasure craft tolls, rental payments, non-commercial tolls). The SLSDC's budget includes two programs: (1) Agency Operations and (2) Asset Renewal Program (ARP). The SLSDC's Agency Operations program consists of all agency activities and expenses, including personnel compensation and benefits, except for the funding for ARP projects.

For Fiscal Year (FY) 2018, the President's Budget for the SLSDC requests an appropriation from the HMTF of \$28.35 million to fund the operations and maintenance of the U.S. portion of the St. Lawrence Seaway (\$18.85 million) as well as projects included in the Seaway's on-going ARP (\$9.50 million). The SLSDC also estimates other revenues of \$650,000 as part of its overall spending plan for FY 2018.

The ARP program was launched in FY 2009 to renew the SLSDC's navigation infrastructure and facilities. 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. The start of the program marked the first time in the Seaway's 50-year history that a coordinated effort to repair and modernize the U.S. Seaway infrastructure had taken place. None of the ARP investments result in increases to the authorized depth or width of the navigation channel or to the size of the two locks. In the first seven years of the ARP (FYs 2009-2016), the SLSDC obligated \$120 million on 48 separate projects.

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 \$5 trillion.

Since the 15-lock binational waterway's opening in 1959, nearly 3 billion metric tons of cargo has moved on the St. Lawrence Seaway valued at \$400 billion. Additionally, maritime commerce on the Great Lakes Seaway System provides shippers with nearly \$4 billion in annual transportation cost savings compared to the next least expensive mode of transportation.<sup>1</sup>

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

In addition, Great Lakes Seaway System ships remain a fuel-efficient and cost effective mode for moving commercial goods to and from foreign markets and the Great Lakes region. The SLSDC remains dedicated to promoting the economic benefits of the marine mode, attracting new cargoes to the Seaway, and leveraging technology to enhance the system's performance and safety.

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

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

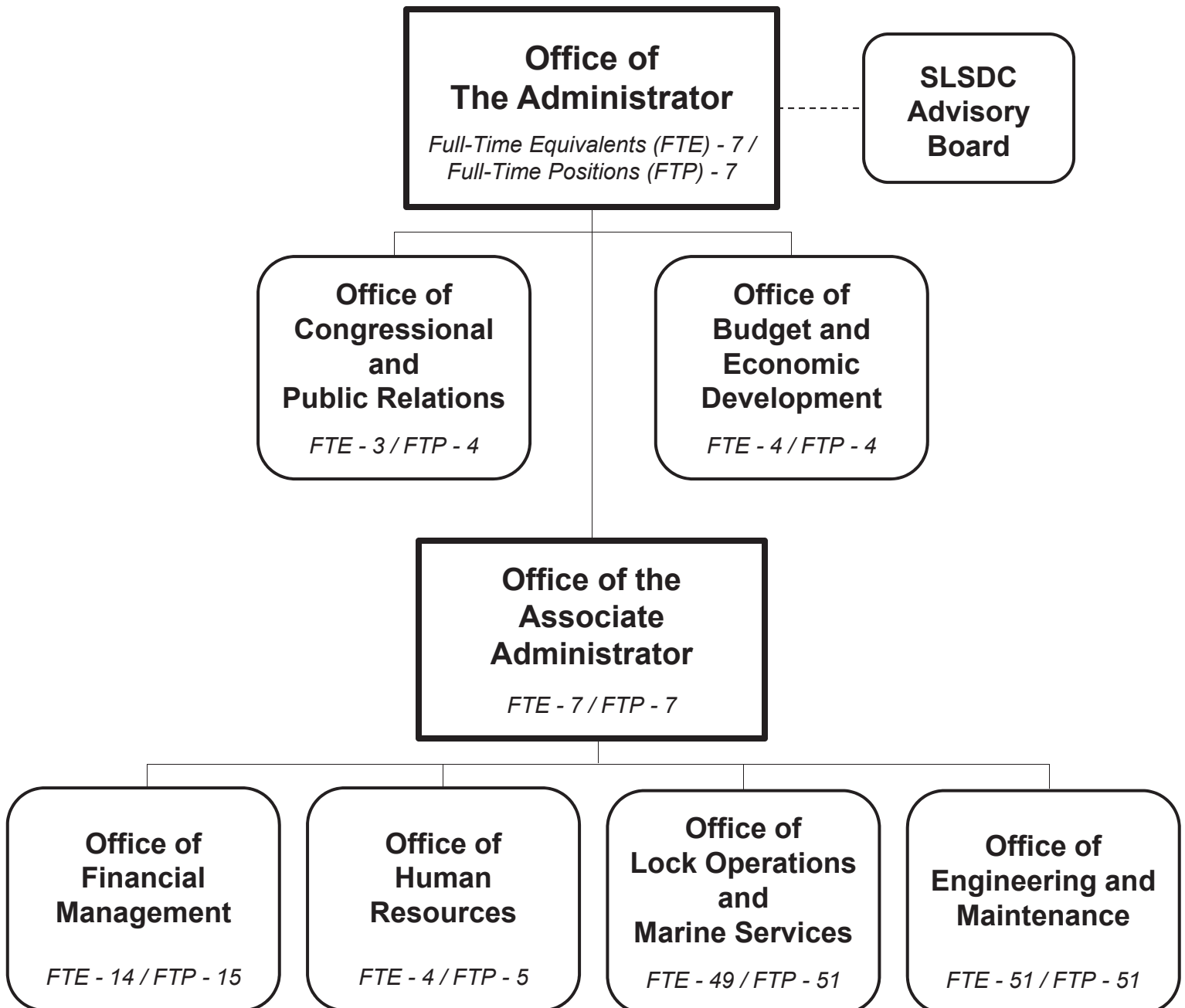


# Saint Lawrence Seaway Development Corporation

## Organization Chart

### FY 2017 FTE/FTP Estimates

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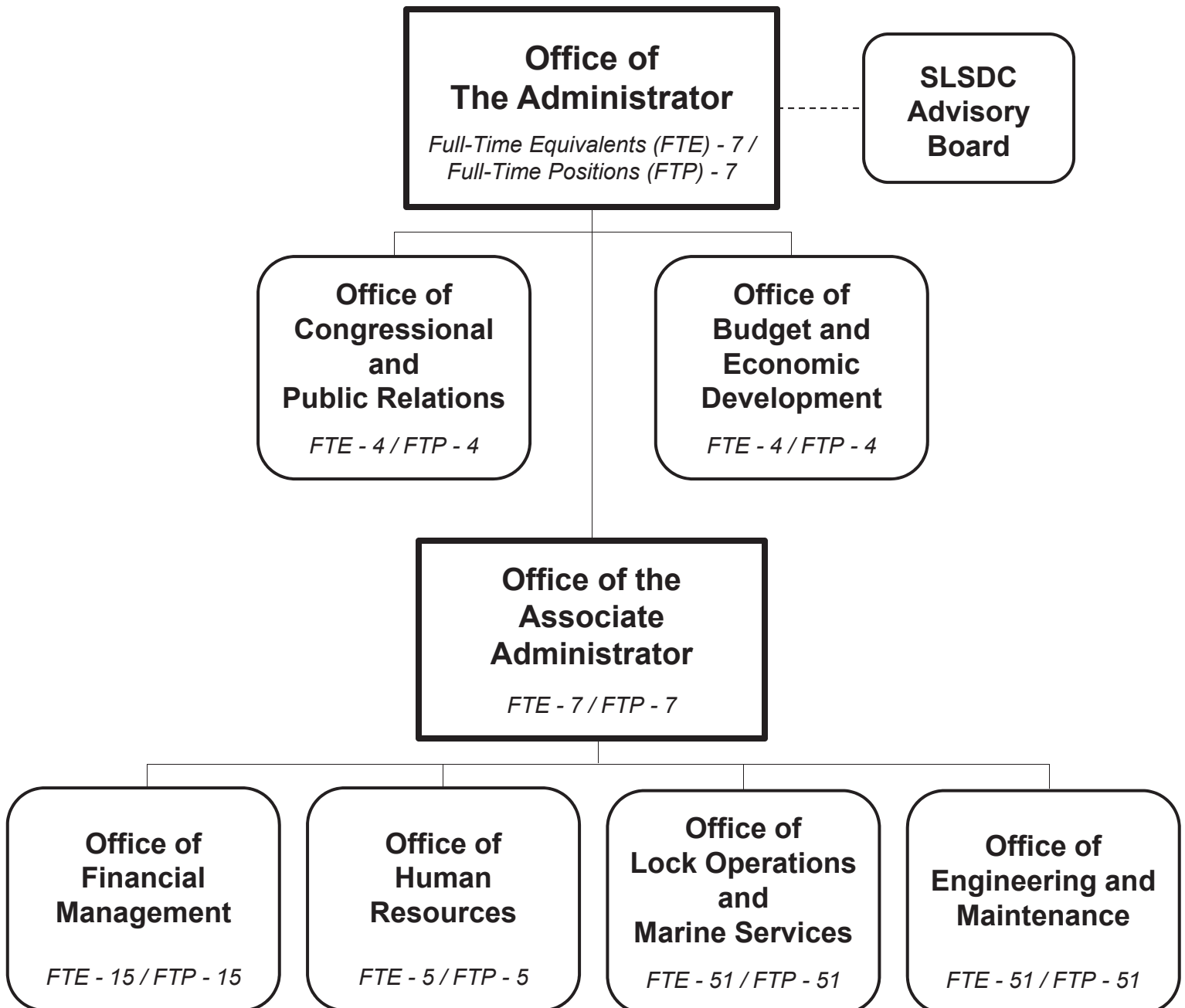


# Saint Lawrence Seaway Development Corporation

## Organization Chart

### FY 2018 FTE/FTP Estimates

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## Budget Summary Tables



**EXHIBIT II-1**  
**FY 2018 COMPARATIVE STATEMENT OF NEW BUDGET AUTHORITY**  
**Saint Lawrence Seaway Development Corporation**  
**Appropriations**  
**(\$000)**

<b>ACCOUNT NAME</b>	<b>FY 2016 ACTUAL</b>	<b>FY 2017 ANNUALIZED CR</b>	<b>FY 2017 ENACTED</b>	<b>FY 2018 REQUEST</b>
Operations and Maintenance - HMTF (69-8003)	\$28,400	\$28,346	\$36,028	\$28,346
<b>TOTAL APPROPRIATIONS:</b>	<b>\$28,400</b>	<b>\$28,346</b>	<b>\$36,028</b>	<b>\$28,346</b>

**EXHIBIT II-2**  
**FY 2018 TOTAL BUDGETARY RESOURCES BY APPROPRIATIONS ACCOUNT**  
**Saint Lawrence Seaway Development Corporation**  
**Appropriations**  
**(\$000)**

<b>ACCOUNT NAME</b>	<b>FY 2016 ACTUAL</b>	<b>FY 2017 CR</b>	<b>FY 2017 ENACTED</b>	<b>FY 2018 REQUEST</b>
<b>Operations and Maintenance - HMTF (69-8003)</b>				
Agency Operations	\$18,250	\$18,346	\$18,678	\$18,846
Asset Renewal Program	\$10,150	\$10,000	\$17,350	\$9,500
<b>TOTAL:</b>	<b>\$28,400</b>	<b>\$28,346</b>	<b>\$36,028</b>	<b>\$28,346</b>

**EXHIBIT II-4**  
**FY 2018 BUDGET AUTHORITY**  
**Saint Lawrence Seaway Development Corporation**  
**Appropriations**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>M/D</u>	<u>FY 2016 ACTUAL</u>	<u>FY 2017 ANNUALIZED CR</u>	<u>FY 2017 ENACTED</u>	<u>FY 2018 REQUEST</u>
<b>Operations and Maintenance - HMTF (69-8003)</b>	<b>D</b>				
Agency Operations	D	\$18,250	\$18,346	\$18,678	\$18,846
Asset Renewal Program	D	\$10,150	\$10,000	\$17,350	\$9,500
<b>TOTAL:</b>	<b>D</b>	<b>\$28,400</b>	<b>\$28,346</b>	<b>\$36,028</b>	<b>\$28,346</b>

**EXHIBIT II-5**  
**FY 2018 OUTLAYS**  
**Saint Lawrence Seaway Development Corporation**  
**(\$000)**

<b>ACCOUNT NAME</b>	<b>FY 2016 ACTUAL</b>	<b>FY 2017 ANNUALIZED CR</b>	<b>FY 2018 REQUEST</b>
SLSDC Fund (69x4089)	\$29,330	\$38,346	\$35,346
<b>TOTAL:</b>	<b>\$29,330</b>	<b>\$38,346</b>	<b>\$35,346</b>
[Discretionary] (Operations and Maintenance-HMTF -- 69-8003)	\$28,400	\$28,346	\$28,346
[Mandatory] (SLSDC Fund -- 69x4089)	\$930	\$10,000	\$7,000



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

BASELINE CHANGES											
	FY 2016 Actual	FY 2017 Annualized CR	FY 2018 Pay Raises*	Annualization of 2017 Pay Raises	Compensable Days (no change)	Washington Office Rent	Working Capital Fund	Non-Pay Inflation	FY 2018 Baseline Estimate	Program Increases/ Decreases	FY 2018 Request
<b>PERSONNEL RESOURCES</b>	128	139									
Direct FTEs	128	139	-	-	-	-	-	-	139	5	144
<b>FINANCIAL RESOURCES</b>											
<b>ADMINISTRATIVE EXPENSES</b>											
Salaries and Benefits	\$3,568	\$3,590	\$40	\$8	\$0	\$0	\$0	\$0	\$3,638	\$0	\$3,638
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	\$426	\$466	\$0	\$0	\$0	\$45	\$0	\$0	\$511	\$0	\$511
DOI Financial System (FPPS)	\$560	\$565	\$0	\$0	\$0	\$0	\$0	\$0	\$565	\$75	\$640
Communications Rent, and 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)	\$742	\$796	\$0	\$0	\$0	\$37	\$0	\$0	\$833	\$0	\$833
Supplies	\$25	\$25	\$0	\$0	\$0	\$0	\$0	\$0	\$25	\$0	\$25
Equipment	\$6	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$6	\$0	\$6
<b>Administrative Subtotal</b>	<b>\$5,434</b>	<b>\$5,555</b>	<b>\$40</b>	<b>\$8</b>	<b>\$0</b>	<b>\$45</b>	<b>\$37</b>	<b>\$0</b>	<b>\$5,685</b>	<b>\$75</b>	<b>\$5,760</b>
<b>PROGRAMS</b>											
Agency Operations (non-Admin.)	\$12,816	\$12,791	\$224	\$23	\$0	\$0	\$0	\$48	\$13,086	\$0	\$13,086
Asset Renewal Program (ARP)	\$10,150	\$10,000	\$0	\$0	\$0	\$0	\$0	\$0	\$10,000	(\$500)	\$9,500
<b>Programs Subtotal</b>	<b>\$22,966</b>	<b>\$22,791</b>	<b>\$224</b>	<b>\$23</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$48</b>	<b>\$23,086</b>	<b>(\$500)</b>	<b>\$22,586</b>
<b>TOTAL</b>	<b>\$28,400</b>	<b>\$28,346</b>	<b>\$264</b>	<b>\$31</b>	<b>\$0</b>	<b>\$45</b>	<b>\$37</b>	<b>\$48</b>	<b>\$28,771</b>	<b>(\$425)</b>	<b>\$28,346</b>

\* "FY 2018 Pay Raises" column includes \$98,000 for three-quarters of the proposed General Schedule (GS) pay increase of 1.9 percent and \$166,000 for a full year of the negotiated Wage Grade (WG) pay increase of 2.75 percent (SLSDC-AFGE Local 1968 Collective Bargaining Agreement dated June 22, 2016) .

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

<u>ACCOUNT NAME</u>	<u>FY 2016 ACTUAL</u>	<u>FY 2017 ANNUALIZED CR</u>	<u>FY 2018 REQUEST</u>	<u>CHANGE</u>
<b>DIRECT:</b>				
Operations and Maintenance - HMTF (69-8003)	\$742	\$795	\$832	\$37
<b>TOTAL:</b>	<u><u>\$742</u></u>	<u><u>\$795</u></u>	<u><u>\$832</u></u>	<u><u>\$37</u></u>

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

	<u>FY 2016 ACTUAL</u>	<u>FY 2017 ANNUALIZED CR</u>	<u>FY 2018 REQUEST</u>
<b><u>DIRECT FUNDED BY APPROPRIATION</u></b>			
Operations and Maintenance - HMTF (69-8003)	128	139	144
<b>TOTAL FTEs:</b>	<u><b>128</b></u>	<u><b>139</b></u>	<u><b>144</b></u>

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

	<b><u>FY 2016 ACTUAL</u></b>	<b><u>FY 2017 ANNUALIZED CR</u></b>	<b><u>FY 2018 REQUEST</u></b>
<b><u>DIRECT FUNDED BY APPROPRIATION</u></b>			
Operations and Maintenance - HMTF (69-8003)	133	144	144
<b>TOTAL POSITIONS:</b>	<b><u>133</u></b>	<b><u>144</u></b>	<b><u>144</u></b>

**Budget Request  
by Account**



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

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**APPROPRIATIONS LANGUAGE**

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

**TRUST FUNDS**

**OPERATIONS AND MAINTENANCE**

**(Harbor Maintenance Trust Fund)**

For necessary expenses to conduct the operations, maintenance, and capital asset renewal activities of those portions of the St. Lawrence Seaway owned, operated, and maintained by the Saint Lawrence Seaway Development Corporation, \$28,346,000, to be derived from the Harbor Maintenance Trust Fund, pursuant to Public Law 99-662. Of that amount, \$9,500,000 to be used on asset renewal activities shall be made available through September 30, 2019.

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### EXHIBIT III-1

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

<b><u>Program Activity</u></b>	<b><u>FY 2016 ACTUAL</u></b>	<b><u>FY 2017 ANNUALIZED CONT. RES.</u></b>	<b><u>FY 2018 REQUEST</u></b>	<b><u>CHANGE FY 2017-18</u></b>
Agency Operations	\$18,250	\$18,346	\$18,846	\$ 500
Asset Renewal Program	10,150	10,000	9,500	(500)
	-----	-----	-----	-----
<b>Total</b>	<b>\$28,400</b>	<b>\$28,346</b>	<b>\$28,346</b>	<b>\$ 0</b>
<b>FTEs</b>	<b>128</b>	<b>139</b>	<b>144</b>	<b>0</b>

#### **Program and Performance Statement**

The FY 2018 budget request for the SLSDC includes \$28.35 million from the Harbor Maintenance Trust Fund (HMTF) to fund general agency operations (\$18.85 million) and Asset Renewal Program (ARP) capital projects (\$9.50 million).

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 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 2017 TO FY 2018  
Appropriations, Obligation Limitations, and Exempt Obligations  
(\$000)**

<b><u>ITEM</u></b>	<b>Change from FY 2017 to FY 2018 (\$000)</b>	<b>Change from FY 2017 to FY 2018 (FTE)</b>
<b>FY 2017 ANNUALIZED CR</b>	<b>\$28,346</b>	<b>139</b>
<b>ADJUSTMENTS TO BASE:</b>		
FY 2018 Wage Grade (WG) Pay Increase (2.75%)	\$ 166	
FY 2018 General Schedule (GS) Proposed Pay Increase (1.9%)	98	
Non-Pay Inflation (1.0%)	48	
Washington Office Rent	45	
DOT Working Capital Fund	37	
Annualization of FY 2017 GS Pay Increase	31	
<b>SUBTOTAL, ADJUSTMENTS TO BASE</b>	<b>\$ 425</b>	<b>0</b>
<b>PROGRAM CHANGES:</b>		
Financial Management System FSSP O&M (DOI)	\$ 75	
Asset Renewal Program (ARP)	(500)	
<b>SUBTOTAL, PROGRAM CHANGES</b>	<b>\$ (425)</b>	<b>5</b>
<b>FY 2018 REQUEST</b>	<b>\$28,346</b>	<b>144</b>

## Detailed Justification for Agency Operations

### What Is the Request and What Funds Are Currently Spent on the Program?

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**FY 2018 Agency Operations Budget Request  
Operations and Maintenance – HMTF (69-8003)  
(\$000)**

<b>Program Activity</b>	<b>FY 2016 Actual</b>	<b>FY 2017 Annualized Cont. Res.</b>	<b>FY 2018 Request</b>	<b>Difference from FY 2017</b>
Agency Operations	\$18,250	\$18,346	\$18,846	\$500
<b>Total</b>	<b>\$18,250</b>	<b>\$18,346</b>	<b>\$18,846</b>	<b>\$500</b>
<b>FTE</b>	<b>128</b>	<b>139</b>	<b>144</b>	<b>5</b>

### What Is the Program and Why Is It Necessary?

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The SLSDC's Agency Operations program consists of all agency activities, except for the on-going ARP for capital infrastructure replacements and improvements. The 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 competitive deep-draft waterway, in cooperation with its Canadian counterpart, the St. Lawrence Seaway Management Corporation (SLSMC). 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. The SLSDC is responsible for operating and maintaining the U.S. portion of the St. Lawrence Seaway, including the two U.S. Seaway locks in Massena, New York.

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 would equate 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,<sup>3</sup> and provides approximately \$3.6 billion in annual transportation cost savings compared to the next least expensive mode of transportation.<sup>4</sup>

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<sup>3</sup> *The Economic Impact of the Great Lakes St. Lawrence Seaway System.*

<sup>4</sup> *Great Lakes Navigation System: Economic Strength to the Nation.*

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. Almost 25 percent of this cargo travels to and from overseas ports.

In addition, Great Lakes Seaway System ships remain a fuel-efficient and cost effective mode for moving commercial goods to and from foreign markets and the Great Lakes region. The SLSDC remains dedicated to promoting the economic benefits of the marine mode, attracting new cargoes to the Seaway, and leveraging technology to enhance the system's performance and safety.

The SLSDC's mission is to provide a safe, secure, reliable, and efficient U.S. portion of the St. Lawrence Seaway to its commercial users. In FY 2016, the system availability rate was 99.7 percent for the U.S. section of the Seaway, including the two U.S. locks. The annual navigation season is typically late March to late December each year.

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.

*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 trade and economic development throughout the Great Lakes region.

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 manage agency administrative expenses as a percentage of all operating costs at 23 percent or less. In FY 2016, the SLSDC administrative cost percentage was 23 percent. On an on-going basis, the SLSDC has implemented a number of activities to achieve the administrative cost ratio, 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 while still addressing customer concerns, 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 April 2016, 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 2016, the SLSDC received an unmodified opinion (clean audit) of its financial statements for FY 2016 with no material weaknesses or reportable conditions. The FY 2016 audit marked the 53<sup>rd</sup> 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.

The SLSDC seeks 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 2017 Base: The FY 2017 annualized CR level for the SLSDC's Agency Operations program is \$18.25 million.

Anticipated FY 2017 Accomplishments: In FY 2017, 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 and economic 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.
- 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, 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.



### **What Does This Funding Level Support?**

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For FY 2018, the President's Budget requests \$18.85 million and 144 full-time equivalents (FTEs) for the SLSDC's Agency Operations program. The FY 2018 request for this program is \$500,000 above the FY 2017 estimated level for baseline-related increases (\$425,000), one program increase (\$75,000), and no requested changes to the FTE level. The Agency Operations increases are offset by program reductions in the SLSDC's other program – Asset Renewal Program.

Baseline increases requested include:

- 2.75 percent annual pay raise for SLSDC wage grade employees (12 months) (\$166,000);
- Proposed 1.9 percent annual pay raise for SLSDC general schedule employees (9 months) (\$98,000);
- 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 (\$45,000);
- Estimated increase in DOT Working Capital Fund (WCF) expenses (\$37,000); and
- Estimated annualization of FY 2017 pay raise for general schedule employees (\$31,000).

The President's Budget also requests a program increase of \$75,000 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.

At the request level in FY 2018, 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 FY 2016 was 99.7 percent.

The requested level in FY 2018 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 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?**

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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, and commercial transportation safety.

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, \$14 billion in annual wages and salaries, and provide nearly \$4 billion in annual transportation cost savings compared to the next least expensive mode of transportation.<sup>5</sup> Each of these significant economic advantages would be jeopardized without sufficient funding for the SLSDC's Agency Operations program.

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<sup>5</sup> *Great Lakes Navigation System: Economic Strength to the Nation.*

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.<sup>6</sup>

These funding levels for the SLSDC will continue existing Agency Operations activities and the Corporation will look for new ways to enhance its efforts in the areas of safety, operations, and trade/economic development, maintaining the waterway’s historic near-perfect reliability rate.

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<sup>6</sup> *Safety Profile of the Great Lakes-St. Lawrence Seaway System*, Research and Traffic Group, March 2014.

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## Detailed Justification for Asset Renewal Program

### What Is the Request and What Funds Are Currently Spent on the Program?

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**FY 2018 Asset Renewal Program (ARP) Budget Request  
Operations and Maintenance – HMTF (69-8003)  
(\$000)**

<b>Program Activity</b>	<b>FY 2016 Actual</b>	<b>FY 2017 Annualized Cont. Res.</b>	<b>FY 2018 Request</b>	<b>Difference from FY 2017</b>
Asset Renewal Program	\$10,150	\$10,000	\$9,500	(\$500)
<b>Total</b>	<b>\$10,150</b>	<b>\$10,000</b>	<b>\$9,500</b>	<b>(\$500)</b>
<b>FTE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### What Is the Program and Why Is It Necessary?

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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.

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 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.

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.

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 \$120 million on 48 separate projects during the ARP's first seven years (FYs 2009-2016). 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 useful 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*.<sup>7</sup> 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 works 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 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 more than \$480 million over the past five years (2012-2016) on asset renewal projects. Many of the lock-related ARP improvements at the U.S. locks 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.

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<sup>7</sup> *Great Lakes St. Lawrence Seaway Study*, U.S. Army Corps of Engineers/U.S. Department of Transportation/Transport Canada, Fall 2007.

In January 2015, a report was released highlighting public and private investments in the Great Lakes St. Lawrence Seaway navigation system.<sup>8</sup> The report, which was based on a survey of more than 450 U.S. and Canadian public organizations and private companies, found that \$6.9 billion is being spent on asset renewal and infrastructure improvements in the Great Lakes St. Lawrence Seaway navigation system by both the public and private sectors. Between 2009-2013 more than \$4.7 billion 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 2017 Base: The FY 2017 annualized CR level for the SLSDC's ARP is \$10 million.

Anticipated FY 2017 Accomplishments: During FY 2017, 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 2017 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 Office of Budget and Economic Development also support this initiative. In FY 2017, the SLSDC expects to fund the construction-related work for the installation of the hands-free mooring system at the U.S. Snell Lock, scheduled for operation with the start of the 2019 navigation season.

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:

- Reduces the need for traditional linehandling operations with wire ropes, which decreases the risk of incidents/injuries.
- Allows commercial carriers to reduce crew sizes and shipboard equipment necessary to meet current transit requirements.
- Reduces the time to transit one of the Seaway locks by approximately seven minutes per lockage, which equates to 3-4 hours of potential time savings on a roundtrip transit.
- Allows commercial carriers to save on fuel costs.
- Increases the number of commercial ships capable of transiting the Seaway.
- Allows the U.S. and Canadian Seaway entities to utilize existing lock operations work crews on other priority projects, including routing maintenance.

### **What Does This Funding Level Support?**

The \$9.50 million included in the FY 2018 budget request to fund 12 SLSDC ARP projects will address various needs for the two U.S. Seaway locks, operational systems, and Corporation facilities and equipment.

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<sup>8</sup> *Infrastructure Investment of the Great Lakes St. Lawrence Seaway System.*

<b>FY 2018 SLSDC Asset Renewal Program (ARP) Projects</b>		
<b>ARP Project Number</b>	<b>Project Name</b>	<b>FY 2018 Request</b>
8	Floating Navigational Aids – Replace	\$ 100,000
9	Corporation Equipment – Replace Heavy and Light Equipment, Maintenance Vehicles, and Shop Equipment	500,000
10	Bock Locks – Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	50,000
17	Navigation Channels – Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments	5,000,000
22	Both Locks – Install Vessel Self Spotting Equipment	100,000
23	Both Locks – Install Hands-Free Mooring System	3,000,000
27	Corporation Facilities – Replace Windows and Doors and Repair Building Facades	75,000
33	Both Locks – Upgrade Drainage Infrastructure in Galleries and Recesses	50,000
43	Both Locks – Miter Gate Machinery – Upgrade/Replace	450,000
61	Both Locks – Replace Recess Covers on Lock Walls	25,000
66	Corporation Facilities – Upgrade/Replace CCTV Systems	50,000
69	Both Locks – Repair/Replace Corroded Piping and Malfunctioning Valves	100,000
<b>ARP Totals (12 projects):</b>		<b>\$9,500,000</b>

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) **Project No. 8: Floating Navigational Aids – Upgrade/Replace (Capital Project) (\$100,000)** – 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)*



- (2) **Project No. 9: Corporation Equipment – Replace Heavy and Light Equipment, Maintenance Vehicles, and Shop Equipment (Capital Project, Capital Equipment, and Non-Capital Maintenance Equipment) (\$500,000)** – 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, electric, and propane-fueled vehicles in order to reduce its fleet petroleum use and greenhouse gas emissions. The FY 2018 request is for purchasing a 50-ton, all-terrain crane to replace 30-year-old existing equipment. The SLSDC also plans to investigate the feasibility of procuring B20 biodiesel to further reduce fleet petroleum use. *(SLSDC obligated \$2.8 million over eight years from FY 2009-2016)*
- (3) **Project No. 10: Both Locks – Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities (Non-Capital Maintenance Project) (\$50,000)** – This project is for upgrading the infrastructure that supplies power to Eisenhower and Snell Locks and to the Corporation's Maintenance Facility. 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 \$429,000 over seven years in FYs 2009-2016)*
- (4) **Project No. 17: Navigation Channels – Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments (Non-Capital Maintenance Project) (\$5,000,000)** – This project is for dredging of the U.S. Seaway navigation channel to remove sediment and to maintain the design grade for the channel bottom. Maintenance dredging areas include the intermediate pool (between Eisenhower and Snell Locks), the international tangent section to the east of Snell Lock, and several other sections of U.S. waters west of Eisenhower Lock. FY 2018 funding will begin addressing high spots that still remain from earlier year maintenance dredging and begin work on other sections of the St. Lawrence River under SLSDC jurisdiction. *(SLSDC obligated \$8.1 million over six years in FYs 2009 and 2011-2015)*
- (5) **Project No. 22: Both Locks – Install Vessel Self Spotting Equipment (Capital Project) (\$100,000)** – 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 SLSDC personnel to spot vessels in a lock. *(SLSDC obligated \$422,000 over two years in FYs 2014-2015)*

- (6) **Project No. 23: Both Locks – Install Hands-Free Mooring System (Capital Project) (\$3,000,000)** – This project is for completing the installation of the hands-free mooring system at the U.S. Snell Lock. 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. *(SLSDC obligated \$13 million over three years from FY 2014-2016)*

- (7) **Project No. 27: Corporation Facilities – Replace Windows and Doors and Repair Building Facades (Capital Project) (\$75,000)** – 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)*
- (8) **Project No. 33: Both Locks – Upgrade Drainage Infrastructure in Galleries and Recesses (Capital Project) (\$50,000)** – 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)*
- (9) **Project No. 43: Both Locks – Miter Gate Machinery – Upgrade/Replace (Capital Project) (\$450,000)** – 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 six years in FYs 2011-2016)*

- (10) **Project No. 61: Both Locks – Replace Recess Covers on Lock Walls (Capital Project) (\$25,000)** – 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 \$14,000 over two years in FYs 2015-16)*
- (11) **Project No. 66: Corporation Facilities – Upgrade/Replace CCTV Systems (Capital Project) (\$50,000)** – 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)*
- (12) **Project No. 69: Both Locks – Repair/Replace Corroded Piping and Malfunctioning Valves (Capital Project) (\$100,000)** – 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)*

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

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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 2017 dollars. In addition, the availability of the Great Lakes Seaway System provides nearly \$4 billion in annual transportation cost savings compared to the next least expensive mode of transportation.<sup>9</sup>

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.

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<sup>9</sup> *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)*

<b>Identification code 69-8003-0-7-403</b>		<b>2016 ACTUAL</b>	<b>2017 ANNUALIZED CR</b>	<b>2018 REQUEST</b>
	<b>Obligations by Program Activity:</b>			
0001	Operations and maintenance	28,400	28,346	28,346
0900	Total new obligations (Object Class 25.3)	28,400	28,346	28,346
	<b>Budgetary Resources:</b>			
	Budget Authority:			
	Appropriations, discretionary:			
1101	Appropriation (special or trust fund)	28,400	28,346	28,346
1160	Appropriation, discretionary (total)	28,400	28,346	28,346
1930	Total budgetary resources available	28,400	28,346	28,346
	<b>Change in Obligated Balance:</b>			
	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	New obligations, unexpired accounts	28,400	28,346	28,346
3020	Outlays (gross) (-)	(28,400)	(28,346)	(28,346)
	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
	<b>Budget Authority and Outlays, Net:</b>			
	Discretionary:			
	Gross Budget Authority and Outlays:			
4000	Budget authority, gross	28,400	28,346	28,346
	Outlays, gross:			
4010	Outlays from new discretionary authority	28,400	28,346	28,346
	Additional Offsets against Gross Budget Authority only:			
4070	Budget authority, net (discretionary)	28,400	28,346	28,346
4080	Outlays, net (discretionary)	28,400	28,346	28,346
	Budget Authority and Outlays, Net (total):			
4180	Budget authority, net (total)	28,400	28,346	28,346
4190	Outlays, net (total)	28,400	28,346	28,346

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

<b><u>YEAR</u></b>	<b><u>REQUEST</u></b>	<b><u>ENACTED</u></b>
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	\$36,028,000
2018	\$28,346,000	

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		2016 ACTUAL	2017 ANNUALIZED CR	2018 REQUEST
<b>OBLIGATIONS BY PROGRAM ACTIVITY</b>				
<b>Reimbursable Programs:</b>				
0801	Operations and maintenance	17,476	18,996	19,496
0802	Replacements and improvements	11,442	10,000	9,500
0900	<b>Total new obligations</b>	28,918	28,996	28,996
<b>BUDGETARY RESOURCES</b>				
<b>Unobligated Balance:</b>				
Authority to borrow		3,200	3,200	3,200
Fund balance		11,266	11,946	11,946
1000	Unobligated balance brought forward, Oct 1	14,466	15,146	15,146
<b>Adjustments</b>				
1021	Unobligated Balance: Recoveries of prior year unpaid obligations	507	0	0
1050	Unobligated balance (total)	14,973	15,146	15,146
<b>Budget Authority:</b>				
<b>Spending Authority from Offsetting Collections:</b>				
1800	BA: Mandatory: Spending authority: Collected	29,091	28,996	28,996
1850	BA: Mandatory: Total	29,091	28,996	28,996
1900	Budget Authority Total (discretionary and mandatory)	29,091	28,996	28,996
1930	<b>Budget Authority: Total Budgetary Resources Available (discretionary and mandatory)</b>	44,064	44,142	44,142
<b>MEMORANDUM (NON-ADD) ENTRIES</b>				
Authority to borrow		3,200	3,200	3,200
Fund balance		11,946	11,946	11,946
1941	<b>Unobligated Balance: Memo: Unexpired unobligated balance, end of year</b>	15,146	15,146	15,146
<b>CHANGE IN OBLIGATED BALANCE</b>				
<b>Unpaid Obligations:</b>				
3000	Obligated Balance: SOY: Unpaid obligations, brought forward, Oct 1	21,431	19,820	9,820
3010	Obligated Balance: Obligations incurred, unexpired accounts	28,918	28,996	28,996
3020	Obligated Balance: Outlays (gross) (-)	(30,022)	(38,996)	(35,996)
3040	Obligated Balance: Recoveries of unpaid prior year obligations, unexpired accounts	(507)	0	0
3050	Obligated Balance: EOY: Unpaid obligations, end of year	19,820	9,820	2,820
<b>MEMORANDUM (NON-ADD) ENTRIES</b>				
3100	Obligated balance, start of year (+ or -)	21,431	19,820	9,820
3200	Obligated balance, end of year (+ or -)	19,820	9,820	2,820
<b>BUDGETARY AUTHORITY AND OUTLAYS, NET:</b>				
<b>Mandatory:</b>				
<b>Gross Budget Authority and Outlays:</b>				
4090	Mandatory: Budget authority, gross	29,091	28,996	28,996
<b>Mandatory: Outlays, gross</b>				
4100	Mandatory: Outlays from new authority	16,804	28,996	28,996
4101	Mandatory: Outlays from balances	13,218	10,000	7,000
4110	Mandatory: Outlays, gross (total)	30,022	38,996	35,996
<b>Offsets against Gross Budget Authority and Outlays:</b>				
<b>Offsets collections (collected) from:</b>				
4120	Mandatory: Offsets, BA and OL: Collections from Federal sources (-)	(28,449)	(28,346)	(28,346)
4123	Mandatory: Offsets, BA and OL: Collections from Non-Federal sources (-)	(642)	(650)	(650)
4130	Mandatory: Offsets against gross budget authority and outlays (total) (-)	(29,091)	(28,996)	(28,996)
<b>Additional Offsets against Gross Budget Authority only:</b>				
4170	<b>Mandatory: Outlays, net</b>	931	10,000	7,000
Budget Authority and Outlays, Net (total):				
4180	<b>Budget authority, net (discretionary and mandatory)</b>	0	0	0
4190	<b>Outlays, net (discretionary and mandatory)</b>	931	10,000	7,000

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

<b>Identification code 69-4089-0-3-403</b>		<b>2016 ACTUAL</b>	<b>2017 ANNUALIZED CR</b>	<b>2018 REQUEST</b>
	Personnel compensation:			
11.1	Full-time permanent	9,613	10,070	10,327
11.3	Other than full-time permanent	122	122	125
11.5	Other personnel compensation	782	782	802
11.9	Total personnel compensation	10,517	10,974	11,254
12.1	Civilian personnel benefits	3,831	3,944	3,944
	Personnel compensation and benefits	14,348	14,918	15,198
21.0	Travel and transportation of persons	238	238	238
22.0	Transportation of things	3	3	3
23.2	Rental payments to others	15	15	15
23.3	Communications, utilities, and miscellaneous	140	184	186
23.0	Total rent, communications, and utilities	155	199	201
24.0	Printing and reproduction	16	20	20
25.1	Advisory and assistance services	191	191	193
25.2	Other services from non-Federal sources	790	790	799
25.3	Other goods and services from Federal Sources	1,165	1,190	1,279
25.4	Operation and maintenance of facilities (includes ARP)	12	12	112
25.6	Medical care	22	22	22
25.7	Operation and maintenance of equipment	128	128	130
25.0	Total other contractual services	2,308	2,333	2,535
26.0	Supplies and materials	1,285	1,285	1,301
31.0	Equipment (includes ARP)	9,270	500	500
32.0	Land and structures (includes ARP)	1,295	9,500	9,000
	Total other-than-personnel	14,570	14,078	13,798
99.9	Total obligations	28,918	28,996	28,996

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

<b>Identification code 69-4089-0-3-403</b>	<b>2016 ACTUAL</b>	<b>2017 ANNUALIZED CR</b>	<b>2018 REQUEST</b>
Total compensable work years:			
5001 Full-time equivalent employment	128	139	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)*

<b>Identification code 69-4089-0-3-403</b>	<b>2015 ACTUAL</b>	<b>2016 ACTUAL</b>
<b>Assets:</b>		
Federal assets:		
1101 Fund balance with Treasury	22,490	21,271
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	63	49
1207 Advances and prepayments	0	0
Other Federal assets:		
1801 Cash and other monetary assets	10,524	10,913
1803 Property, plant and equipment, net	133,640	141,417
1901 Other assets	7,641	7,539
<b>1999 Total assets</b>	<b>174,358</b>	<b>181,189</b>
<b>Liabilities:</b>		
Federal liabilities:		
2101 Accounts payable	1,483	1,474
2105 Other	2,906	2,886
Non-Federal liabilities:		
2201 Accounts payable	2,825	2,184
2206 Pension and other actuarial liabilities	4,078	3,891
2207 Other	0	0
<b>2999 Total liabilities</b>	<b>11,292</b>	<b>10,435</b>
<b>Net Position:</b>		
3200 Invested capital	148,798	156,606
3300 Cumulative results of operations	14,268	14,148
<b>3999 Total net position</b>	<b>163,066</b>	<b>170,754</b>
<b>4999 Total liabilities and net position</b>	<b>174,358</b>	<b>181,189</b>

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

Identification code 69-4089-0-3-403	2016 ACTUAL	2017 ANNUALIZED CR	2018 REQUEST
<b>Operations and Maintenance:</b>			
1. Lock and Marine Operations	5,681	5,997	6,155
2. Maintenance and Engineering	5,513	6,440	6,609
3. General and Development	1,561	2,502	2,568
4. Administrative	4,721	4,057	4,164
<b>Total Operations and Maintenance</b>	<b>17,476</b>	<b>18,996</b>	<b>19,496</b>
<b>Replacements and Improvements:</b>			
1. Equipment	32	500	500
2. Capital Projects	11,410	9,500	9,000
<b>Total Replacements and Improvements</b>	<b>11,442</b>	<b>10,000</b>	<b>9,500</b>
<b>Total Obligations</b>	<b>28,918</b>	<b>28,996</b>	<b>28,996</b>

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	2016 ACTUAL	2017 ANNUALIZED CR	2018 REQUEST
<b>Field Offices:</b>			
Business travel	47	47	47
Travel associated with training, conferences, and workshops	24	24	24
Travel to and from Washington, D.C.	10	10	10
Travel to and from Massena, N.Y.	0	0	0
Foreign travel	0	0	0
Canadian travel	14	14	14
<b>Subtotal</b>	<b>95</b>	<b>95</b>	<b>95</b>
<b>DC Office:</b>			
Business travel	71	71	71
Travel associated with training, conferences, and workshops	6	6	6
Travel to and from Washington, D.C.	4	4	4
Travel to and from Massena, N.Y.	25	25	25
Foreign travel	10	10	10
Canadian travel	27	27	27
<b>Subtotal</b>	<b>143</b>	<b>143</b>	<b>143</b>
<b>Asset Renewal Program</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Grand Total</b>	<b>238</b>	<b>238</b>	<b>238</b>







# **U.S. St. Lawrence Seaway Asset Renewal Program Capital Investment Plan *FYs 2018-2022***



**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 promotes Great Lakes regional trade and 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 2018-2022**

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**Background**

Operated and maintained by the U.S. Saint Lawrence Seaway Development Corporation (SLSDC) and the Canadian St. Lawrence Seaway Management Corporation (SLSMC), the St. Lawrence Seaway is a unique binational transportation route, 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 nearly \$4 billion in annual transportation cost savings compared to the next least expensive mode of transportation.<sup>1</sup>

In addition, Great Lakes Seaway System ships remain a fuel-efficient and cost effective mode for moving commercial goods to and from foreign markets and the Great Lakes region. The SLSDC remains dedicated to promoting the economic benefits of the marine mode, attracting new cargoes to the Seaway, and leveraging technology to enhance the system's performance and safety.

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.<sup>2</sup>

To continue providing these economic benefits, 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 (50 years for the lock structures), must be renewed through reinvestment on both sides of the border.

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

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

## **Summary**

Starting in 2009, the SLSDC began its Asset Renewal Program (ARP) for its navigation infrastructure, 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 \$120 million on 48 separate projects during the ARP's first seven years (FYs 2009-2016). 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 2018-2022 period, the Seaway ARP/Capital Investment Plan (CIP) includes 57 separate ARP projects and equipment estimated at \$92.6 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. 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 based on information provided to the SLSDC by ARP contractors.

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 2018-2022 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 2017 dollars. The ARP program is vital to ensuring system availability and the flow of goods via the St. Lawrence Seaway.

The Canadian Seaway locks along the St. Lawrence River are identical in age and design to those owned by the 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 more than \$480 million over the past five years (2012-2016) on asset renewal projects. Many of the lock-related ARP improvements at the U.S. locks 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. The report, which was based on a survey of more than 450 U.S. and Canadian public organizations and private companies, found that nearly \$7 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.



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

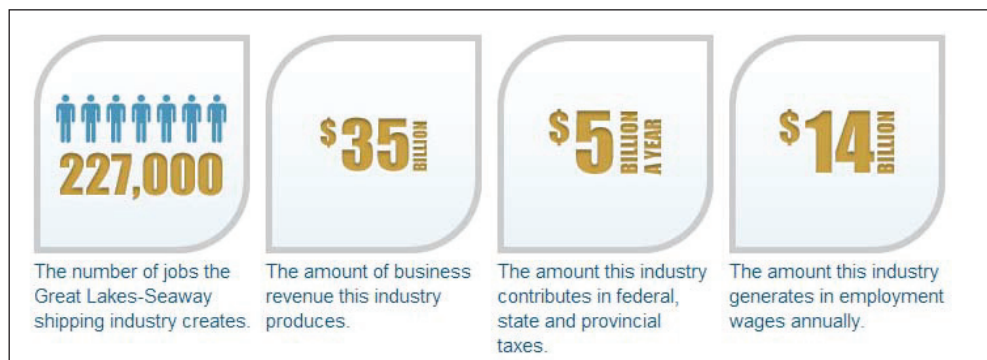
On October 18, 2011, the Great Lakes maritime industry released the results of a year-long study of the economic impacts of the entire Great Lakes-St. Lawrence Seaway navigation system. The study was commissioned by members of the marine shipping industry, in partnership with U.S. and Canadian government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

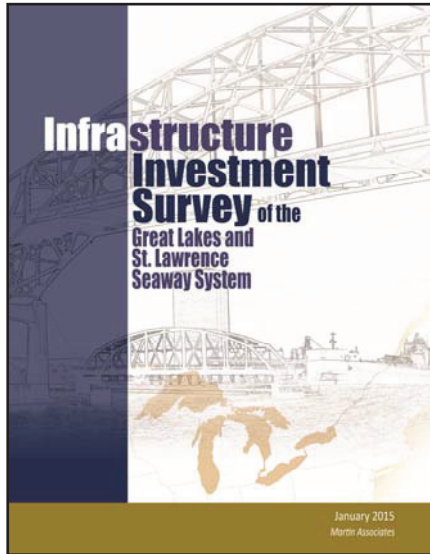
The study found that maritime commerce supported 227,000 U.S. and Canadian jobs, \$35 billion in transportation-related business revenue, \$14 billion in personal income, and \$5 billion in federal, state, provincial, and local taxes each year. North American farmers, steel producers, construction firms, 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 nearly \$4 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.

An update to this report is expected to be completed in late 2017/early 2018.

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





### ***Great Lakes Seaway System 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 ASSET RENEWAL PROGRAM (ARP)**  
**CAPITAL AND MAINTENANCE PROJECTS**  
**FYs 2018-2022**  
**\$92,555,000**

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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 condition 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) (Estimated at \$200,000 for FYs 2018-2022)** – This project is to replace wood fendering on the approach walls at both locks with rubber fenders to protect both the transiting vessels and the approach walls. 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. The 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. 8: Floating Navigational Aids – Upgrade/Replace (Capital Project) (Estimated at \$900,000 for FYs 2018-2022)** – 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. In addition, the Corporation has purchased and is testing all-season buoys to determine what types will work in the Seaway. *(SLSDC obligated \$341,000 over five years in FYs 2009-2010 and 2013-2015)*
- (3) **Project No. 9: Corporation Equipment – Replace Heavy and Light Equipment, Maintenance Vehicles and Shop Equipment (Capital Project, Capital Equipment, and Non-Capital Maintenance Equipment) (Estimated at \$1,850,000 for FYs 2018-2022)** – 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 cranes, dump trucks, snowplows, backhoes, graders, front-end

loaders 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 eight years in FYs 2009-2016)

- (4) **Project No. 10: Both Locks – Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities (Non-Capital Maintenance Project) (Estimated at \$450,000 for FYs 2018-2022)** – 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 almost 60 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 \$429,000 over seven years in FYs 2009-2014 and 2016)
- (5) **Project No. 11: Fixed Navigational Aids – Rehabilitate (Capital Project and Non-Capital Maintenance Project) (Estimated at \$400,000 for FYs 2018-2022)** – This project is for rehabilitating fixed navigational aids in the Seaway. Many of the structures are almost 60 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. Any repairs to the foundations will 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)
- (6) **Project No. 12: Corporation Equipment – Upgrade/Replace Floating Plant (Capital Project, Capital Equipment, and Non-Capital Maintenance Project) (Estimated at \$21,200,000 for FYs 2018-2022)** – 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.

The most significant project over the next five years is the replacement of the SLSDC's two tugboats. The first tugboat to replace, *Robinson Bay* (103 feet long), is almost 60 years old and the expenses incurred in maintaining it have increased significantly in recent years. The new tugboat 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 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 SLSDC's smaller tugboat *Performance* (52 feet long) is used for buoy positioning at the beginning of each navigation season, assisting the Robinson Bay during buoy tending operations at the beginning and end of each navigation season, moving buoys back onto station during the navigation season and for assisting the Robinson Bay with moving the gatelifter crane barge. The Performance has been experiencing serious corrosion issues with the hull and some of the appurtenances. The SLSDC has had to remove the Performance from the water for inspection, blast cleaning, repair and repainting of the hull on a recurring basis at a significant cost to ensure that it continues to be serviceable.

- (7) **Project No. 14: Corporation Facilities – Replace Paving and Drainage Infrastructure (Capital Project) (Estimated at \$4,500,000 for FYs 2018-2022)** – 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)*
- (8) **Project No. 15: Eisenhower Lock Highway Tunnel – Rehabilitate (Capital Project and Non-Capital Maintenance Project) (Estimated at \$1,500,000 for FYs 2018-2022)** – 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 seven years in FYs 2009-2012 and 2014-2016)*
- (9) **Project No. 16: Corporation Technologies - Upgrade GPS/AIS/TMS (Capital Project and Capital Equipment) (Estimated at \$400,000 for FYs 2018-2022)** – 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)*

- (10) **Project No. 17: Navigation Channels – Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments (Non-Capital Maintenance Project) (Estimated at \$12,000,000 for FYs 2018-2022)** – 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 2018 and 2020 funding will address high spots that still remain and silting that has occurred since the completion of earlier maintenance dredging projects 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)*
- (11) **Project No. 19: Corporation Facilities – Upgrade Electrical Distribution Equipment (Capital Project) (Estimated at \$1,300,000 for FYs 2018-2022)** – 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 almost 60 years old. *(SLSDC obligated \$1.1 million over six years in FYs 2010-2015)*
- (12) **Project No. 20: Both Locks – Upgrade Lock Status/Controls (Capital Project and Non-Capital Maintenance Project) (Estimated at \$500,000 for FYs 2018-2022)** – This project is for upgrading the lock/equipment status systems and the lock operating controls at both Eisenhower and Snell Locks. At present, all of the major 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 \$487,000 over eight years in FYs 2009-2016)*
- (13) **Project No. 21: Both Locks – Compressed Air Systems – Upgrade/Replace (Capital Project) (Estimated at \$500,000 for FYs 2018-2022)** – This project is for upgrading the compressed air systems and for replacing corroded piping at Eisenhower and Snell Locks which provide compressed air for various systems at the locks, for maintenance work and for air curtains and bubblers utilized to control ice in and around the locks during the opening and closing of the navigation seasons. The ability of the existing compressed air systems to provide the required volumes and/or pressures reliably is becoming a problem. *(SLSDC obligated \$816,000 over five years in FYs 2009-2012 and 2015)*
- (14) **Project No. 22: Both Locks – Install Vessel Self Spotting Equipment (Capital Project) (Estimated at \$200,000 for FYs 2018-2022)** – 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 \$422,000 over two years in FYs 2014-2015)*
- (15) **Project No. 23: Both Locks – Install Hands-Free Mooring System (Capital Project) (Estimated at \$3,250,000 for FYs 2018-2022)** – The funding for this project is to complete the installation of the hands-free mooring (HFM) system at the U.S. Snell Lock. The system was funded and will be installed at the U.S. Eisenhower Lock with previous

years' funding. The Eisenhower Lock HFM system is expected to become operational with the start of the 2018 navigation season.

The Seaway's HFM project is the first use of this technology for an inland waterway to safely transit commercial vessels through a lock system. The new technology allows commercial ships to transit safely and efficiently, while also enhancing workplace and operational safety conditions. In May 2015, the Seaway's HFM technology was recognized by the Organization for Economic Cooperation and Development (OECD) with the Promising Innovation in Transport Award.

This technology has been used previously to secure ships to dock walls, but this is the first time it is being applied to secure ships through a lock transit. The HFM system uses vacuum pads, each of which provides up to 20 tons of holding force, mounted on vertical rails inside the lock chamber wall to secure the ship during the lockage process as it is raised or lowered while keeping it at a fixed distance from the lock wall. The last step in the lockage operation consists of releasing the vacuum and retracting the pads so that the vessel is able to sail safely out of the lock.

The Canadian St. Lawrence Seaway Management Corporation (SLSMC) began testing the HFM technology in 2007 for potential use to replace the traditional practice of manually securing commercial vessels within the Seaway locks with mooring lines. Practical application began in earnest in late 2013. Testing by the SLSMC led to a fourth generation design, which includes three units with two vacuum pads on each unit, mounted on slots in the lock chamber wall. The SLSMC and Transport Canada are committed to installing the HFM system at the Canadian Seaway locks by the end of 2017.

Once fully implemented at all of the U.S. and Canadian Seaway locks, the HFM system will produce a number of significant benefits involving workplace safety, carrier operating costs, transit efficiencies, and system competitiveness. *(SLSDC obligated \$13 million over three years in FYs 2014-2016)*

- (16) **Project No. 24: Both Locks – Structural Repair – Grout Leaks in Galleries and Recesses (Non-Capital Maintenance Project) (Estimated at \$500,000 for FYs 2018-2022)** – 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 maintain these items. *(SLSDC obligated \$38,000 in FY 2009)*
- (17) **Project No. 25: Corporation Facilities – Upgrade/Replace Fire Alarm/Protection Systems (Capital Project) (Estimated at \$350,000 for FYs 2018-2022)** – This project is for replacing antiquated fire alarm and fire protection systems (i.e., pumps, piping, and hydrants) at Corporation facilities in Massena, New York. *(SLSDC obligated \$8,000 over two years in FYs 2009 and 2011)*



- (18) **Project No. 26: Corporation Facilities – Upgrade Storage for Lock Spare Parts and Equipment (Capital Project) (Estimated at \$750,000 for FYs 2018-2022)** – 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)*
- (19) **Project No. 27: Corporation Facilities – Replace Windows and Doors and Repair Building Facades (Capital Project) (Estimated at \$1,375,000 for FYs 2018-2022)** – This project is for replacing corroded/inefficient 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)*
- (20) **Project No. 28: Snell Lock – Walls, Sills and Culverts – Rehabilitate Concrete (Capital Project) (Estimated at \$4,500,000 for FYs 2018-2022)** – 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. This deteriorated/damaged concrete includes the mass concrete that forms the locks walls, the walls, floors and ceilings of the filling and emptying culverts and the gate sills. *(No prior ARP funds were obligated)*
- (21) **Project No. 29: Eisenhower Lock – Walls, Sills and Culverts – Rehabilitate Concrete (Capital Project) (Estimated at \$4,500,000 for FYs 2018-2022)** – 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 deteriorated/damaged concrete includes the mass concrete that forms the locks walls, the walls, floors and ceilings of the filling and emptying culverts and the gate sills. This project includes replacing concrete to depths ranging between approximately 8 inches and 24 inches. *(SLSDC obligated \$209,000 in FY 2010)*
- (22) **Project No. 30: Eisenhower Lock – Ice Flushing System – Upgrade (Capital Project) (Estimated at \$200,000 for FYs 2018-2022)** – 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)*
- (23) **Project No. 32: Snug Harbor – Rehabilitate Spare Gate Storage and Assembly Area (Capital Project) (Estimated at \$325,000 for FYs 2018-2022)** – 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 sheetpile bulkheads and maintenance of the spare miter gates and gate assembly towers. *(SLSDC obligated \$2.5 million over four years in FYs 2010-2011 and 2013-2014)*

- (24) **Project No. 33: Both Locks – Upgrade Drainage Infrastructure in Galleries and Recesses (Capital Project) (Estimated at \$250,000 for FYs 2018-2022)** – This project is to open existing drains, to drill new drains or to install pumps and piping 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)*
- (25) **Project No. 34: Both Locks – Improve Ice Control (Capital Project) (Estimated at \$400,000 for FYs 2018-2022)** – 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)*
- (26) **Project No. 35: Vessel Mooring Cells – Rehabilitate and Extend (Capital Project) (Estimated at \$300,000 for FYs 2018-2022)** – This project is for rehabilitating and extending the vessel mooring cells upstream of Eisenhower Lock and in the Intermediate Pool between the locks. These mooring cells are available for vessels with problems to tie to until the problems can be corrected and/or for vessels to tie to for inspections. The existing cells are almost 60 years old, are in a state of disrepair and are too short for current Seaway length vessels. *(No prior ARP funds were obligated)*
- (27) **Project No. 36: Eisenhower Lock – Diffusers – Rehabilitate/Replace (Capital Project) (Estimated at \$2,500,000 for FYs 2018-2022)** – 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)*
- (28) **Project No. 37: Eisenhower Lock – Construct Drydock for Vessel Maintenance (Capital Project) (Estimated at \$1,000,000 for FYs 2018-2022)** – 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)*
- (29) **Project No. 43: Both Locks – Miter Gate Machinery – Upgrade/Replace (Capital Project) (Estimated at \$850,000 for FYs 2018-2022)** – This project is for rehabilitating the operating machinery for the miter gates at both locks. This machinery is almost 60 years old and needs to be upgraded to insure its continued reliability. *(SLSDC obligated \$5.4 million over six years in FYs 2011-2016)*

- (30) **Project No. 44: Both Locks – Ship Arrestor Machinery – Upgrade/Replace (Capital Project) (Estimated at \$1,000,000 for FYs 2018-2022)** – This project is for replacing/upgrading 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 almost 60 years old and needs to be upgraded to insure continued reliability. *(No prior ARP funds were obligated)*
- (31) **Project No. 46: Both Locks – Guidewall Extensions – Rehabilitate (Capital Project) (Estimated at \$800,000 for FYs 2018-2022)** – This project is to repair damage to the guidewall extensions located at the upstream end of Eisenhower Lock and at the downstream end of Snell Lock. These structures were erected after original construction of the locks to lengthen the approach walls, which are used to assist vessels entering the locks. These structures are comprised of sheet pile cells with bridge spans and are not as stable as the original mass concrete guidewalls. They have been damaged by vessel impacts over the years and require rehabilitation to maintain their serviceability. *(No prior ARP funds were obligated)*
- (32) **Project No. 47: Eisenhower Lock – Vertical Lift Gate – Structural Rehabilitation (Capital Project) (Estimated at \$2,000,000 for FYs 2018-2022)** – 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 30 years. *(No prior ARP funds were obligated)*
- (33) **Project No. 48: Both Locks – Stiffleg Derricks – Upgrade (Capital Project) (Estimated at \$1,000,000 for FYs 2018-2022)** – This project is for upgrading 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 and are almost 60 years old. *(No prior ARP funds were obligated)*
- (34) **Project No. 50: Snell Lock – Diffusers – Rehabilitate/Replace (Capital Project) (Estimated at \$2,500,000 for FYs 2018-2022)** – 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. *(No prior ARP funds were obligated)*
- (35) **Project No. 51: Corporation Facilities – Upgrade Physical Security to Meet HSPD-12 Requirements (Capital Project and Non-Capital Maintenance Project) (Estimated at \$100,000 for FYs 2018-2022)** – This project is for continuing to improve the physical security at Corporation facilities to meet HSPD-12 requirements. *(SLSDC obligated \$425,000 over six years in FYs 2010-2015)*

- (36) **Project No. 52: Corporation Facilities – Eisenhower Lock Visitors’ Center – Replace/Upgrade (Capital Project) (Estimated at \$5,000,000 for FYs 2018-2022) –** The SLSDC is proposing to replace the Dwight D. Eisenhower Lock Visitors’ Center with a new facility. Each year, the almost 60-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, which became operational with 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. These estimates did not include furnishings, displays, or site improvements.

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)

- (37) **Project No. 57: Corporation Technologies – Upgrade Network Security (Capital Project and Non-Capital Maintenance Project) (Estimated at \$200,000 for FYs 2018-2022) –** This project enhances and improves the SLSDC’s IT network infrastructure and security in Massena, New York. 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)*

- (38) **Project No. 58: Corporation Facilities – Upgrades to Meet Sustainability and Energy Goals (Capital Project) (Estimated at \$400,000 for FYs 2018-2022)** – 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 \$147,000 over six years in FYs 2011-2016)*
- (39) **Project No. 59: Corporation Facilities – Communications Improvements (Capital Project) (Estimated at \$200,000 for FYs 2018-2022)** – 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 vessels. 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 the communications equipment used by Lock Operations' personnel and Vessel Traffic Controllers will improve the quality and reliability of these communications, which are critical to safe and efficient navigation in the Seaway. *(SLSDC obligated \$33,000 in FYs 2015 and 2016)*
- (40) **Project No. 60: Both Locks – Improve Access to and Rehabilitate Machinery in Crossovers and Recesses (Capital Project) (Estimated at \$400,000 for FYs 2018-2022)** – 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 FYs 2015 and 2016)*
- (41) **Project No. 61: Both Locks – Replace Recess Covers on Lock Walls (Capital Project) (Estimated at \$225,000 for FYs 2018-2022)** – 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. Many of these recess covers are original and will be almost 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/maintainable materials designed for greater loads. *(SLSDC obligated \$14,000 in FYs 2015 and 2016)*
- (42) **Project No. 62: Both Locks – Install/Upgrade Air Curtains (Capital Project) (Estimated at \$4,000,000 for FYs 2018-2022)** – 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)*

- (43) **Project No. 63: Both Locks – Install Electronic Pleasure Craft Toll Collection Facilities (Capital Project) (Estimated at \$100,000 for FYs 2018-2022)** – 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)*
- (44) **Project No. 64: Corporation Facilities – Upgrade Lock Structures Maintenance Building (Capital Project) (Estimated at \$150,000 for FYs 2018-2022)** – 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)*
- (45) **Project No. 66: Corporation Facilities – Upgrade/Replace CCTV Systems (Capital Project) (Estimated at \$150,000 for FYs 2018-2022)** – This project is for upgrading the Corporation's CCTV system and for providing 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 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)*
- (46) **Project No. 67: Both Locks – Improve Lighting (Capital Project) (Estimated at \$400,000 for FYs 2018-2022)** – This is an ongoing rehabilitation program to upgrade or replace inefficient lighting equipment with high-efficiency lighting equipment at Eisenhower and Snell Locks and at the Maintenance Facility. 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)*
- (47) **Project No. 68: Corporation Facilities – Repair/Replace Security Fencing (Capital Project) (Estimated at \$400,000 for FYs 2018-2022)** – This is an ongoing maintenance program to repair or replace security fencing and personnel and vehicle entry gates at Corporation facilities. These improvements are needed to rehabilitate deteriorated/damaged fencing and gates and to eliminate barrier gaps that are critical to maintaining perimeter and entry security. *(No prior ARP funds were obligated)*
- (48) **Project No. 69: Both Locks – Repair/Replace Corroded Piping and Malfunctioning Valves (Capital Project) (Estimated at \$500,000 for FYs 2018-2022)** – 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)*

- (49) **Project No. 71: Corporation Facilities – Facility and Underground Utilities Improvements (Capital Project and Non-Capital Maintenance Project) (Estimated at \$200,000 for FYs 2018-2022)** – This project is to repair and/or replace corroded/malfunctioning underground utilities including water, wastewater, storm drain, and air piping as well as electrical conduits and conductors. It also includes surveying Corporation facilities and underground utilities to locate 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)*
- (50) **Project No. 72: Corporation Facilities – Stormwater Upgrades (Capital Project) (Estimated at \$100,000 for FYs 2018-2022)** – 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)*
- (51) **Project No. 73: Eisenhower Lock – Install Stoplog Slots Upstream of the Highway Tunnel (Capital Project) (Estimated at \$3,000,000 for FYs 2018-2022)** – This project is for installing stoplog slots upstream of the highway tunnel that passes through the upstream concrete sill at Eisenhower Lock. This will allow the Corporation to install stoplogs and dewater the upstream sill area to inspect and repair the concrete around the highway tunnel. *(No prior ARP funds were obligated)*
- (52) **Project No. 74: Corporation Facilities – Building Rehabilitation (Capital Project and Non-Capital Maintenance Project) (Estimated at \$400,000 for FYs 2018-2022)** – 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)*
- (53) **Project No. 75: Maintenance Facility – Install Vehicle Corrosion Prevention Facility (Capital Project) (Estimated at \$250,000 for FYs 2018-2022)** – This project is to design and construct 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)*

- (54) **Project No. 76: Maintenance Facility – Upgrade Waste Storage and Lead Decontamination Rooms (Capital Project) (Estimated at \$50,000 for FYs 2018-2022)** – This project rehabilitates and upgrades the hazardous materials and 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 and waste storage and to provide upgraded decontamination facilities for Corporation employees. *(No prior ARP funds were obligated)*
- (55) **Project No. 77: Corporation Facilities – Upgrade Telephone System (Capital Project) (Estimated at \$30,000 for FYs 2018-2022)** – This project is to upgrade the Corporations' telephone system which serves all of the facilities in Massena, New York. These upgrades will include the head end equipment at the Administration Building, the media gateways at the locks and Maintenance Facility, and the individual handsets and conference phones. *(No prior ARP funds were obligated)*
- (56) **Project No. 78: Corporation Facilities – Upgrade Weather Stations (Capital Project) (Estimated at \$50,000 for FYs 2018-2022)** – This project is to upgrade the two weather stations that are located in the American Narrows in the upper part of the St. Lawrence River. The weather stations are equipped with visibility meters which provide critical information to the Vessel Traffic Controllers which enables them to determine when it is necessary to suspend navigation in that section of the river when visibility issues make it unsafe for ships to transit. *(No prior ARP funds were obligated)*
- (57) **Project No. 80: Corporation Facilities – Renewable Energy Project (Capital Project) (Estimated at \$2,000,000 for FYs 2018-2022)** – This project evaluates, designs, and constructs a renewable energy system to meet 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 to construct and commission an approved system in Massena, New York. *(No prior ARP funds were obligated)*



# SLSDC ARP Obligations (FYs 2009-2016)

ARP #	ARP Project Description	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	TOTAL
1	Both Locks - Replace Fendering on Approach Walls	\$241,600	\$8,091	\$0	\$0	\$0	\$188,725	\$140	\$0	\$438,556
2	Both Locks - Rehabilitate Downstream Miter Gates	\$0	\$0	\$3,539,935	\$8,384	\$3,009,854	\$203,666	\$0	\$0	\$6,761,839
3	Both Locks - Rehabilitate Mooring Buttons, Pins, and Concrete Along Guidewalls and Guardwalls	(Comb. w/ No. 14)	\$35,422	\$0	\$0	\$0	\$0	\$0	\$0	\$35,422
4	Both Locks - Culvert Valve Machinery - Upgrade to Hydraulic Operation	\$4,117,050	\$344,915	\$3,965,005	\$539,889	\$203,678	\$0	\$0	\$0	\$9,170,537
5	Both Locks - Rehabilitate Winter Maintenance Lock Covers	\$46,698	\$6,638	\$23,781	\$28,335	\$27,906	\$34,254	\$1,700	\$0	\$169,312
6	Seaway International Bridge - Perform Structural Rehabilitation and Corrosion Prevention	\$3,102,878	\$5,680,707	\$0	\$0	\$0	\$0	\$0	\$0	\$8,783,585
7	Both Locks - Culvert Valves - Replace With Single Skin Valves	\$0	\$326,898	\$65,591	\$302,468	\$162	\$1,370,028	\$102,091	\$22,641	\$2,189,879
8	Floating Navigational Aids - Replace	\$61,254	\$54,576	\$0	\$0	\$0	\$68,149	\$125,562	\$0	\$340,975
9	Corporation Equipment - Replace Heavy and Light Equipment, Maintenance Vehicles, and Shop Equipment	\$1,574,504	\$481,052	\$108,038	\$81,623	\$137,393	\$227,151	\$141,124	\$18,486	\$2,769,371
10	Both Locks - Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	\$19,594	\$231,269	\$93,613	\$28,003	\$17,099	\$38,220	\$0	\$1,442	\$429,340
11	Fixed Navigational Aids - Rehabilitate	\$0	\$10,998	\$16,217	\$21,048	\$29,210	\$14,199	\$22,456	\$0	\$114,128
12	Corporation Equipment - Upgrade/Replace Floating Plant	\$678,745	\$1,627,925	\$1,908,563	\$2,160,169	\$860,413	\$572,622	\$313,398	\$9,214,579	\$17,336,414
13	Corporation Facilities - Replace Roofs	\$143,949	\$0	\$3,348	\$89,024	\$17,820	\$0	\$283,426	\$27,340	\$564,907
14	Corporation Facilities - Replace Paving and Drainage Infrastructure	\$921,837	\$1,829,621	\$85,481	\$0	\$0	\$0	\$0	\$0	\$2,836,939
15	Eisenhower Lock - Highway Tunnel - Rehabilitate	\$26,636	\$271,804	\$99,459	\$1,523	\$0	\$1,143,224	\$33,583	\$10,747	\$1,586,976
16	Corporation Technologies - Upgrade GPS/AIS/TMS	\$100,997	\$76,451	(\$3,328)	\$10,000	\$6,350	\$0	\$0	\$0	\$190,470
17	Navigation Channels - Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments	\$4,279,556	\$0	\$3,662,267	\$99,714	\$100	\$100	\$19,542	\$0	\$8,061,279
18	Eisenhower Lock - Vertical Lift Gate - Replace Wire Ropes	\$0	\$487,750	\$109,490	\$268,549	\$0	\$0	\$0	\$0	\$865,789
19	Corporation Facilities - Upgrade Electrical Distribution Equipment	\$0	\$753,400	\$306,847	\$41,304	\$1,465	\$420	\$7,384	\$0	\$1,110,820
20	Both Locks - Upgrade Lock Status/Controls	\$8,558	\$139,805	\$89,507	\$37,549	\$76,722	\$32,570	\$37,698	\$64,749	\$487,158
21	Both Locks - Compressed Air Systems - Upgrade/Replace	\$19,878	\$787,549	\$3,381	\$986	\$0	\$0	\$4,154	\$0	\$815,948
22	Both Locks - Install Vessel Self Spotting Equipment	\$0	\$0	\$0	\$0	\$0	\$485,201	\$1,491	\$0	\$421,692
23	Both Locks - Install Hands-Free Mooring System	\$0	\$0	\$0	\$0	\$0	\$686,074	\$10,756,839	\$1,586,248	\$13,029,161
24	Both Locks - Structural Repair - Grout Leaks in Galleries and Recesses	\$37,561	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$37,561
25	Corporation Facilities - Upgrade/Replace Fire Alarm/Protection Systems	\$4,148	\$0	\$4,007	\$0	\$0	\$0	\$0	\$0	\$8,155
26	Corporation Facilities - Upgrade Storage for Lock Spare Parts	\$0	\$418,000	\$12,144	\$0	\$1,115,266	\$18,572	\$2,380	\$0	\$1,566,362
27	Corporation Facilities - Replace Windows and Doors and Repair Building Facades	\$0	\$33,776	\$5,537	\$8,070	\$167	\$0	\$1,811	\$0	\$49,361
29	Eisenhower Lock - Walls, Sills, and Culverts - Rehabilitate Concrete	\$0	\$209,395	\$0	\$0	\$0	\$0	\$0	\$0	\$209,395
31	Both Locks - Rehabilitate Upstream Miter Gates	\$2,201,585	\$2,478,896	\$347,662	\$14,961	(\$750)	\$42,445	\$0	\$0	\$5,042,354
32	Snug Harbor - Rehabilitate Spare Gate Storage and Assembly Area	\$0	\$12,734	\$346,600	\$0	\$0	\$0	\$0	\$0	\$2,501,713
33	Both Locks - Upgrade Drainage Infrastructure in Galleries and Recesses	\$0	\$0	\$0	\$0	\$6,938	\$301,737	\$152	\$0	\$308,827
34	Both Locks - Improve Ice Control	\$0	\$7,462	\$0	\$0	\$0	\$0	\$0	\$0	\$7,462
38	Both Locks - Upgrade/Replace Emergency Generators	\$0	\$0	\$0	\$0	\$1,764,008	\$344,313	\$32,774	\$0	\$2,141,095
39	Both Locks - Dewatering Pumps - Upgrade Outdated Equipment	\$0	\$0	\$0	\$189,763	\$25,721	\$23,568	\$17,936	\$0	\$256,988
41	Snell Lock - Install Ice Flushing System Technologies	\$0	\$0	\$272,000	\$11,477,293	\$1,577,272	\$90,045	\$128,144	\$498	\$13,545,252
42	Both Locks - Miter Gates - Structural Rehabilitation	\$0	\$0	\$0	\$210	\$2,898,819	\$3,740,613	\$0	\$0	\$6,639,642
43	Both Locks - Miter Gate Machinery - Upgrade/Replace	\$0	\$0	\$133,364	\$1,207	\$505	\$3,740,933	\$1,568,096	\$5,827	\$5,449,932
51	Corporation Facilities - Upgrade Physical Security to Meet HSPD-12 Requirements	\$0	\$24,183	\$21,097	\$352,347	\$20,143	\$5,985	\$977	\$0	\$424,732
52	Corporation Facilities - Eisenhower Lock Visitors' Center - Replace	\$0	\$0	\$13,042	\$0	\$298,391	\$794,473	\$5,631	\$0	\$1,111,537
54	Corporation Facilities - Administration Building - Replace Elevator	\$0	\$0	\$140,346	\$0	\$0	\$0	\$0	\$0	\$140,346
55	Corporation Facilities - Maintenance Building - Replace Fuel Tanks	\$0	\$0	\$189,350	\$2,350	\$0	\$0	\$0	\$0	\$191,700
56	Corporation Facilities - Duty Free Store Property - Upgrade Security	\$0	\$0	\$13,025	\$0	\$0	\$0	\$0	\$0	\$13,025
57	Corporation Technologies - Upgrade Network Security	\$0	\$0	\$158,536	\$16,998	\$8,687	\$0	\$0	\$0	\$184,221
58	Corporation Facilities - Upgrades to Meet Sustainability and Energy Goals	\$0	\$0	\$47,511	\$57,036	\$8,180	\$22,140	\$8,405	\$3,564	\$146,836
59	Corporation Facilities - Communications Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$29,000	\$3,996	\$32,996
60	Both Locks - Improve Access to and Rehabilitate Machinery in Crossovers and Recesses	\$0	\$0	\$0	\$0	\$0	\$0	\$716,052	\$396	\$716,448
61	Both Locks - Replace Recess Covers on Lock Walls	\$0	\$0	\$0	\$0	\$0	\$0	\$2,200	\$11,532	\$13,732
65	Both Locks - Install Lock Wall Guardrails	\$0	\$0	\$0	\$0	\$0	\$0	\$548,679	\$14,425	\$563,104
--	Miscellaneous Expenses	\$0	\$443	\$1,700	\$0	\$0	\$0	\$0	\$0	\$2,143
	Asset Renewal Program Total	\$17,587,028	\$16,339,760	\$15,783,116	\$15,838,803	\$14,242,887	\$14,189,527	\$14,912,825	\$10,921,470	\$119,815,416

## 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, \$970,000, \$620,000, and 478,000 in personnel compensation for staff time associated with ARP work in FYs 2009-2016, 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 2018 Request / FY 2019-2022 Estimates

PROJECT NO.	PROJECT TITLE	FIVE-YEAR TOTALS
1	Both Locks -- Replace Fending on Approach Walls	\$200,000
8	Floating Navigational Aids - Replace	\$900,000
9	Corporation Equipment - Replace Heavy and Light Equipment, Maintenance Vehicles and Shop Equipment	\$1,850,000
10	Both Locks - Upgrade Power Supply Infrastructure from Moses-Saunders Dam to Both Locks and Adjacent Facilities	\$450,000
11	Fixed Navigational Aids - Rehabilitate	\$400,000
12	Corporation Equipment - Floating Plant/Tugs - Replace	\$21,200,000
14	Corporation Facilities - Replace Paving and Drainage Infrastructure	\$4,500,000
15	Eisenhower Lock - Highway Tunnel - Rehabilitate	\$1,500,000
16	Corporation Technologies - Upgrade GPS/AIS/TMS	\$400,000
17	Navigation Channels - Dredge U.S. Sectors to Maintain Design Grade and Dispose of Sediments	\$12,000,000
19	Corporation Facilities - Upgrade Electrical Distribution Equipment	\$1,300,000
20	Both Locks - Upgrade Lock Status/Controls	\$500,000
21	Both Locks - Compressed Air Systems - Upgrade/Replace	\$500,000
22	Both Locks - Install Vessel Self Spotting Equipment	\$200,000
23	Both Locks - Install Hands-Free Mooring System	\$3,250,000
24	Both Locks - Structural Repair - Grout Leaks in Galleries and Recesses	\$500,000

## SLSDC Asset Renewal Program (ARP)

### FY 2018 Request / FY 2019-2022 Estimates

PROJECT NO.	PROJECT TITLE	FIVE-YEAR TOTALS
25	Corporation Facilities - Upgrade/Replace Fire Alarm/Protection Systems	\$350,000
26	Corporation Facilities - Upgrade Storage for Lock Spare Parts and Equipment	\$750,000
27	Corporation Facilities - Replace Windows and Doors and Repair Building Facades	\$1,375,000
28	Snell Lock - Walls, Sills and Culverts - Rehabilitate Concrete	\$4,500,000
29	Eisenhower Lock - Walls, Sills and Culverts - Rehabilitate Concrete	\$4,500,000
30	Eisenhower Lock - Ice Flushing System - Upgrade	\$200,000
32	Snug Harbor - Rehabilitate Spare Gate Storage and Assembly Area	\$325,000
33	Both Locks - Upgrade Drainage Infrastructure in Galleries and Recesses	\$250,000
34	Both Locks - Improve Ice Control	\$400,000
35	Vessel Mooring Cells - Rehabilitate and Extend	\$300,000
36	Eisenhower Lock - Diffusers - Replace	\$2,500,000
37	Eisenhower Lock - Construct Drydock for Vessel Maintenance	\$1,000,000
43	Both Locks - Miter Gate Machinery - Upgrade/Replace	\$850,000
44	Both Locks - Ship Arrestor Machinery - Upgrade/Replace	\$1,000,000
46	Both Locks - Guidewall Extensions - Rehabilitate	\$800,000
47	Eisenhower Lock - Vertical Lift Gate - Structural Rehabilitation	\$2,000,000

## SLSDC Asset Renewal Program (ARP)

### FY 2018 Request / FY 2019-2022 Estimates

PROJECT NO.	PROJECT TITLE	FIVE-YEAR TOTALS
48	Both Locks - Stiffleg Derricks - Upgrade	\$1,000,000
50	Snell Lock - Diffusers - Replace	\$2,500,000
51	Corporation Facilities - Upgrade Physical Security to Meet HSPD-12 Requirements	\$100,000
52	Corporation Facilities - Eisenhower Lock Visitors' Center - Replace	\$5,000,000
57	Corporation Technologies - Upgrade Network Security	\$200,000
58	Corporation Facilities - Upgrades to Meet Sustainability and Energy Goals	\$400,000
59	Corporation Facilities - Communications Improvements	\$200,000
60	Both Locks - Improve Access to and Rehabilitate Machinery in Crossovers and Recesses	\$400,000
61	Both Locks - Replace Recess Covers on Lock Walls	\$225,000
62	Both Locks - Install/Upgrade Air Curtains	\$4,000,000
63	Both Locks - Install Electronic Pleasure Craft Toll Collection Facilities	\$100,000
64	Corporation Facilities - Upgrade Lock Structures Maintenance Building	\$150,000
66	Corporation Facilities - Upgrade/Replace CCTV Systems	\$150,000
67	Both Locks - Improve Lighting	\$400,000
68	Corporation Facilities - Repair/Replace Security Fencing	\$400,000
69	Both Locks - Repair/Replace Corroded Piping and Malfunctioning Valves	\$500,000

## SLSDC Asset Renewal Program (ARP)

### FY 2018 Request / FY 2019-2022 Estimates

PROJECT NO.	PROJECT TITLE	FIVE-YEAR TOTALS
71	Corporation Facilities - Facility and Underground Utilities Improvements	\$200,000
72	Corporation Facilities - Stormwater Upgrades	\$100,000
73	Eisenhower Lock - Install Stoplog Slots Upstream of the Highway Tunnel	\$3,000,000
74	Corporation Facilities - Building Rehabilitation	\$400,000
75	Maintenance Facility - Install Vehicle Corrosion Prevention Facility	\$250,000
76	Maintenance Facility - Upgrade Waste Storage and Lead Decontamination Rooms	\$50,000
77	Corporation Facilities - Upgrade Telephone System	\$30,000
78	Corporation Facilities - Upgrade Weather Stations	\$50,000
80	Corporation Facilities - Renewable Energy Project	\$2,000,000
TOTAL		\$92,555,000

