

# SOO LOCKS ST. MARYS RIVER SAULT STE. MARIE, MICHIGAN

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## POST AUTHORIZATION CHANGE REPORT

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June 2018

U.S. Army Corps  
Of Engineers®  
Detroit District

**SOO LOCKS  
ST. MARYS RIVER  
SAULT STE. MARIE, MICHIGAN**

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**EXECUTIVE SUMMARY**

The U.S. Army Corps of Engineers (USACE) received authorization to design and construct a new lock at the Soo Locks Complex in Sault Sainte Marie, Michigan, in the Water Resources Development Act (WRDA) of 1986 at a total project cost of \$227.4M (Oct 1986 price level). The existing Poe Lock, which has been in operation since 1969, is vital to the Great Lakes Navigation System because it is the only lock capable of passing the largest cargo vessels and handles a majority of the tonnage moved through the system annually. The benefits associated with construction of an additional Poe-sized lock will greatly reduce the risk of significant national economic impacts associated with a future event that could potentially disrupt service or cause a prolonged closure of the Poe Lock. Subsequently, WRDA 2007 repealed prior cost-sharing requirements and authorized construction at full Federal expense at a total project cost of \$341.7M. To date, a total of \$32,153,151 has been spent on construction efforts.

In 2018, the Detroit District completed a certified cost estimate for the project, totaling \$922.4M (Oct 2018 price level). The cost estimate is at an 80% confidence level and is based on the receipt of efficient funding and use of the continuing contracts clause. The District also completed an economic validation study concurrent with this PACR, which identifies an increase of annual net benefits for the project compared to prior reevaluation reports. The majority of increased benefits are attributed to the inclusion of engineering reliability data and the high cost of economic impacts associated with the unmet demand of iron ore (shipped in the form of taconite pellets) if the Poe Lock were to experience a prolonged closure, and in changes in the federal discount rate. The report concludes that the new lock construction would result in an average annual benefit of \$77.4M at an average annual cost of \$32.8M, producing an average annual net benefit of \$44.7M and a favorable benefit-to-cost ratio (BCR) of 2.42 at the current discount rate (2.75%) or 2.32 at 7% discount rate.

This Post Authorization Change Report (PACR) provides documentation supporting the request to increase the authorized project cost from \$341.7M (\$415.8M at Oct 2018 price level) to \$922.4M (Oct 2018 price level). This increase exceeds the maximum project cost limit of \$532.9M (Oct 2018 price level) pursuant to Section 902 of WRDA 1986, as amended. Therefore, a new authorization in the amount of \$922,432,000 is recommended to complete construction of the project. The estimated balance to complete the project totals \$890.3M (Oct 2018 price level). Remaining project costs have increased a total of \$474M primarily due to the following three factors: (1) Direct cost and design changes totaling \$193M; (2) Refined contractor markups totaling \$111M; and (3) Increased contingency from 20% to 37% totaling \$170M. It is important to note that the cost in WRDA 2007 was taken directly from a previous 2004 limited reevaluation report and not escalated to FY 2008 price levels. This missing four years of cost escalation accounts for about \$108M (23%) of the total \$474M cost increase (Oct 2018 price level).