

FAC 8715 STORM WATER PONDS

FY22 SUC:	\$3,272.88 MG
Source:	Inflated from previous FY using ENR labor and material cost indices to measure actual inflation
Original Source:	New model for FY16; Based on data from USACE-ERDC, EPA, and NAVFAC EV.

Report

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Subject

Reevaluation of Sustainment Unit Cost for FAC 8715, Storm Water Ponds

Background

In the spring of 2015, the Navy lead for the Facilities Sustainment Model, Commander Jay Bieszke of OPNAV N464 and the Marine lead for FSM, Mr. Roger Welborn, recommended a reevaluation of the Sustainment Unit Cost for FAC 8715. From the beginning of FSM, this type of asset was modeled as not requiring maintenance, and therefore the SUC was determined to be \$0.00. Informed by their Environmental office at NAVFAC, the Navy believed there are maintenance activities being conducted at these facilities, and that the model should be reevaluated, and recalculated.

Findings

The USACE research center for hydrology, ERDC's Coastal and Hydraulics Laboratory (Mr. James Leech, and Mr. Shaun Stanton) report that there are maintenance activities for storm water ponds, and that USACE distributes program funds to installations to maintain their storm water ponds. The Environmental Protection Agency has Best Management Practices (BMP) for inspection and maintenance of storm water ponds. Required maintenance tasks for storm water ponds will be the product of analyzing these EPA BMPs, storm water pond design recommendations from EPA's Stormwater Management Resource Center, USACE/ERDC/CHL information, and maintenance tasks provided by NAVFAC's Environmental Directorate.

Expected Service Life

As the EPA Best Management Practice lists removal of accumulated sediment from the main cell of the SWP on a 20 year interval, 20 years will be the expected service life of this facility type. Restoring the main catch basin of a storm water pond to its original depth meets the definition of restoration; and therefor is not a sustainment task.

Inputs

Analyzing service and independent sources, the following tasks are assessed as required for the typical facility over the life of a storm water pond:

- Maintenance Inspection, Debris Removal, and Mechanical Component Testing
- Repair Embankment and side slopes
- Maintenance Mowing
- Removing accumulated sediment from forebays
- Remove and replace control valve

Summary

With labor, material, and equipment costs for these activities, the SUC is \$2,577.45

FAC 8715 SUC FY16v18 - Storm Water Ponds													
2014 RPAD: 672 Assets													
UM: MG													
Average Size:	0.891												
ESL	20												
Maintenance Type	Maintenance Activity	Frequency	Duration (Hours) or total Qty (MFS)	Crew	Labor Rate (+ Fringe and Overhead)	Equipment	Equipment rate	Material	Material Quantity	Material Cost / Unit	Cost / Occurance	Occurrences in ESL	Cost Over Lifetime
Preventative Maintenance	Maintenance Inspection, Debris Removal, and Mechanical Component Testing	0.5	1.75	1 x WG9(5) 1 x WG7(5)	\$ 66.64	1 x Pickup Truck	\$ 13.65	0	0	0	\$ 140.51	40	\$ 5,620.33
Maintenance / Repair	Repair Embankment and side slopes	1	2.5	1 x WG9(5) 2 x WG7(5)	\$ 96.61	1 x Truck, Dump 1 x Flatbed, 2 Axil, 25T 1 x Backhoe/loader	\$ 54.75	Engineered Soil	8	\$ 24.50	\$ 574.40	20	\$ 11,488.05
Maintenance / Repair	Mowing	0.5	9.928			Tractor w/brushhog	\$ 47.50	0	0	0	\$ 471.58	40	\$ 18,863.20
Maintenance / Repair	Removing accumulated sediment from forebays	5	4.5	1 x WG9(5) 2 x WG7(5)	\$ 96.61	1 x Truck, Dump 1 x Flatbed, 2 Axil, 25T 1 x Backhoe/loader	\$ 54.75	0	0	0	\$ 681.12	4	\$ 2,724.50
Maintenance / Repair	Remove and replace control valve	10	2.5	1 x WG9(5) 1 x WG7(5)	\$ 66.64	1 x Pickup Truck	\$ 13.65	Valve, Gate	1	\$3,416.30	\$ 3,617.03	2	\$ 7,234.05
										Sum of Costs over Lifetime			\$ 45,930.13
										Cost per Year			\$ 2,296.51
										Cost per UM			\$ 2,577.45
References													
Equipment Costs:	RS Means Facilities Construction Cost Data, 30th Ed												
Labor Costs	2015 Salary Tables from OPM.gov with Circular No. A-76 Revised												
Material Costs	RS Meams "Costworks" with Facility Maintenance and Repair Costbook, 2015Q3												

FAC 8715 SUC FY1v19 - Storm Water Ponds
2014 RPAD: 792 Assets
UM: MG
Average Size: 0.723
ESL 20

Maintenance Type	Maintenance Activity	Frequency	Duration (Hours) or total Qty (MFS)	Crew	Labor Rate (+ Fringe and Overhead)	Equipment	Equipment rate	Material	Material Quantity	Material Cost / Unit	Cost / Occurance	Occurrences in ESL	Cost Over Lifetime
Preventative Maintenance	Maintenance Inspection, Debris Removal, and Mechanical Component Testing	0.5	1.75	1 x WG9(5) 1 x WG7(5)	\$ 67.31	1 x Pickup Truck	\$ 14.00	0	0	0	\$ 142.29	40	\$ 5,691.53
Maintenance / Repair	Repair Embankment and side slopes	1	2.5	1 x WG9(5) 2 x WG7(5)	\$ 97.58	1 x Truck, Dump 1 x Flatbed, 2 Axil, 25T 1 x Backhoe/loader	\$ 56.16	Engineered Soil	8	\$ 24.50	\$ 580.34	20	\$ 11,606.71
Maintenance / Repair	Mowing	0.5	4.928			Tracktor w/brushhog	\$ 48.72	0	0	0	\$ 240.10	40	\$ 9,603.83
Maintenance / Repair	Removing accumulated sediment from forebays	5	4.5	1 x WG9(5) 2 x WG7(5)	\$ 97.58	1 x Truck, Dump 1 x Flatbed, 2 Axil, 25T 1 x Backhoe/loader	\$ 56.16	0	0	0	\$ 691.80	4	\$ 2,767.22
Maintenance / Repair	Remove and replace control valve	10	2.5	1 x WG9(5) 1 x WG7(5)	\$ 67.31	1 x Pickup Truck	\$ 14.00	Valve, Gate	1	\$ 3,774.30	\$ 3,977.57	2	\$ 7,955.14
Maintenance / Repair	Removing accumulated sediment from main cell	20	8.5	1 x WG9(5) 2 x WG7(5)	\$ 97.58	1 x Truck, Dump 1 x Flatbed, 2 Axil, 25T 1 x Backhoe/loader	\$ 56.16	0	0	0	\$ 1,306.74	1	\$ 1,306.74

Sum of Costs over Lifetime \$ 38,931.18
Cost per Year \$ 1,946.56
Cost per UM \$ 2,692.34

References
Equipment Costs: RS Means Facilities Construction Cost Data, 30th Ed
Labor Costs 2016 Salary Tables from OPM.gov with Circular No. A-76 Revised
Material Costs RS Means "Costworks" with Facility Maintenance and Repair Costbook, 2016Q3