Environmental Protection

Water Resource Protection

7-Yard Dump Body Replacement

This 2014 capital improvement request is for the purchase of a replacement dump body to be installed on the department's 2006 Freightliner dump truck. The equipment is used to transport construction materials such as, hot top, gravel, sand, and over sized stone to and from construction sites throughout the City. The 2006 chassis is an excellent condition, with very low hours and mileage. The body however is showing signs of deterioration with rust, and structural deformity do to normal wear and tear. Staff feels it is unnecessary to replace both items. The replacement of the body only will extend the useful life of the chassis and will ensure our construction tasks will be completed in a safe, timely, and cost effective manner. The project cost of $25,000 was obtained from a local equipment sales company.

Project Cost:	$25,000
Funding Source:	Sewer User Fund Equipment Reserve
Source of Cost Estimate:	Messer Truck Co., Inc.
Projected Useful Life:	8 - 10 years

MESSER TRUCK EQUIPMENT
170 WARREN AVE.
WESTBROOK, ME 04092
(207) 854-9751
Fax (207) 854-8042
www.messertruckequipment.com

MESSER Truck Equipment

Quote

Date	Quote #
9/11/2012	5681

Name / Address
SO PORTLAND WATER RESOURCES P O BOX 9422 SO PORTLAND, ME 04116

Attention	Terms	Sales Representative	Acct. Rep	P.O. No.
DAVE	Net 30	BOB TARDIFF	225	

Description	Qty	U/M	Total
Galion Godwin 6.4 to 8.6 yard Dump Body (BUDGETARY PRICES) Model 400U Price includes: Installation on used cab chassis with proper CA and automatic transmission with PTO provision 10' Length x 84" wide with 30" side height, 40" end height U860D DA hoist with G105-1 pump and Hot-shift PTO Horizontal side braces between vertical braces / front post braces 6" longitudinals with reinforcement and 4" I-Beam crossmembers on 12" centers 1/4" AR450 heavy duty steel floor 1/4" Hi Ten. tailgate with (6) panels and (3) coal doors Water tight tailgate with w/ rubber seals and (2) turn-buckles 10" 8 Gauge steel bolt on apron 1/2 x 84" 10 Gauge steel cab shield Full depth rear post and rear bolster Donovan automatic loadcover with aluminum arms , asphalt tarp and wind deflector Painted single stage blue paint to best match cab (color match not guaranteed) powder coat primer under finish paint Custom built 1/8" aluminum diamond plate sideboards tapered from top of cab protector to top of rear side pockets Mud flaps , backup alarm and Federal 108 body lights	1		25,000.00

We propose to furnish material and labor, in accordance with the above specifications. All material is guaranteed to be as specified. All work is to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the quotation. All agreements contingent upon strikes, accidents, or delays beyond our control. Owner to carry fire, tornado, and other necessary insurance. Our workers are fully covered by worker's compensation insurance. Any applicable Federal Excise Tax is not included in the above quotation. Quote valid for 30 days from date of issue.

Sales Tax (5.0%)	$0.00
Total	$25,000.00

Acceptance of Proposal - Sign and Return _____

Environmental Protection

Water Resource Protection

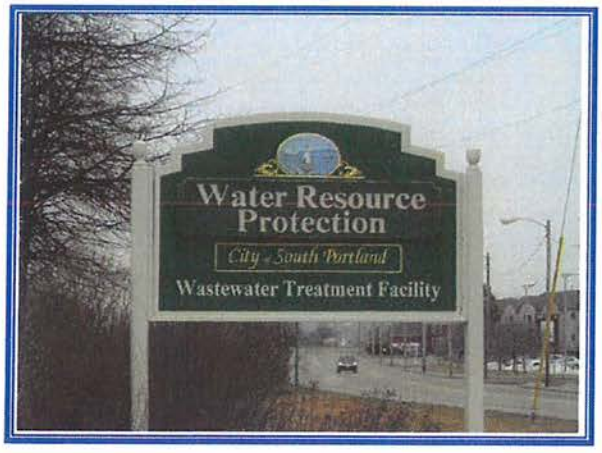
CSO Elm Street Phase I - I/I Removal

This 2014 capital improvement item is for the first phase funding of the partial separation and I/I removal in the Elm Street area streets. This first phase is going to be tied to the separation work for Thornton Heights which construction is to be completed in 2014. This work is being completed as part of the City's CSO Facilities Plan and will cover a number of streets (North Kelsey, Chestnut, Elm, Pearl, Forest, and Atlantic) in the area which contributes to a drainage area that significantly impacts the Elm Street CSO #024. This CSO is one of the most active CSO's in the City. All the flow from the west end of the City (the mall area and Western Ave, Thornton Heights, Perry Village and Pleasantdale) converges into a single pipe at Elm Street on its way to the treatment plant. The hydraulics in this area are too much for the system to contain the combined sewer/stormwater flows during wet weather events and spills over into CSO #024 located off Turners Island. Removing the stormwater from the area would reduce the overflows occurring at the CSO.

Project Cost:	$300,000
Funding Source:	TIF Funds
Source of Cost Estimate:	Wright-Pierce Engineers
Projected Useful Life:	65 years

COMBINED SEWER OVERFLOW FACILITIES PLAN UPDATE for the CITY OF SOUTH PORTLAND, MAINE

September 2008
(Revised October 2011)



WRIGHT-PIERCE
Engineering a Better Environment

9.5.4 Elm Street CSO #024

The Elm Street CSO #024 serves as a relief point for District 1A in addition to all flows from the entire collection system west of the Evans and Broadway intersection. Overflows are dictated by the capacity of the Pearl Street Pump Station: when flows are in excess of the capacity of the Pearl Street Pump Station (12,000 gpm) and the storage capacity of the collection system is reached, CSO #024 activates and discharges through an outfall pipe to the Fore River. As shown on Figure 4-11 in Section 4, the annual number of CSO events at Elm Street has ranged from 0 to 5 per year between January 2002 to June 2008 with a total of 22 events and a total volume of approximately 330,000 gallons. A new flow meter (which measures both depth of flow and velocity to calculate CSO flow rate) was installed at CSO #024 in March 2008.

The following table is a screening level evaluation of alternatives for the Elm Street CSO.

TABLE 9-10
ELM STREET CSO #024 ABATEMENT ALTERNATIVES

Alternative	Design Storm	Resulting Volume (gal)	Resulting Peak Flow (gpm)	Estimated Cost
Alternative 0: No Action Alternative	1-Year, 24-Hour	120,000	2,000	$0
	2-Year, 24-Hour	230,000	3,900	
	5-Year, 24-Hour	500,000	6,600	
	10-Year, 24-Hour	660,000	7,700	
Alternative 1: Infiltration/Inflow Removal (Remove catch basins within Districts 1A1A, 1A1B and 9C2).	1-Year, 24-Hour	80,000	1,500	$300,000
	2-Year, 24-Hour	180,000	2,700	
	5-Year, 24-Hour	400,000	5,000	
	10-Year, 24-Hour	540,000	6,300	
Alternative 3: In-Line Storage (Box culvert constructed between CSO #024 Diversion structure and the Mechanic Street Pump Station)				
120,000 gallons	1-Year, 24-Hour	0	0	$300,000
230,000 gallons	2-Year, 24-Hour	0	0	+$250,000 ($0.55M total)
500,000 gallons	5-Year, 24-Hour	0	0	+$500,000 ($1.0M total)
660,000 gallons	10-Year, 24-Hour	0	0	+$300,000 ($1.3M total)
Alternative 4: Off-Line Storage of CSO Flows (at Mechanic Street Pump Station)				
150,000 gallon storage tank	1-Year, 24-Hour	--	--	Not feasible - lack of space [2]
250,000 gallon storage tank	2-Year, 24-Hour	--	--	Not feasible - lack of space [2]
550,000 gallon storage tank	5-Year, 24-Hour	--	--	Not feasible - lack of space [2]
700,000 gallon storage tank	10-Year, 24-Hour	--	--	Not feasible - lack of space [2]
Alternative 5: Satellite Treatment of CSO Flows (Swirl Concentrator)				
2,000 gpm (2.88 mgd)	1-Year, 24-Hour	0	0	$1,500,000
3,900 gpm (5.12 mgd)	2-Year, 24-Hour	--	--	Not feasible - lack of space [2]
6,600 gpm (9.50 mgd)	5-Year, 24-Hour	--	--	Not feasible - lack of space [2]
7,700 gpm (11.09 mgd)	10-Year, 24-Hour	--	--	Not feasible - lack of space [2]
Alternative 6: Centralized Treatment (CSO pump station to direct flows to the WWTF for secondary treatment or to CSO-related bypass)				
2,000 gpm (2.88 mgd)	1-Year, 24-Hour	0	0	$2,500,000
3,900 gpm (5.12 mgd)	2-Year, 24-Hour	0	0	+$500,000 ($3.0M total)
6,600 gpm (9.50 mgd)	5-Year, 24-Hour	0	0	+$1,000,000 ($4.0M total)
7,700 gpm (11.09 mgd)	10-Year, 24-Hour	0	0	+$500,000 ($4.5M total)
Alternative 7: Infiltration/Inflow Removal (Thornton Heights and Districts 1A1A, 1A1B and 9C2), Collection System Capacity Increase AND In-Line Storage of CSO Flow [1]				
2,000,000 gallons in-line storage	1-Year, 24-Hour	0	0	$5,000,000
2,900,000 gallons in-line storage	2-Year, 24-Hour	0	0	+$1,000,000 ($6.0M total)

TABLE 9-10
ELM STREET CSO #024 ABATEMENT ALTERNATIVES

Alternative	Design Storm	Resulting Volume (gal)	Resulting Peak Flow (gpm)	Estimated Cost
4,700,000 gallons in-line storage	5-Year, 24-Hour	--	--	Not feasible - lack of space [2]
5,700,000 gallons in-line storage	10-Year, 24-Hour	--	--	Not feasible - lack of space [2]
Alternative 8: Infiltration/Inflow Removal (Thornton Heights and Districts 1A1A, 1A1B and 9C2), Collection System Capacity Increase AND Off-Line Storage of CSO Flow [1]				
2,000,000 gallon storage tank	1-Year, 24-Hour	--	--	Not feasible - lack of space [2]
2,900,000 gallons storage tank	2-Year, 24-Hour	--	--	Not feasible - lack of space [2]
4,700,000 gallons storage tank	5-Year, 24-Hour	--	--	Not feasible - lack of space [2]
5,700,000 gallons storage tank	10-Year, 24-Hour	--	--	Not feasible - lack of space [2]
Alternative 9: Infiltration/Inflow Removal (Thornton Heights and Districts 1A1A, 1A1B and 9C2), Collection System Capacity Increase AND Satellite Treatment of CSO Flow (Swirl Concentrator) [1]				
20,000 gpm (28.8 mgd)	1-Year, 24-Hour	--	--	Not feasible - lack of space [2]
31,000 gpm (44.6 mgd)	2-Year, 24-Hour	--	--	Not feasible - lack of space [2]
37,000 gpm (53.3 mgd)	5-Year, 24-Hour	--	--	Not feasible - lack of space [2]
39,000 gpm (56.2 mgd)	10-Year, 24-Hour	--	--	Not feasible - lack of space [2]
Alternative 10: Infiltration/Inflow Removal (Thornton Heights and Districts 1A1A, 1A1B and 9C2), Collection System Capacity Increase AND Centralized Treatment [1,4]				
20,000 gpm (28.8 mgd)	1-Year, 24-Hour	0	0	$8,000,000
31,000 gpm (44.6 mgd)	2-Year, 24-Hour	0	0	+$2,000,000 ($10.0M total)
37,000 gpm (53.3 mgd)	5-Year, 24-Hour	0	0	+$1,000,000 ($11.0M total)
39,000 gpm (56.2 mgd)	10-Year, 24-Hour	0	0	+$500,000 ($11.5M total)

Notes:

1. This forces more flow to CSO #024, which discharges to a less sensitive water body compared to Long Creek, Calvary Cemetery Ponds and Barberry Creek.
2. This option would only be feasible if CSO flows were pumped to remote storage tank or swirl concentrator, which would make the option cost-prohibitive.
3. This alternative would not be implemented unless there were another compelling reason to construct a storage tank at the City-owned Lot 39-001.
4. The City would need to consider implementing peak flow rate mitigation from storms greater than the 2-year, 24-hour storm event.

TABLE 10-1
PRELIMINARY 12-YEAR CSO ABATEMENT/ELIMINATION PLAN

CSO Location/Recommendation	Preliminary Cost Estimate (ENR 8361)	Target Completion Date
Evans and Broadway CSO #006		
Phase 1		
• *Collection System Capacity Upgrade*: Install parallel 54" pipe or box culvert (alongside existing 33" pipe) from CSO #006 to CSO #024.	$1,500,000	2016
• Replace CSO #006 diversion structure to facilitate new pipe connection.		
• Replace CSO #024 diversion structure to increase weir length and to facilitate new pipe connection.		
• Increase size of a portion of CSO #024 outfall from 36" to 48".		
Phase 2		
• *Flow Monitoring*: Monitor flow at CSO #006 to determine impact of collection system capacity upgrade.	Included in existing operating budget	2021
• Conduct collection system flow monitoring, update SWMM modeling and reevaluate CSO Facilities Plan Update.	Included under Long Creek Phase 2	
Elm Street CSO #024		
Phase 1		
• *Infiltration/Inflow Removal:* Separate Districts 1A1A, 1A1B, and 9C2 (North Kelsey, Chestnut, Elm, Pearl, Forest, Atlantic).	$300,000	2014
Phase 2		
• *Flow Monitoring*: Monitor flow at CSO #024 to determine impact of sewer separation and collection system capacity upgrade.	Included in existing operating budget	2021
• Conduct collection system flow monitoring, update SWMM modeling and reevaluate CSO Facilities Plan Update.	Included under Long Creek Phase 2	
Front Street CSO #018		
Phase 1		
• *Collection System Capacity Upgrade*: Replace 21" interceptor between force main terminus manhole on Margaret Street to interceptor near Clemons Street with 27" pipe.	$500,000	2018
• Lower operating levels at the Main Pump Station to reduce "stacking" issue along the main interceptor.		
• Maximize existing capacity of Front Street Pump Station (increase peak flow from 8.0 mgd to10.0 mgd through VFD speed adjustment on storm flow pump.		
• Bolt down manhole covers at manholes along Bike Path interceptor to eliminate flooding to grade along main interceptor.		

10.4 IMPLEMENTATION SCHEDULE

The following would be the anticipated budget and schedule for implementation of the next 12-year CSO abatement period. The start of the 12-year period would coincide with final approval of the CSO Facilities Plan Update. For planning purposes, we have assumed July 2009 as the start of the 12-year period. For planning purposes, the future costs have been estimated depending upon the year at which the project would commence and assuming a 3% annual rate of inflation.

TABLE 10-3
12-YEAR IMPLEMENTATION SCHEDULE

Fiscal Year (July 1 to June 30)	Budget Estimate (2008 dollars, ENR 8361, August 2008)	Project/Study	Budget Estimate (Future Dollars) (1)
2009 - 2011	$5,000,000	*Long Creek Phase 1* (Pump Station Capacity Upgrade)	$5,300,000
2011 - 2012	$100,000	*West High Phase 1* (SSES Study, if needed)	$109,000
2011-2012	$256,000(3)	*Knightville Sewer Separation Phase 1*	$256,000
2011-2012	$200,000	*Mussey Street Separation*	$206,000
2012-2013	$837,000(3)	*Knightville Sewer Separation Phase 2*	$862,000
2013-2014	$750,000 up to $500,000	*Cash Corner Phase 1 - Thornton Heights* (Infiltration/Inflow Removal) *West High Street Phase 2* (Infiltration/ Inflow Removal, if needed) (2)	$870,000 up to $580,000
2014-2015	$750,000 $300,000	*Cash Corner Phase 2 - Thornton Heights* (Infiltration/Inflow Removal) *Elm Street Phase 1* (Infiltration/Inflow Removal)	$895,000 $360,000
2015-2016	$1,500,000	*Evans and Broadway Phase 1* (Collection System Capacity Upgrade)	$1,845,000
2016-2017	$1,000,000	*Cash Corner Phase 3* (Collection System Capacity Upgrade)	$1,270,000
2017-2018	$500,000	*Front Street Phase 1* (Collection System Capacity Upgrade) *West High Street Phase 3* (Collection System Capacity Upgrade)	$650,000
2018-2020	$1,500,000	*Front Street Phase 2* (Wastewater Screening/Collection System Capacity Upgrade)	$2,075,000
2020-2021	$250,000	Compile Flow Monitoring Data CSO Facilities Plan Update	$350,000
TOTAL	**$13.44 million**		**$15.63 million**

Note:
1. Based upon 3% inflation rate per year and the expected date at which bidding of the projects would take place.
2. If no project is necessary to eliminate the West High Street CSO #019 in the fiscal year shown, it is recommended that the Front Street Phase 2 project be substituted in its place (Wastewater Screening/Collection System Capacity Upgrade).
3. Cost based on 2011 dollars.

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