Bassett Creek Watershed Management Commission

BASSETT CREEK WATERSHED MANAGEMENT COMMISSION
FLOOD CONTROL PROJECT (FCP) POLICIES
Approved by Commission at their May 19 and July 21, 2016 Meetings
Table 1 Updated December 2021
(Based on recommendations from the Technical Advisory Committee developed over several meetings: September and November 2015; and January, February, and March 2016)

1. Inspections by the Commission

   The Commission will continue an inspection and maintenance program for the FCP features.

   The *Bassett Creek Flood Control Project Operation and Maintenance Manual* should be followed but with increased frequency of some inspections:
   - Annual inspection of all non-tunnel FCP features
   - Inspection at least every 5 years of the double box culvert
   - Inspection every 5 years of 3rd Avenue Deep Tunnel (in conjunction with City of Minneapolis I-94 tunnel inspection)
   - Inspection every 10 years of the 2nd Street Deep Tunnel

   The Commission will continue to fully fund the FCP inspections (including the recommended more-frequent tunnel inspections), unless the City of Minneapolis requests even more-frequent inspections or more complicated (more expensive) inspections beyond the currently used National Association of Sewer Service Companies' (NASSCO) assessment and certification program. The Commission will continue funding the FCP inspection costs through the Long Term Maintenance Fund.

   Table 1 shows the estimated 20-year costs following the new inspection frequencies. (Over 20 years, the total added cost of new tunnel inspections would be $55,000, or $2,750/year.)

2. Inspection Reports

   The Commission Engineer will continue to submit annual inspection reports to cities regarding the condition and maintenance/repair needs of the FCP features in their cities. Cities will formally notify the Commission Engineer regarding their completed maintenance and repair actions on any of the FCP project features. The Commission Engineer will include this information in the following year's inspection reports to the Commission and the letters sent to the cities (with copies sent to the US Army Corps of Engineers). The letters sent to the cities must note that the cities are required to report on their maintenance and repair actions. The inspection and reporting are essential to ensure the Commission maintains its eligibility to receive federal funds to repair or replace flood control project features in the event of a catastrophe.

The Commission will rely on the FCP inspection and maintenance program to identify when major repairs, rehabilitation or replacement of features will be needed.

3. Maintenance Funding

   The Commission will add the identified FCP major repairs, rehabilitation and replacement projects to the BCWMC CIP and will fund the projects using the BCWMC's ad valorem levy (via Hennepin County). The Commission will need to amend the BCWMC plan to add these projects to the CIP and to change (or add to) the funding mechanisms for project implementation.

   The Commission will maintain the existing Flood Control Emergency Repair Fund and the Long-Term Maintenance Fund as two separate funds.

4. Emergency Management

   Member cities shall perform the initial response to an emergency with the FCP structures, as the Commission is not set up to perform these emergency management and response services. The Commission shall assist the cities in obtaining reimbursement for the emergency response, either through Commission funds or grants (e.g., FEMA funding).

5. Flood Control Projects at Road Crossings

   Member cities (or other road authority) where the FCP structures are located are responsible for maintenance, repair and replacement of road crossings, and their corresponding conveyance structures, that were installed as part of the FCP.

   [This clarifies BCWMC policy (#23) in the 2015 BCWMC Watershed Management Plan, which states that these crossings will be "maintained" by the city where the structure is located. However, policy #23 does not address significant rehabilitation or replacement. This clarification also aligns with the intent of the original FCP—that the cities would be responsible for significant rehabilitation or replacement of road crossings that were installed as part of the FCP because they are primarily transportation-related.]

6. Routine vs. Major Maintenance and Repair

   - The Commission requires that cities are responsible for routine maintenance and repair of the FCP features (per Policy #24 in the 2015 BCWMC Watershed Management Plan). Table 2 shows the routine maintenance and repairs.

   - The Commission will reimburse cities (if requested) for maintenance and repairs that are over $25,000, using funds from the Long-Term Maintenance Fund. Before receiving funding from the Long-Term Maintenance Fund, the cities must perform regular, routine maintenance (reporting of completed maintenance and repair actions are required as part of #2 above). This will help prevent the situation wherein the Commission pays for maintenance work over $25,000 because the cities neglected routine maintenance for several years. Cities are expected to inform the Commission in advance (e.g., two years) of their request for reimbursement.

- The Commission will consider adding maintenance and repair projects that are more than $100,000 to the BCWMC CIP. Table 2 provides examples of maintenance and repairs that are major or could be major.

[These policies regarding *routine* versus *major maintenance/repair* of the FCP features are intended to clarify policy #24 of the 2015 BCWMC Watershed Management Plan, which states that routine maintenance and repair is the responsibility of the city where the FCP feature is located, and Plan policy #20, which states that funding of major repair and maintenance is a BCWMC responsibility.]

Additional information (from July 13, 2016 memo): Attached Table 3 provides estimated costs for annual operation and maintenance, five-year operation and maintenance, significant rehabilitation of structures, and replacement of structures. As Table 3 shows, the five year operation and maintenance costs (in blue) over $25,000 could be $1,232,000; the significant rehabilitation of structures costs (in blue) could be from $2,026,000 (without tunnel) to $14,800,000 (including the tunnel); and the replacement of structures costs (in blue) could be from $8,100,00 (without tunnel) to $142,740,000 (including the tunnel).

Table 1. Flood Control Project Inspection Program – Updated Dec 2021

Item	Current/ Recommended Inspection Cycle	Cost/Inspection[1]	20-Year Cost[1,2] Current/Recommended
Annual inspection of the FCP features, except double box culvert and the deep tunnel	Annually	$15,000	$200,000/$300,000
Double box culvert inspection (NASSCO)[3]	Every 5 years	$45,000	$128,000/$180,000
Deep tunnel (2nd St. & 3rd Ave.) inspection (NAASCO)[3]	Every 10 years	$65,000	$90,000/$130,000
Two additional deep tunnel inspections of 3rd Ave tunnel and unsubmerged portions of 2nd St. tunnel (Option 2 from above - non-NASSCO)[4]	At 5 years between the 10-year inspections (two total inspections)	$20,000	$10,000/$40,000
Total[2]			**$428,000/$650,000**

[1] 2021 dollars

[2] Simple summation (annualized or present worth not calculated)

[3] Tunnel condition inspection based on pipeline assessment and certification program developed by the National Association of Sewer Service Companies (NASSCO)

[4] Brief tunnel inspections looking for significant changes without coding existing or new defects or preparing detailed report, includes preparation of technical memorandum.

Table 2 Routine vs. Major Maintenance and Repair Items

Item #	Routine vs. Major Maintenance and Repairs –as Recommended by TAC[1]
Routine	
1	Vegetation: removal of trees, removal of brush, chemical treatment of stumps, control of noxious weeds, establish vegetation on bare areas.
2	Removal of debris: woody debris, riprap, trash from channel, inlets, culverts
3	Repair erosion; channels, inlet and outlet structures, culvert ends
4	Repair/replace riprap: on inlet and outlet ends of culverts, channels, banks
6	Remove sediment from channels, structures, culverts, etc.
10	Repair/maintain guard rails, hand rails and fencing: remove rust, prime and paint, repair damaged rails and posts, replace rusted-out sections, repair cables, replace posts, repair chain link fence
12	Repair concrete pipe: repair joints, tie-bolts, spalling, connection to culverts, breakage
13	Repair/replace catch basins, manholes, casting assemblies, grates
14	Repair/maintain debris barrier: removal of debris, repair cables, replace poles
15	Repair/maintain tunnel inlet trash rack: repair/replace trash rack rods, loose or broken, vandalized, bent
16	Street repairs: pavement, curb and gutter, cracks, depressions, settlement
Major	
5	Repair/replace gabion baskets
7	Remove sediment/dredge ponds, basins, etc.
17	Tunnel repairs: concrete and other repairs to the new Bassett Creek tunnel
Could be major depending on extent	
8	Repair scouring/undercutting at structures and culvert outlets
9	Repair concrete structures: cracking, spalling, breakage
11	Culverts/Bebo sections: joints, settlement, separation, concrete spalling, wing walls –movement and breakage

[1] Based on needed repairs identified during 2015 FCP inspection

Table 3 (Table 1 in September 2, 2015 memo to TAC)
Summary of Annual/Periodic Operation and Maintenance Requirements & Costs
Bassett Creek Flood Control Project, MN
September 1, 2015

BCWMC Responsibility[10]
City Responsibility[10]
City Responsibility per TAC Recommendation 7

		Annual Operation & Maintenance			Five Year Operation & Maintenance		Significant Rehabilitation of Structure [6]	End of Design Life	
		Annual Inspection & Report [1]	Debris Removal [2]	Brushing & Tree Removal [3]	Five-Year Inspection & Report [4]	General Maintenance & Repairs [5]		Estimated Year of Replacement [7]	Replacement of Structure [9]
Minneapolis									
A	Tunnel								
1	Phase 1 - Second Street Tunnel (Mn/DOT)					$439,100	$5,030,400	2029	$61,944,784
2	Phase 2 - 3rd Avenue Tunnel (BCWMC)					$150,900	$1,728,400	2040	$12,378,834
3	Phase 3 - Double Box Conduit and Inlet Structure				$13,900	$524,600	$6,010,500	2042	$60,309,774
	Minneapolis Subtotal:				**$13,900**	**$1,114,600**	**$12,769,300**		**$134,633,400**
Golden Valley									
B	Golden Valley Country Club Embankment	$1,500	$1,800	$1,800		$14,600	N.A	2031	N.A.
	Golden Valley Country Club Control Structure	$1,500	$1,800	$1,800		$14,600	$491,521	2044	$1,966,083
C	Hwy 55 Control Structure	$1,500	$1,800			$14,600	$115,295	2044	$461,180
D	Wisconsin Avenue Control Structure	$1,500	$1,800			$14,600	$108,547	2037	$434,189
E	Road Crossings								
1	Regent Avenue	$700	(8)			(8)	$123,964	2031	$495,854
2	Noble Avenue	$700	(8)			(8)	$123,964	2031	$495,854
3	Westbrook Road	$700	(8)			(8)	$217,982	2043	$871,929
	Golden Valley Subtotal:	**$8,100**	**$7,200**	**$3,600**		**$58,400**	**$1,181,270**		**$4,725,089**
Crystal									
F	Edgewood Embankment and Control Structures	$1,500	$1,800	$4,400		$14,600	$95,039	2031	$380,155
G	Markwood Channel & Culverts	$1,500	(8)			(8)	$61,982	2031	$247,927
H	Hwy 100 Control Structure & BC Park Pond	$1,500	$1,800	$1,800		$117,100	$975,180	2031	$3,900,720
I	Road Crossings								
1	32nd Avenue	$700	(8)			(8)	$95,039	2031	$380,155
2	Brunswick Avenue	$700	(8)			(8)	$95,039	2031	$380,155
3	34th Avenue	$700	(8)			(8)	$95,039	2031	$380,155
4	Georgia Avenue	$700	(8)			(8)	$78,510	2031	$314,041
5	36th/Hampshire Avenue	$700	(8)			(8)	$157,021	2031	$628,082
6	Douglas Drive	$700	(8)			(8)	$108,547	2037	$434,189
	Crystal Subtotal:	**$8,800**	**$3,500**	**$6,100**		**$131,700**	**$1,761,393**		**$7,045,580**
Plymouth									
J	Medicine Lake Outlet Structure	$1,500	$1,800	$1,800			$115,879	2046	$463,515
K	Plymouth Creek Fish Barrier	$1,500	$1,800	$1,800			$64,142	2037	$256,566
	Plymouth Subtotal:	**$1,500**	**$1,800**	**$1,800**			**$180,020**		**$720,081**
Total Bassett Creek Flood Control Project Costs		**$18,400**	**$12,500**	**$11,500**	**$13,900**	**$1,304,700**	**$15,900,000**		**$147,120,000**
							$14,800,000		**$142,740,000**
							$1,100,000		**$4,380,000**

(1) Inspection & report; Inspection at tunnel only includes inlet structure and approach channel
(2) BCMWC Responsible for Maintenance. Work assumed to be performed by City ~~and reimbursed by BCWMC~~.
(3) BCMWC Responsible for Maintenance. Work assumed to be performed by City ~~and reimbursed by BCWMC~~.
(4) Five year inspection required for above-water portion of Bassett Creek Tunnel
(5) General Maintenance includes: sediment removal, erosion repair, riprap replacement, sod & vegetation and other misc. maintenance items.
Does not include gate at Wisconsin Ave. (Note: Bassett Creek Park Pond is assumed to be dredged every 10 years at cost of $230,000 assuming a type 1 material and $500,000 for a type 2 material that requires disposal in a landfill)
Lowering the middle pool (if approved by Corps, Coast Guard, DNR etc.) could decrease dewatering costs up to $45,000.
(6) Includes all items in 1-year and 5-year O &M repairs plus void fill in Minneapolis tunnels, partial structure demo and replacement, Wisconsin Avenue gate upgrades for construction costs in 2014.
(assume one repair project per project feature in addition to 5-yr maintenance)
(7) Assumes a 50 year life of project
(8) Assumes City shall be responsible for maintenance of all road crossings and the Markwood channel modificatons and storm sewer components.
(9) Cost includes total replacement of structure at the end of design life assuming 3% inflation and construction technology, means, and methods remain as they are today (2014).
(10) **5.1.1.3 Management of the BCWMC Trunk System and Flood Control Project**
...The BCWMC will finance major maintenance and repair of water level control and conveyance structures that were part of the original BCWMC Flood Control Project on the same basis as the original project. Ne
road crossings of the creek that were installed as part of the project will be maintained by the city wherethe structure is located. Member cities are responsible for routine maintenance and repair of BCWM
Flood Control Project structures located within each city; this includes the removal of debris, brush, and trees. The BCWMC will work with member cities to determine responsibilities for major rehabilitation ar
replacement of the BCWMC Flood Control Project features and establish the associated funding mechanisms (see policy 22, Section 4.2.2).