

Section 4

Watershed Action Plan

This section summarizes the recommendations for watershed improvements developed through the Little Calumet River Detailed Watershed Plan (DWP) process. The recommendations and supporting information will be considered by the District's Board of Commissioners in their prioritization of a countywide Stormwater Capital Improvement Program (CIP). The recommendations within the DWP consist of maintenance activities (Section 4.1) and recommended capital improvements (Section 4.2).

4.1 Watershed Maintenance Activities

Review of reported stormwater problem data indicated that certain types of maintenance activities would be helpful in preventing stormwater problems. The District, through its maintenance activities, has been actively removing blockages such as tree limbs and woody debris from channels throughout Cook County. Local communities have reported benefits from these maintenance activities. It is recommended that the District's maintenance activities be continued to address ongoing future maintenance needs. Most structures in the watershed are in need of minor debris clearing, and should be periodically inspected to maintain hydraulic capacity.

Sedimentation is a dynamic process that is affected by soil protective measures taken in upland tributary areas as well as dynamic streambank conditions. Best management practices in upland areas should be paired with stream maintenance measures to reduce sediment delivered to waterways to reduce the need for extensive dredging programs.

Improvement projects recommended in the Little Calumet River DWP, including detention basins, channel diversions, etc., will require ongoing maintenance if constructed. Costs associated with maintenance over a 50-year life-cycle period were included in the cost estimates presented in this DWP. It is recommended that the District develop maintenance plans for capital improvements, and where applicable, execute agreements with local governments to delegate certain maintenance responsibilities. Maintenance agreements could follow current District practice, where the District is responsible for operation and maintenance of structural, electrical, and mechanical facilities, and grounds are the responsibility of partnering organizations.

Table 4.1 lists problem area locations where stream maintenance activities should be prioritized, as maintenance is the only improvement necessary to prevent flooding (no structural improvements needed).

Table 4.1: Summary of Problem Areas where Debris Removal or Other Maintenance is Recommended

Problem Area ID	Tributary	Location	Type of Maintenance Activity Required
BLI1	Midlothian Creek	Western Avenue and 139 th Street	Remove debris and clear channel
BRE2	Midlothian Creek	167 th Street from Harlem Avenue to Cicero Avenue	Remove debris and clear channel
BRE6	Midlothian Creek	Central Avenue from 183 rd Street to Midlothian Turnpike	Remove debris and clear channel
BRE7	Midlothian Creek	Ridgeland Avenue from 147 th Street to 135 th Street	Remove debris and clear channel
PAR2	Thorn Creek	Western Avenue/ E&J Railroad (South Street)	Remove debris and clear channel
MAT2	Butterfield Creek	Cicero Avenue to Vollmer Avenue	Remove debris and clear channel
MAT3	Butterfield Creek	US 30 and Ridgeland Avenue	Remove debris and clear channel
MAT4	Butterfield Creek	Lindenwood Avenue to Rose Lane	Remove debris and clear channel
MAT5	Butterfield Creek	1/2 mile south of US 30/Kostner Avenue	Remove debris and clear channel
OKF5	Midlothian Creek	North of 155 th Street and Long Avenue	Remove debris and clear channel
ORP5	Midlothian Creek	167 th Street and 88 th Avenue	Remove debris and clear channel
ORT2	Midlothian Creek	80 th Avenue from 183 rd Street to 151 st Street	Remove debris and clear channel
RIT2	Butterfield Creek	Sauk Trail Road from Harlem Avenue to Western Avenue	Remove debris and clear channel
RIT3	Butterfield Creek	Vollmer Road from Harlem Avenue to Western Avenue	Remove debris and clear channel
RIT4	Butterfield Creek	Flossmoor Road from Ridgeland Avenue to Governors Highway	Remove debris and clear channel
RIT6	Butterfield Creek	Ridgeland Avenue from Steger Road to 183 rd Street	Remove debris and clear channel

4.2 Recommended Capital Improvements

Table 4.2 lists the recommended capital improvements for the Little Calumet River Watershed (prioritization matrix). The District will use data presented here to support prioritization of a countywide stormwater CIP.

Table 4.2: Little Calumet River Watershed Prioritization Matrix

ID	Subwatershed	B/C Ratio	Total Benefits (\$)	Total Project Cost (\$)	Probable Construction Cost (\$)	Relative Damage Averted			Acreage Removed from Inundation Area (ac)	Wetland or Riparian Areas Impacted (ac)	Cumulative Structures & Roadways Protected	Implementation Time (months)*	Water Quality Benefit	Community Involvement
						25%	50%	75%						
BTCR-G1	Butterfield Creek	0.18	\$1,495,000	\$8,494,000	\$6,363,000				18	-	18 Structures	12	Positive	Unincorporated Cook County
BTCR-G2	Butterfield Creek	<0.01	\$13,000	\$9,556,000	\$5,567,000				15	-	4 Structures	6	No Impact	Olympia Fields
BTCR-G3	Butterfield Creek	0.04	\$1,109,000	\$29,876,000	\$17,572,000				6	-	12 Structures, 2 Roadways	18	No Impact	Flossmoor
BCEB-G1	Butterfield Creek East Branch	0.02	\$515,000	\$28,079,000	\$19,462,000				88	-	6 Structures, 2 Roadways	18	Positive	Matteson
BLCR-G1	Cal-Union Drainage Ditch	0.17	\$2,293,000	\$13,842,000	\$10,600,000				9	-	15 Structures	24	Positive	Markham
CHEB-G1	Cal-Union Drainage Ditch	0.05	\$170,000	\$3,300,000	\$2,140,000				15	-	16 Structures, 2 Roadways	12	No Impact	Homewood, Hazel Crest
CHEB-G3	Cal-Union Drainage Ditch	3.37	\$7,680,000	\$2,282,000	\$849,000				6	-	9 Structures, 2 Roadways	12	No Impact	Homewood
CUDD-G1	Cal-Union Drainage Ditch	0.03	\$5,782,000	\$165,318,000	\$119,593,000				750	-	1,065 Structures	36	Positive	Markham, Harvey, Hazel Crest
CUDD-G2	Cal-Union Drainage Ditch	0.07	\$3,377,000	\$50,406,000	\$39,733,000				98	-	20 Structures	30	Positive	Markham, Harvey, Unincorporated
CUDD-G3	Cal-Union Drainage Ditch	0.40	\$1,144,000	\$2,852,000	\$1,537,000				44	-	60 Structures	12	Positive	Markham
CUSW-G1	Cal-Union Drainage Ditch	0.03	\$15,000	\$536,000	\$328,000				22	-	1 Roadway	6	No Impact	Hazel Crest
CUSW-G2	Cal-Union Drainage Ditch	<0.01	\$6,000	\$1,206,000	\$735,000				2	-	1 Roadway	12	No Impact	Hazel Crest
CUTS-G1	Cal-Union Drainage Ditch	0.02	\$63,000	\$2,917,000	\$1,666,000				3	-	10 Structures, 2 Roadways	6	No Impact	Country Club Hills
PKCR-G1	Cal-Union Drainage Ditch	0.26	\$5,187,000	\$20,327,000	\$15,819,000				15	-	53 Structures	24	Positive	Markham
DRCR-G1	Deer Creek	0.49	\$3,801,000	\$8,331,000	\$6,881,000				198	-	270 Structures	12	No Impact	Ford Heights
DRCR-G2	Deer Creek	< 0.01	\$55,000	\$14,312,000	\$10,671,000				14	-	2 Structures	6	No Impact	Steger
LCRW-G1	Little Calumet River	< 0.01	\$16,000	\$3,412,000	\$1,925,000				1	-	4 Structures	6	No Impact	Harvey
LCRW-G2	Little Calumet River	0.03	\$148,000	\$5,752,000	\$3,102,000				4	-	6 Structures	6	No Impact	South Holland
LCRW-G3	Little Calumet River	< 0.01	\$4,000	\$4,332,000	\$2,151,000				2	-	2 Structures	6	No Impact	South Holland
LCRW-G4	Little Calumet River	< 0.01	\$3,000	\$3,427,000	\$1,913,000				2	-	1 Structure	6	No Impact	South Holland
LCRW-G5	Little Calumet River	2.21	\$2,494,000	\$1,126,000	\$480,000				2	-	6 Structures	6	No Impact	South Holland
LCRW-G6	Little Calumet River	0.03	\$60,000	\$2,401,000	\$644,000				2	-	2 Structures	6	No Impact	Dolton
LCRW-G7	Little Calumet River	0.01	\$21,000	\$3,040,000	\$1,518,000				2	-	2 Structures	6	No Impact	South Holland

Table 4.2: Little Calumet River Watershed Prioritization Matrix

ID	Subwatershed	B/C Ratio	Total Benefits (\$)	Total Project Cost (\$)	Probable Construction Cost (\$)	Relative Damage Averted			Acreage Removed from Inundation Area (ac)	Wetland or Riparian Areas Impacted (ac)	Cumulative Structures & Roadways Protected	Implementation Time (months)*	Water Quality Benefit	Community Involvement
						25%	50%	75%						
LCRW-G8	Little Calumet River	0.30	\$702,000	\$2,373,000	\$1,389,000				14	-	8 Structures	6	No Impact	South Holland
MTCR-G1	Midlothian Creek	0.08	\$134,000	\$1,710,000	\$1,118,000				11	-	25 Structures	6	No Impact	Tinley Park
MTCR-G2	Midlothian Creek	0.71	\$1,110,000	\$1,569,000	\$926,000				-	-	4 Structures	6	No Impact	Tinley Park
MTCR-G3	Midlothian Creek	0.01	\$37,000	\$3,455,000	\$1,814,000				25	-	23 Structures, 2 Roadways	12	No Impact	Oak Forest
MTCR-G4	Midlothian Creek	0.04	\$1,143,000	\$27,700,000	\$15,996,000				8	-	12 Structures, 2 Roadways	18	No Impact	Oak Forest
MTCR-G5	Midlothian Creek	< 0.01	\$58,000	\$21,000,000	\$12,673,000				9	-	25 Structures	12	No Impact	Oak Forest
MTCR-G6	Midlothian Creek	0.23	\$110,000	\$479,000	\$400,000				33	-	25 Structures	6	No Impact	Robbins
NTCR-G1	Natalie Creek	0.24	\$14,700,000	\$61,940,000	\$42,390,000				136	-	132 Structures	30	No impact	Oak Forest and Midlothian
LDET-G1	North Creek	0.29	\$82,000	\$287,000	\$191,000				3	-	9 Structures, 1 Roadway	6	No Impact	Sauk Village
NCLD-G1	North Creek	0.03	\$2,364,000	\$69,500,000	\$52,247,000				594	-	49 Structures, 10 Roadways	36	Positive	Lansing, Lynwood
NCLD-G2	North Creek	< 0.01	\$1,000	\$357,000	\$201,000				5	-	2 Structures, 1 Roadway	6	No Impact	Bloom Township
NCLD-G3	North Creek	< 0.01	\$10,000	\$2,180,000	\$1,201,000				7	-	12 Structures, 1 Roadway	6	No Impact	Sauk Village
NOCR-G1	North Creek	0.05	\$388,000	\$7,126,000	\$4,605,000				55	-	14 Structures, 4 Roadways	12	Positive	Lansing
PLCR-G1	Plum Creek	0.73	\$2,781,000	\$3,803,000	\$2,540,000				20	-	1 Structure	6	No Impact	Will County, Dyer, IN
TCTA-G1	Thorn Creek	0.02	\$1,415,000	\$89,000,000	\$65,426,000				61	-	51 Structures	24	Positive	Chicago Heights, South Chicago
TCTB-G1	Thorn Creek	< 0.01	\$8,000	\$6,900,000	\$3,825,000				3	-	4 Structures, 3 Roadways	6	No Impact	Chicago Heights
TCTD-G1	Thorn Creek	0.08	\$5,500,000	\$65,442,000	\$48,905,000				50	-	22 Structures, 1 Roadway	30	Positive	Park Forest
THCR-G1	Thorn Creek	0.02	\$717,000	\$37,660,000	\$25,880,000				68	-	51 Structures, 3 Roadways	24	No Impact	Chicago Heights, Glenwood, South
THCR-G2	Thorn Creek	0.63	\$1,600,000	\$2,543,000	\$1,878,000				3	-	1 Roadway	6	No Impact	Cook County FPD

■ Property Damage
 ■ Erosion
 ■ Transportation
 ■ Recreation

4.3 Implementation Plan

Alternatives listed in **Table 4.2** can be constructed independently. However in many cases, benefits associated with constructing several alternatives in a subwatershed will exceed the sum of the benefits of the individual alternatives. The data presented in **Table 4.2**, along with non-economic factors, will allow the District to prioritize its CIP and implement projects. A number of alternatives in **Table 4.2** require the acquisition of land that currently may be unavailable. Upon selecting an alternative for implementation, the District will identify and evaluate land acquisition needs and procedures.