

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name CSTB-1
Problem Description Overbank flooding along Cal Sag Tributary B
Strategy Add detention basin downstream of Timber Ln.
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	8443	\$11	\$90,171	\$0	\$0	6 ft deep, side slope of 3:1, pond footprint 164 ft x 276 ft
Channel treatment: Material to be hauled offsite	yd3	7101	\$12	\$83,437	\$0	\$0	Volume of excavation minus that used for embankment
Embankment construction, grading and restoration: Compaction of fill	yd3	1342	\$5	\$7,166	\$0	\$0	build up berm on 3 sides 604 ft long, 3:1 slope, top width of 3ft , 4 ft high
Pipe in earth (city): 36 inches or less	lf	20	\$217	\$4,336	\$4,032	\$0	outlet/inlet pipe, 3ft diameter
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	US headwall
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	DS headwall
Channel treatment: Soil stabilization and vegetative cover	yd2	1703	\$14	\$23,643	\$21,988	\$5,661	Perimeter of 808 LF, width of 19 LF
Outlet structures: Concrete swale	yd2	100	\$98	\$9,825	\$9,137	\$0	weir, length of 50 LF, width of 6 LF
Land Acquisition: Purchase of Property *	dollar	237174	\$1	\$237,174	\$0	\$0	1.64 acres at \$144,618/acre for detention basin

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$223,779	\$39,994	\$5,661	
Utility Relocation			4 %	\$8,951			
Mobilization \ General Conditions			5%	\$11,189			
Subtotal with Percent Allowances				\$243,919			
Contingency			30%	\$73,176			
Profit			5%	\$15,855			
Probable Construction Cost Estimate				\$332,949			
Design Engineering, Geotechnical, and Construction Management			10%	\$33,295			
Property Acquisition Cost:				\$237,174			
Total Conceptual Cost Estimate				\$649,073			

Additional Comments

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Alternative Name	CSTB-3
Problem Description	
Strategy	2 new detention basins, increase sizes of 2 culverts, and expand one existing detention basin
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

					Maint.	Replacement	
	Unit	Quantity	Unit Cost	Base Cost	Cost	Cost	Notes/Issues
Channel treatment: Excavation	yd3	8443	\$11	\$90,171	\$0	\$0	Pond downstream of Timber Lane; 6 LF deep, side slope of 3:1, pond footprint 164 LF x 276 LF
Channel treatment: Material to be hauled offsite	yd3	7101	\$12	\$83,437	\$0	\$0	Pond downstream of Timber Lane; volume of excavation minus that used for embankment
Embankment construction, grading and restoration: Compaction of fill	yd3	1342	\$5	\$7,166	\$0	\$0	Pond downstream of Timber Lane; berm on 3 sides 604 LF long, 3:1 slope, top width of 3 LF, 4 LF high
Pipe in earth (city): 36 inches or less	lf	30	\$217	\$6,503	\$6,048	\$0	Pond downstream of Timber Lane; outlet pipe, 2 ft diameter
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond downstream of Timber Lane; US headwall
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond downstream of Timber Lane; DS headwall
Channel treatment: Soil stabilization and vegetative cover	yd2	1703	\$14	\$23,643	\$21,988	\$5,661	Pond downstream of Timber Lane; perimeter of 810 LF x 19 LF wide area vegetated
Outlet structures: Concrete swale	yd2	100	\$98	\$9,825	\$9,137	\$0	Pond downstream of Timber Lane; weir for inlet from stream to pond, length of 50 LF, width of 6 LF
Pipe in earth (city): 36 inches or less	lf	20	\$217	\$4,336	\$4,032	\$0	Pond upstream of Timber Lane; Outlet pipe, 12 in diameter pipe
Channel treatment: Material to be hauled offsite	yd3	4451	\$12	\$52,299	\$0	\$0	Pond upstream of Timber Lane; excavation minus embankment
Embankment construction, grading and restoration: Compaction of fill	yd3	2477	\$5	\$13,228	\$0	\$0	Pond upstream of Timber Lane; 530.8 length berm, 7 LF high, 2 sides, 3 LF top width, 3:1 side slope
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond upstream of Timber Lane; Inlet Structure
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond upstream of Timber Lane; Outlet Structure
Channel treatment: Soil stabilization and vegetative cover	yd2	2268	\$14	\$31,482	\$29,278	\$7,539	Perimeter of 1100 LF x 19 LF wide area vegetated

Alternative Name	CSTB-3
Problem Description	
Strategy	2 new detention basins, increase sizes of 2 culverts, and expand one existing detention basin
District Minimum	Met
Criteria for Funding:	Yes
Recommended	Yes

					Maint. Cost	Replacement Cost	Notes/Issues
	Unit	Quantity	Unit Cost	Base Cost			
Pipe under pavement (county): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	78	\$609	\$47,479	\$44,154	\$0	Replace 119th Street culvert with 5 ft x 6 ft box culvert
Outlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	Replace 119th Street culvert with 5 ft x 6 ft box culvert
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	Replace 119th Street culvert with 5 ft x 6 ft box culvert
Land Acquisition: Purchase of Property *	dollar	41108	\$1	\$41,108	\$0	\$0	0.64 acres required for detention, \$61,458/acre
Buyout: Property *	dollar	322310	\$1	\$322,310	\$0	\$0	Buyout of residence for detention
Buyout: Property *	dollar	235782	\$1	\$235,782	\$0	\$0	Buyout of residence for detention
Buyout: Property *	dollar	235782	\$1	\$235,782	\$0	\$0	Buyout of residence for detention
Land Acquisition: Purchase of Property *	dollar	237174	\$1	\$237,174	\$0	\$0	1.64 acres required for detention, \$144,618/acre
Pipe under pavement (city): 42 to 66 inches / box culvert (15 to 27 ft2)	lf	35	\$292	\$10,204	\$9,489	\$0	Replace Timber Lane culvert with 3.5-ft diameter culvert
Channel treatment: Excavation	yd3	244	\$11	\$2,606	\$0	\$0	For existing detention basin expansion
Channel treatment: Material to be hauled offsite	yd3	244	\$12	\$2,867	\$0	\$0	For existing detention basin expansion
Channel treatment: Vegetative cover only	yd2	733	\$9	\$6,260	\$5,822	\$1,499	For existing detention basin expansion
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	For existing detention basin expansion
Channel treatment: Excavation	yd3	7873	\$11	\$84,084	\$0	\$0	Pond upstream of Timber Lane; 4.88 ac-ft of storage
Outlet structures: Concrete swale	yd2	100	\$98	\$9,825	\$9,137	\$0	Pond upstream of Timber Lane; weir for inlet from stream to pond, length of 50 LF, width of 6 LF
Pipe in earth (city): 36 inches or less	lf	20	\$217	\$4,336	\$4,032	\$0	Pond upstream of Timber Lane; inlet pipe, 1 ft x 2 ft box culvert
Outlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	Replace Timber Lane culvert with 3.5-ft diameter culvert
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	Replace Timber Lane culvert with 3.5-ft diameter culvert

Alternative Name CSTB-3

Problem Description

Strategy 2 new detention basins, increase sizes of 2 culverts, and expand one existing detention basin

District Minimum Met

Criteria for Funding:

Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$528,696	\$179,337	\$14,699	
Utility Relocation			4 %	\$21,148			
Mobilization \ General Conditions			5%	\$26,435			
Subtotal with Percent Allowances				\$576,279			
Contingency			30%	\$172,884			
Profit			5%	\$37,458			
Probable Construction Cost Estimate				\$786,621			
Design Engineering, Geotechnical, and Construction Management			10%	\$78,662			
Property Acquisition Cost:				\$1,072,156			
Total Conceptual Cost Estimate				\$2,131,475			
Additional Comments							

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Alternative Name	CSTC-1
Problem Description	Throughout the system downstream
Strategy	Provide 37 ac-ft of detention upstream of Central Ave. Lower and widen channel into an online pond
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	55000	\$11	\$587,400	\$0	\$0	Excavation of pond with exception of existing channel, 7.5 acres, 5 ft deep
Channel treatment: Material to be hauled offsite	yd3	55000	\$12	\$646,250	\$0	\$0	Haul away excess material
Channel treatment: Biostabilization	yd2	850	\$64	\$54,460	\$50,647	\$13,040	low flow channel restoration, 750 ft long, 10 ft wide
Channel treatment: Soil stabilization and vegetative cover	yd2	33500	\$14	\$464,980	\$432,424	\$111,341	finished grading, topsoil and seeding, 7 acres
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	100	\$425	\$42,502	\$39,526	\$0	New outlet for Central Ave sewer
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	New outlet for Central Ave sewer
Land Acquisition: Permanent Easement *	dollar	745609	\$1	\$745,609	\$0	\$0	Permanent Easement for pond area, 7.5 acres at \$198,829/acre

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)		\$1,805,107	\$531,446	\$124,381
Utility Relocation	4 %	\$72,204		
Mobilization \ General Conditions	5%	\$90,255		
Subtotal with Percent Allowances		\$1,967,566		
Contingency	30%	\$590,270		
Profit	5%	\$127,892		
Probable Construction Cost Estimate		\$2,685,728		
Design Engineering, Geotechnical, and Construction Management	10%	\$268,573		
Property Acquisition Cost:		\$745,609		
Total Conceptual Cost Estimate		\$4,355,736		

Additional Comments

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Alternative Name IMCA-1
Problem Description
Strategy IMTT and KA Steel outlets
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Pipe under pavement (county): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	150	\$661	\$99,155	\$92,212	\$0	IMTT; 3 - 50 LF 5 ft x 10 ft box culverts
Outlet structures: Concrete swale	yd2	444	\$98	\$43,666	\$40,609	\$0	IMTT headwall structures - 2 @ 50 ft wide by 20 ft deep x 6 ft tall
Channel treatment: Excavation	yd3	8889	\$11	\$94,933	\$0	\$0	KA Steel - excavate an 8 ft deep, 30 ft wide, 1000 ft long channel
Channel treatment: Material to be hauled offsite	yd3	8889	\$12	\$104,444	\$0	\$0	KA Steel - assume all excavated material must be hauled offsite
Pipe under pavement (county): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	100	\$661	\$66,103	\$61,475	\$0	KA Steel; 2 - 50 LF 5 ft x 10 ft box culverts
Outlet structures: Concrete swale	yd2	296	\$98	\$29,111	\$27,073	\$0	KA Steel headwall structures - 2 @ 33 ft wide by 20 ft deep x 6 ft tall
Channel treatment: Vegetative cover only	yd2	4444	\$9	\$37,956	\$35,298	\$9,089	vegetated cover for surface of channel - 40 ft wide by 1,000 ft long

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$475,369	\$256,667	\$9,089	
Utility Relocation			4 %	\$19,015			
Mobilization \ General Conditions			5 %	\$23,768			
Subtotal with Percent Allowances				\$518,152			
Contingency			30%	\$155,446			
Profit			5%	\$33,680			
Probable Construction Cost Estimate				\$707,277			
Design Engineering, Geotechnical, and Construction Management			10%	\$70,728			
Property Acquisition Cost:				\$0			
Total Conceptual Cost Estimate				\$1,043,761			

Additional Comments

**Metropolitan Water Reclamation District of Greater Chicago
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Alternative Name	LDDT-1
Problem Description	Flooding between Lucas Diversion Ditch and Robets Road
Strategy	Increase detention potential of ComEd and some Park District land to the West of Lucas Diversion Ditch
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	27426	\$11	\$292,910	\$0	\$0	Pond LDDT_915- excavation of 17 acre ft of additional detention
Channel treatment: Material to be hauled offsite	yd3	27426	\$12	\$322,256	\$0	\$0	Pond LDDT_915- material to be hauled off site
Channel treatment: Vegetative cover only	yd2	17230	\$9	\$147,144	\$136,842	\$35,234	Vegetation of LDDT_915
Land Acquisition: Permanent Easement *	dollar	450340	\$1	\$450,340	\$0	\$0	Permanent easement on 3.56 acres of land valued at \$253,000/acre
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond LDDT_915
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Inlet Structure for pond LDDT_915

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$767,510	\$141,678	\$35,234
Utility Relocation			4 %	\$30,700		
Mobilization \ General Conditions			5%	\$38,376		
Subtotal with Percent Allowances				\$836,586		
Contingency			30%	\$250,976		
Profit			5%	\$54,378		
Probable Construction Cost Estimate				\$1,141,940		
Design Engineering, Geotechnical, and Construction Management			10%	\$114,194		
Property Acquisition Cost:				\$450,340		
Total Conceptual Cost Estimate				\$1,883,386		

Additional Comments

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Alternative Name	LDDT-2
Problem Description	Overbank flooding between Lucas Diversion Ditch and Roberts Road
Strategy	Detention Facilities to shave flow peak from Lucas Diversion Ditch
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	27426	\$11	\$292,910	\$0	\$0	Pond LDDT_915- excavation of 17 acre ft of additional detention
Channel treatment: Material to be hauled offsite	yd3	27426	\$12	\$322,256	\$0	\$0	Pond LDDT_915- material to be hauled off site
Channel treatment: Vegetative cover only	yd2	17230	\$9	\$147,144	\$136,842	\$35,234	Vegetation of LDDT_915
Land Acquisition: Permanent Easement *	dollar	450340	\$1	\$450,340	\$0	\$0	Permanent easement on 3.56 acres of land valued at \$253,000 / acre
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond LDDT_915
Channel treatment: Excavation	yd3	16133	\$11	\$172,300	\$0	\$0	Pond LDDT_917- 10 acre ft
Channel treatment: Material to be hauled offsite	yd3	16133	\$12	\$189,563	\$0	\$0	Pond LDDT_917, 10 acre ft hauled away
Channel treatment: Vegetative cover only	yd2	11301	\$9	\$96,511	\$89,753	\$23,110	Pond LDDT_917: topsoil & seeding
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond LDDT_917
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond LDDT_917
Pipe in earth (city): 36 inches or less	lf	90	\$217	\$19,510	\$18,144	\$0	Pond LDDT_917
Outlet structures: Concrete swale	yd2	10	\$98	\$983	\$914	\$0	Pond LDDT_917: overflow weir
Land Acquisition: Permanent Easement *	dollar	207000	\$1	\$207,000	\$0	\$0	Land acquisition of 2.3 acres valued at \$180,000/acre
Channel treatment: Excavation	yd3	58080	\$11	\$620,294	\$0	\$0	Pond LDDT_71- Excavation of 36 acre ft detention location
Channel treatment: Material to be hauled offsite	yd3	58080	\$12	\$682,440	\$0	\$0	Pond LDDT_71, 36 acre ft hauled away
Channel treatment: Vegetative cover only	yd2	30008	\$9	\$256,268	\$238,326	\$61,364	Pond LDDT_71: topsoil & seeding of 6.2 acres
Inlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	Pond LDDT_71: pipes from pond, enough for two openings
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	Pond LDDT_71: discharge pipes, enough for two openings
Pipe in earth (city): 36 inches or less	lf	180	\$217	\$39,020	\$36,288	\$0	Pond LDDT_71: twin 90ft long pipes
Land Acquisition: Permanent Easement *	dollar	334800	\$1	\$334,800	\$0	\$0	Acquisition of 6.2 acres valued at \$108,000 per acre

Alternative Name	LDDT-2
Problem Description	Overbank flooding between Lucas Diversion Ditch and Roberts Road
Strategy	Detention Facilities to shave flow peak from Lucas Diversion Ditch
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$2,857,401	\$537,195	\$119,708	
Utility Relocation			4 %	\$114,296			
Mobilization \ General Conditions			5%	\$142,870			
Subtotal with Percent Allowances				\$3,114,567			
Contingency			30%	\$934,370			
Profit			5%	\$202,447			
Probable Construction Cost Estimate				\$4,251,385			
Design Engineering, Geotechnical, and Construction Management			10%	\$425,138			
Property Acquisition Cost:				\$992,140			
Total Conceptual Cost Estimate				\$6,325,566			
Additional Comments							

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Alternative Name	LDDT-3
Problem Description	Overbank flooding between Lucas Diversion Ditch and Roberts Road
Strategy	Detention Facilities to shave flow peak from Lucas Diversion Ditch and conveyance improvement
District Minimum	Met
Criteria for Funding:	Yes
Recommended	Yes

						Maint.	Replacement	
	Unit	Quantity	Unit Cost	Base Cost	Cost	Cost	Cost	Notes/Issues
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0		Pond LDDT_915
Channel treatment: Excavation	yd3	27426	\$11	\$292,910	\$0	\$0		Pond LDDT_915- excavation of 17 acre ft of additional detention
Channel treatment: Material to be hauled offsite	yd3	27426	\$12	\$322,256	\$0	\$0		Pond LDDT_915- material to be hauled off site
Channel treatment: Vegetative cover only	yd2	17230	\$9	\$147,144	\$136,842	\$35,234		Vegetation of LDDT_915
Land Acquisition: Permanent Easement *	dollar	450340	\$1	\$450,340	\$0	\$0		Permanent easement on 3.56 acres of land valued at \$253,000 / acre
Channel treatment: Excavation	yd3	16133	\$11	\$172,300	\$0	\$0		Pond LDDT_917- 10 acre ft
Channel treatment: Material to be hauled offsite	yd3	16133	\$12	\$189,563	\$0	\$0		Pond LDDT_917, 10 acre ft hauled away
Channel treatment: Vegetative cover only	yd2	11301	\$9	\$96,511	\$89,753	\$23,110		Pond LDDT_917: topsoil & seeding
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0		Pond LDDT_917
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0		Pond LDDT_917
Pipe in earth (city): 36 inches or less	lf	90	\$217	\$19,510	\$18,144	\$0		Pond LDDT_917
Outlet structures: Concrete swale	yd2	10	\$98	\$983	\$914	\$0		Pond LDDT_917: overflow weir
Land Acquisition: Permanent Easement *	dollar	207000	\$1	\$207,000	\$0	\$0		Land acquisition of 2.3 acres valued at \$180,000/acre
Channel treatment: Excavation	yd3	58080	\$11	\$620,294	\$0	\$0		Pond LDDT_71- Excavation of 36 acre ft detention location
Channel treatment: Material to be hauled offsite	yd3	58080	\$12	\$682,440	\$0	\$0		Pond LDDT_71, 36 acre ft hauled away
Channel treatment: Vegetative cover only	yd2	30008	\$9	\$256,268	\$238,326	\$61,364		Pond LDDT_71: topsoil & seeding of 6.2 acres
Inlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0		Pond LDDT_71: pipes from pond, enough for two openings
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0		Pond LDDT_71: discharge pipes, enough for two openings
Pipe in earth (city): 36 inches or less	lf	180	\$217	\$39,020	\$36,288	\$0		Pond LDDT_71: twin 90ft long pipes
Land Acquisition: Permanent Easement *	dollar	334800	\$1	\$334,800	\$0	\$0		Acquisition of 6.2 acres valued at \$108,000 per acre

Alternative Name LDDT-3
Problem Description Overbank flooding between Lucas Diversion Ditch and Roberts Road
Strategy Detention Facilities to shave flow peak from Lucas Diversion Ditch and conveyance improvement
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
maintenance: Large Channel Maintenance	lf	1400	\$100	\$140,000	\$130,198	\$33,523	2800 ft of "medium channel maintenance"- thus reduced the quantity by half
Channel treatment: Material to be hauled offsite	yd3	2074	\$12	\$24,370	\$0	\$0	Assume removal of debris and sediment for 2800 ft x 1 ft in depth x 20 ft width
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Inlet Structure for LDDT_915

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$3,024,371	\$669,811	\$153,231	
Utility Relocation			4 %	\$120,975			
Mobilization \ General Conditions			5%	\$151,219			
Subtotal with Percent Allowances				\$3,296,565			
Contingency			30%	\$988,969			
Profit			5%	\$214,277			
Probable Construction Cost Estimate				\$4,499,811			
Design Engineering, Geotechnical, and Construction Management			10%	\$449,981			
Property Acquisition Cost:				\$992,140			
Total Conceptual Cost Estimate				\$6,764,974			

Additional Comments

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Alternative Name	LDDT-4
Problem Description	throughout LDDT & LUDT
Strategy	Detention facilities gather overflow from LDDT to shave off peak flows and reduce flooding in both creeks.
District Minimum	Met
Criteria for Funding:	No
Recommended	No

						Maint.	Replacement	
	Unit	Quantity	Unit Cost	Base Cost		Cost	Cost	Notes/Issues
Channel treatment: Material to be hauled offsite	yd3	58080	\$12	\$682,440		\$0	\$0	Pond LDDT_71, 36 acre ft hauled away
Channel treatment: Vegetative cover only	yd2	30008	\$9	\$256,268	\$238,326		\$61,364	Pond LDDT_71: topsoil & seeding of 6.2 acres
Inlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837		\$0	Pond LDDT_71: pipes from pond, enough for two openings
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837		\$0	Pond LDDT_71: discharge pipes, enough for two openings
Pipe in earth (city): 36 inches or less	lf	180	\$217	\$39,020	\$36,288		\$0	Pond LDDT_71: twin 90ft long pipes
Land Acquisition: Permanent Easement *	dollar	334800	\$1	\$334,800		\$0	\$0	acquisition of 6.2 acres at 108,000 per acre
Channel treatment: Excavation	yd3	41400	\$11	\$442,152		\$0	\$0	Pond LDDT_916 Excavation of material
Channel treatment: Material to be hauled offsite	yd3	40660	\$12	\$477,755		\$0	\$0	Pond LDDT_916: Haul away equals excavation minus berm material
Embankment construction, grading and restoration: Additional fill	yd3	740	\$14	\$10,271		\$0	\$0	Pond LDDT_916 berm placement: 1,200 ft long, top width 5 ft, 4:1 side slopes, 1.5 vertical feet above existing bank elevation.
Embankment construction, grading and restoration: Compaction of fill	yd3	740	\$5	\$3,952		\$0	\$0	Pond LDDT_916 berm compaction
Channel treatment: Vegetative cover only	yd2	30108	\$9	\$257,122	\$239,120		\$61,569	Pond LDDT_916: topsoil & seeding
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418		\$0	Pond LDDT_916
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418		\$0	LDDT_916
Pipe in earth (city): 36 inches or less	lf	95	\$217	\$20,594	\$19,152		\$0	Piping into LDDT_916
Outlet structures: Concrete swale	yd2	10	\$98	\$983	\$914		\$0	Pond LDDT_916: overflow weir
Land Acquisition: Permanent Easement *	dollar	690000	\$1	\$690,000		\$0	\$0	Pond LDDT_916, 9.2 acres for parcel including potential pond, valued at \$150,000 per acre
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418		\$0	Pond LDDT_915 Outlet Structure
Channel treatment: Excavation	yd3	27426	\$11	\$292,910		\$0	\$0	Pond LDDT_915- excavation of 17 acre ft of additional detention

Alternative Name LDDT-4
Problem Description throughout LDDT & LUDT
Strategy Detention facilities gather overflow from LDDT to shave off peak flows and reduce flooding in both creeks.
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Material to be hauled offsite	yd3	27426	\$12	\$322,256	\$0	\$0	Pond LDDT_915- material to be hauled off site
Land Acquisition: Permanent Easement *	dollar	450340	\$1	\$450,340	\$0	\$0	Permanent easement on 3.56 acres of land valued at \$253,000 / acre
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond LDDT_915
Channel treatment: Vegetative cover only	yd2	17230	\$9	\$147,144	\$136,842	\$35,234	Vegetation of LDDT_915
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond LDDT_917
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Pond LDDT_917
Pipe in earth (city): 36 inches or less	lf	90	\$217	\$19,510	\$18,144	\$0	Pond LDDT_917
Outlet structures: Concrete swale	yd2	10	\$98	\$983	\$914	\$0	Pond LDDT_917: overflow weir
Land Acquisition: Permanent Easement *	dollar	207000	\$1	\$207,000	\$0	\$0	Land acquisition of 2.3 acres valued at \$180,000 / acre
Channel treatment: Excavation	yd3	58080	\$11	\$620,294	\$0	\$0	Pond LDDT_917, 10 acre-ft
Channel treatment: Material to be hauled offsite	yd3	58080	\$12	\$682,440	\$0	\$0	Pond LDDT_917, 10 acre-ft hauled away
Pump Station: 10ac-ft per day interior drainage	each	1	\$800,000	\$800,000	\$743,988	\$0	Proposed pump station to evacuate LDDT_916

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$5,102,097	\$1,457,870	\$158,167	
Utility Relocation			4 %	\$204,084			
Mobilization \ General Conditions			5%	\$255,105			
Subtotal with Percent Allowances				\$5,561,286			
Contingency			30%	\$1,668,386			
Profit			5%	\$361,484			
Probable Construction Cost Estimate				\$7,591,156			
Design Engineering, Geotechnical, and Construction Management			10%	\$759,116			
Property Acquisition Cost:				\$1,682,140			
Total Conceptual Cost Estimate				\$11,648,448			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	LDDT-5
Problem Description	Overbank flooding between Lucas Diversion Ditch and Roberts Road
Strategy	Detention Facilities reduce peak flows in Lucas Diversion Ditch and channel clearing downstream.
District Minimum	Met
Criteria for Funding:	Met
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Land Acquisition: Permanent Easement *	dollar	207000	\$1	\$207,000	\$0	\$0	Land acquisition of 2.3 acres valued at \$180,000/acre
Channel treatment: Excavation	yd3	58080	\$11	\$620,294	\$0	\$0	Pond LDDT_71- Excavation of 36 acre ft detention location
Channel treatment: Material to be hauled offsite	yd3	58080	\$12	\$682,440	\$0	\$0	Pond LDDT_71, 36 acre ft hauled away
Channel treatment: Vegetative cover only	yd2	30008	\$9	\$256,268	\$238,326	\$61,364	Pond LDDT_71: topsoil & seeding of 6.2 acres
Inlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	Pond LDDT_71: pipes from pond, enough for two openings
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	Pond LDDT_71: discharge pipes, enough for two openings
Pipe in earth (city): 36 inches or less	lf	180	\$217	\$39,020	\$36,288	\$0	Pond LDDT_71: twin 90ft long pipes
Land Acquisition: Permanent Easement *	dollar	334800	\$1	\$334,800	\$0	\$0	Acquisition of 6.2 acres valued at \$108,000 per acre
maintenance: Large Channel Maintenance	lf	1400	\$100	\$140,000	\$130,198	\$33,523	2800 ft of "medium channel maintenance"- thus reduced the quantity by half
Channel treatment: Material to be hauled offsite	yd3	2074	\$12	\$24,370	\$0	\$0	Assume removal of debris and sediment for 2800 ft x 1 ft in depth x 20 ft width
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Inlet Structure for LDDT_915

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$1,775,394	\$416,903	\$94,887
Utility Relocation			4 %	\$71,016		
Mobilization \ General Conditions			5%	\$88,770		
Subtotal with Percent Allowances				\$1,935,180		
Contingency			30%	\$580,554		
Profit			5%	\$125,787		
Probable Construction Cost Estimate				\$2,641,520		
Design Engineering, Geotechnical, and Construction Management			10%	\$264,152		
Property Acquisition Cost:				\$541,800		
Total Conceptual Cost Estimate				\$3,959,263		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	LRCR-1
Problem Description	Long Run Creek overbank flooding just near Will-Cook road
Strategy	Construct levee along Long Run Creek near 139th and Will Cook - Raise bank elevation to keep flow in
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Embankment construction, grading and restoration: Material hauled from offsite	yd3	1000	\$11	\$10,680	\$0	\$0	Levee construction assuming 4ft height, 3ft top width, and 3:1 side slope. Length (450ft) approximated with GIS.
Embankment construction, grading and restoration: Compaction of fill	yd3	1000	\$5	\$5,340	\$0	\$0	Place fill for levee
Embankment construction, grading and restoration: Compaction of fill	yd3	1000	\$5	\$5,340	\$0	\$0	Compact levee material
Channel treatment: Vegetative cover only	yd2	1415	\$9	\$12,084	\$11,238	\$2,894	Seed levee surface
Land Acquisition: Purchase of Property *	dollar	26031	\$1	\$26,031	\$0	\$0	0.09 acres required at \$289,236/acre
Channel treatment: Excavation	yd3	4455	\$11	\$47,579	\$0	\$0	Volume calculated using GIS length approximation, 3:1 slopes (H:V) and depth of 7ft (using 685ft as bottom elevation).
Channel treatment: Material to be hauled offsite	yd3	4455	\$12	\$52,346	\$0	\$0	
Channel treatment: Soil stabilization and vegetative cover	yd2	1905	\$14	\$26,441	\$24,590	\$6,331	
Land Acquisition: Permanent Easement *	dollar	115694	\$1	\$115,694	\$0	\$0	Aquire land north of Long Run Creek. 0.4 acres required at \$289,236/acre

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$159,811	\$35,828	\$9,225
Utility Relocation			4 %	\$6,392		
Mobilization \ General Conditions			5%	\$7,991		
Subtotal with Percent Allowances				\$174,194		
Contingency			30%	\$52,258		
Profit			5%	\$11,323		
Probable Construction Cost Estimate				\$237,775		
Design Engineering, Geotechnical, and Construction Management			10%	\$23,778		
Property Acquisition Cost:				\$141,725		
Total Conceptual Cost Estimate				\$448,331		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Table X-X Total Conceptual Cost Report

Alternative Name	LRCR-5
Problem Description	143rd road flooded
Strategy	raise road to prevent flooding and include culvert and weir to keep hydraulics of stream the same.
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Demolition: Brick, concrete, or stone construction	ft2	1070	\$4	\$4,569	\$0	\$0	1010 of roadway length at 1 deep and culvert area (60)
Embankment construction, grading and restoration: Additional fill	yd3	5413	\$14	\$75,132	\$0	\$0	1010 of roadway length, 24 wide and 4 of additional depth plus an additional amount of fill for a 3V:1H side slope along both sides and additional amount for culvert. culvert = 2x 15x24
Embankment construction, grading and restoration: Compaction of fill	yd3	5413	\$5	\$28,905	\$0	\$0	1010 of roadway length, 24 wide and 4 of additional depth plus an additional amount of fill for a 3V:1H side slope along both sides and additional amount for culvert. culvert = 2x 15x24
Embankment construction, grading and restoration: Material hauled from offsite	yd3	5413	\$11	\$57,811	\$0	\$0	1010 of roadway length, 24 wide and 4 of additional depth plus an additional amount of fill for a 3V:1H side slope along both sides and additional amount for culvert. culvert = 2x 15x24
Paving: Asphalt Pavement Installation (24 ft wide, 2 ft C&G, 1 ft Excavation	lf	1010	\$148	\$149,955	\$139,456	\$0	2 lane rd. 1010 long
Pipe under pavement (county): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	98	\$609	\$59,653	\$55,476	\$0	Two 49 LF 7.5 by 5 culverts side by side.
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	DS headwall for box culvert
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	US headwall for box culvert
Concrete: Cast in place	yd3	9	\$250	\$2,125	\$0	\$0	weir 2 deep, 25 wide, 4.72 tall with 2 2 diameter orifices

Alternative Name LRCR-5
Problem Description 143rd road flooded
Strategy raise road to preventflooding and include culvert and weir to keep hydraulics of stream the same.
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$397,180	\$212,629	\$0	
Utility Relocation			4 %	\$15,887			
Mobilization \ General Conditions			5%	\$19,859			
Subtotal with Percent Allowances				\$432,926			
Contingency			30%	\$129,878			
Profit			5%	\$28,140			
Probable Construction Cost Estimate				\$590,944			
Design Engineering, Geotechnical, and Construction Management			10%	\$59,094			
Property Acquisition Cost:					\$0		
Total Conceptual Cost Estimate				\$862,668			
Additional Comments							

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	LUDT-1
Problem Description	Shallow flooding north of 103rd Street between Lucas Ditch and Lucas Diversion Ditch
Strategy	Excavated storage on Hickory Hills Golf Course to reduce discharge to Roberts Road Storm Sewer / Lucas
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	283688	\$11	\$3,029,788	\$0	\$0	7 acre site excavated to bottom elevation of 614
Embankment construction, grading and restoration: Material hauled from offsite	yd3	283688	\$11	\$3,029,788	\$0	\$0	7 acre site excavated to bottom elevation of 614
Channel treatment: Vegetative cover only	yd2	33880	\$9	\$289,335	\$269,077	\$69,282	7 acre of vegetative cover
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	
Pipe in earth (city): 42 to 66 inches / box culvert (15 to 27 ft2)	lf	120	\$208	\$24,989	\$23,239	\$0	Pipe connecting storage area to overland flow route to Roberts Road Sewer
Land Acquisition: Purchase of Property *	dollar	1771000	\$1	\$1,771,000	\$0	\$0	7 acres @ 253,000 dollars per acre
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Inlet structure for detention basin

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$6,381,701	\$299,571	\$69,282
Utility Relocation			4 %	\$255,268		
Mobilization \ General Conditions			5 %	\$319,085		
Subtotal with Percent Allowances				\$6,956,054		
Contingency			30%	\$2,086,816		
Profit			5%	\$452,143		
Probable Construction Cost Estimate				\$9,495,013		
Design Engineering, Geotechnical, and Construction Management			10%	\$949,501		
Property Acquisition Cost:				\$1,771,000		
Total Conceptual Cost Estimate				\$12,584,368		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	LUDT-2
Problem Description	Shallow flooding north of 103rd Street between Lucas Ditch and Lucas Diversion Ditch
Strategy	Impounded storage on Hickory Hills Golf Course to reduce discharge to Roberts Road Storm Sewer / Lucas
District Minimum	Met
Criteria for Funding:	No
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	13000	\$11	\$138,840	\$0	\$0	Excavate berm material in proposed storage area to provide additional storage
Channel treatment: Compaction	yd3	13000	\$7	\$97,240	\$0	\$0	Compaction of berm
Channel treatment: Vegetative cover only	yd2	14520	\$9	\$124,001	\$115,319	\$29,692	Revegetation of 3 acre excavated area
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	Double pipe exiting reservoir
Pipe in earth (city): 42 to 66 inches / box culvert (15 to 27 ft2)	lf	120	\$208	\$24,989	\$23,239	\$0	Pipe connecting flow to overland flow route to Roberts Road Sewer
Land Acquisition: Purchase of Property *	dollar	3289000	\$1	\$3,289,000	\$0	\$0	13 acres @ \$253,000 dollars per acre
Channel treatment: Vegetative cover only	yd2	6000	\$9	\$51,240	\$47,652	\$12,270	600 ft long; 42 ft wide on the 1:3 side slopes and 6 ft wide on the top of the embankment
Concrete: Cast in place	yd3	33	\$250	\$8,333	\$0	\$0	Concrete spillway: 50 ft in length by 6 ft in width by 3 ft in depth
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	Inlet structure outlet pipe from storage area

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$459,358	\$199,896	\$41,962
Utility Relocation			4 %	\$18,374		
Mobilization \ General Conditions			5%	\$22,968		
Subtotal with Percent Allowances				\$500,700		
Contingency			30%	\$150,210		
Profit			5%	\$32,546		
Probable Construction Cost Estimate				\$683,455		
Design Engineering, Geotechnical, and Construction Management			10%	\$68,346		
Property Acquisition Cost:				\$3,289,000		
Total Conceptual Cost Estimate				\$4,282,659		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	LUDT-3
Problem Description	Lucas Ditch Overbank Flooding
Strategy	Diversion conduit to increase conveyance to Stony Creek. Construct 28 ac-ft of storage to mitigate
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Pipe under pavement (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	1240	\$609	\$754,849	\$701,998	\$0	96"Pipe along 83rd Ave
Pipe in earth (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	1560	\$435	\$678,038	\$630,565	\$0	96" Pipe along Palos Drive
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$7,136	\$6,637	\$0	Outlet structure to Stony Creek; 96" item not available; markup via quantity
Channel treatment: Excavation	yd3	2647	\$11	\$28,270	\$0	\$0	Assume that elevations above 594 ft require excess excavation; calculate south of 107th street assuming 10 ft wide cut
Channel treatment: Compaction	yd3	2647	\$7	\$19,800	\$0	\$0	Assume that elevations above 594 ft are excavated and then compacted; calculate south of 107th street assuming 10 ft wide cut
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$7,136	\$6,637	\$0	Inlet for Diversion Conduit
Land Acquisition: Permanent Easement *	dollar	16500	\$1	\$16,500	\$0	\$0	1600 ft x 60 ft easement for pipe (2.2 acre). Adjacent undeveloped land value = \$14,972 / acre
Land Acquisition: Permanent Easement *	dollar	600000	\$1	\$600,000	\$0	\$0	Permanent easement of 4 acres valued based upon nearby property value of \$300,000 / acre
Channel treatment: Excavation	yd3	45173	\$11	\$482,448	\$0	\$0	Excavation of 28 ac ft of storage
Channel treatment: Material to be hauled offsite	yd3	45173	\$12	\$530,783	\$0	\$0	Haul excavated materials offsite
Channel treatment: Vegetative cover only	yd2	19360	\$9	\$165,334	\$153,758	\$39,590	Vegetative cover on 4 acre excavated area for detention
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Inlet structure for pipe connecting Stony Creek to detention Pond
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Outlet structure for pipe connecting Stony Creek to detention Pond
Pipe in earth (city): 36 inches or less	lf	315	\$217	\$68,286	\$63,505	\$0	36" pipe connecting flow from STCR to detention pond

Alternative Name LUDT-3
Problem Description Lucas Ditch Overbank Flooding
Strategy Diversion conduit to increase conveyance to Stony Creek. Construct 28 ac-ft of storage to mitigate
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$2,747,280	\$1,567,936	\$39,590	
Utility Relocation			4 %	\$109,891			
Mobilization \ General Conditions			5%	\$137,364			
Subtotal with Percent Allowances				\$2,994,536			
Contingency			30%	\$898,361			
Profit			5%	\$194,645			
Probable Construction Cost Estimate				\$4,087,541			
Design Engineering, Geotechnical, and Construction Management			10%	\$408,754			
Property Acquisition Cost:				\$616,500			
Total Conceptual Cost Estimate				\$6,720,321			
Additional Comments							Increased conveyance to STCR- requires implementation with STCR storage alt

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	LUDT-4
Problem Description	Shallow flooding north of 103rd street between Lucas Ditch and Lucas Diversion Ditch.
Strategy	Storage in the portion of Lucas Ditch watershed tributary to Roberts Road, combined with a 96" diversion
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	13000	\$11	\$138,840	\$0	\$0	Excavate fill for earthen berm to impound area west of 82nd Ave. Excavated material provides approximately 8 ac-ft of additional storage
Channel treatment: Compaction	yd3	13000	\$7	\$97,240	\$0	\$0	Compact soil to form earthen berm with top elevation of 637 ft. 6 ft wide at top with 3:1 side slopes
Channel treatment: Vegetative cover only	yd2	6000	\$9	\$51,240	\$47,652	\$12,270	600 ft long; 42 ft wide on the bottom, 1:3 side slopes and 6 ft wide on the top of the embankment
Channel treatment: Vegetative cover only	yd2	14520	\$9	\$124,001	\$115,319	\$29,692	vegetative stabilization of 3 acre excavation area
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	Outlet structure from reservoir to overland flow route
Pipe in earth (city): 42 to 66 inches / box culvert (15 to 27 ft2)	lf	120	\$208	\$24,989	\$23,239	\$0	Pipe connecting flow to overland flow route to Roberts Road Sewer
Land Acquisition: Purchase of Property *	dollar	3289000	\$1	\$3,289,000	\$0	\$0	13 acres \$ 253,000 dollars per acre for property on Hickory Hills golf course
Concrete: Cast in place	yd3	33	\$250	\$8,333	\$0	\$0	Concrete spillway: 50 ft in length by 6 ft in width by 3 ft in depth
Pipe under pavement (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	1240	\$609	\$754,788	\$701,941	\$0	96" Pipe along 83rd Ave
Pipe in earth (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	1560	\$435	\$678,038	\$630,565	\$0	96" Pipe along Palos Drive
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$7,136	\$6,637	\$0	Outlet structure to Stony Creek; 96" item not available; markup via quantity
Channel treatment: Excavation	yd3	2647	\$11	\$28,270	\$0	\$0	Assume that elevations above 594 ft require excess excavation; calculate south of 107th street assuming 10 ft wide cut

Alternative Name LUDT-4
Problem Description Shallow flooding north of 103rd street between Lucas Ditch and Lucas Diversion Ditch.
Strategy Storage in the portion of Lucas Ditch watershed tributary to Roberts Road, combined with a 96" diversion
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Compaction	yd3	2647	\$7	\$19,800	\$0	\$0	Assume that elevations above 594 ft are excavated and then compacted; calculate south of 107th street assuming 10 ft wide cut
Land Acquisition: Permanent Easement *	dollar	16500	\$1	\$16,500	\$0	\$0	1600 ft x 60 ft easement for pipe (2.2 acre). Adjacent undeveloped land value = \$14,972 / acre
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$7,136	\$6,637	\$0	Inlet for diversion conduit
Inlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	Inlet structure for outlet from detention area

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$1,950,212	\$1,541,663	\$41,962	
Utility Relocation			4 %	\$78,008			
Mobilization \ General Conditions			5%	\$97,511			
Subtotal with Percent Allowances				\$2,125,731			
Contingency			30%	\$637,719			
Profit			5%	\$138,173			
Probable Construction Cost Estimate				\$2,901,623			
Design Engineering, Geotechnical, and Construction Management			10%	\$290,162			
Property Acquisition Cost:				\$3,305,500			
Total Conceptual Cost Estimate				\$8,080,910			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Table X-X Total Conceptual Cost Report

Alternative Name	LUDT-5
Problem Description	Flooding of properties near confluence of Lucas Ditch
Strategy	Build levee with 3' freeboard to restrict floodwaters from inundating structures near Stony Creek confluence
District Minimum	Met
Criteria for Funding:	Yes
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Embankment construction, grading and restoration: Additional fill	yd3	584	\$14	\$8,106	\$0	\$0	Embankment Construction along STCR/LUDT
Embankment construction, grading and restoration: Compaction of fill	yd3	584	\$5	\$3,119	\$0	\$0	Embankment Construction along east bank of LUDT near confluence
Embankment construction, grading and restoration: Material hauled from offsite	yd3	584	\$11	\$6,237	\$0	\$0	Embankment Construction along east bank of LUDT near confluence
Land Acquisition: Permanent Easement *	dollar	51652	\$1	\$51,652	\$0	\$0	Permanent Easement: 600 ft long by 50 ft wide estimated at \$150,00 / acre
Channel treatment: Excavation	yd3	15327	\$11	\$163,692	\$0	\$0	Construction of 9.5 ac-ft detention pond to offset lost floodplain storage
Channel treatment: Material to be hauled offsite	yd3	15327	\$12	\$180,092	\$0	\$0	Construction of 9.5 ac-ft detention pond to offset lost floodplain storage
Channel treatment: Vegetative cover only	yd2	18392	\$9	\$157,068	\$146,071	\$37,610	Cover for approximately 3.8 acres of detention
Pump Station: 10ac-ft per day interior drainage	each	1	\$800,000	\$800,000	\$743,988	\$0	Pump Station- 2 20 hp pumps for interior drainage behind levee

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$1,318,314	\$890,058	\$37,610
Utility Relocation			4 %	\$52,733		
Mobilization \ General Conditions			5%	\$65,916		
Subtotal with Percent Allowances				\$1,436,962		
Contingency			30%	\$431,089		
Profit			5%	\$93,403		
Probable Construction Cost Estimate				\$1,961,453		
Design Engineering, Geotechnical, and Construction Management			10%	\$196,145		
Property Acquisition Cost:				\$51,652		
Total Conceptual Cost Estimate				\$3,136,919		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	LUDT-6
Problem Description	Lucas Ditch Overbank Flooding
Strategy	Diversion conduit to increase conveyance to Stony Creek combined with dredging upstream of 103rd Street
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Pipe under pavement (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	1240	\$609	\$754,849	\$701,998	\$0	96"Pipe along 83rd Ave
Pipe in earth (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	1560	\$435	\$678,038	\$630,565	\$0	96" Pipe along Palos Drive
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$7,136	\$6,637	\$0	Outlet structure to Stony Creek; 96" item not available; markup via quantity
Channel treatment: Excavation	yd3	2647	\$11	\$28,270	\$0	\$0	Assume that elevations above 594 ft require excess excavation; calculate south of 107th street assuming 10 ft wide cut
Channel treatment: Compaction	yd3	2647	\$7	\$19,800	\$0	\$0	Assume that elevations above 594 ft are excavated and then compacted; calculate south of 107th street assuming 10 ft wide cut
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$7,136	\$6,637	\$0	Inlet for Diversion Conduit
Land Acquisition: Permanent Easement *	dollar	16500	\$1	\$16,500	\$0	\$0	1600 ft x 60 ft easement for pipe (2.2 acre). Adjacent undeveloped land value = \$14,972 / acre
Channel treatment: Excavation	yd3	2074	\$11	\$22,150	\$0	\$0	Dredging of creek- 2800 ft by 20 ft by 1 ft in depth
Channel treatment: Material to be hauled offsite	yd3	2074	\$12	\$24,370	\$0	\$0	Haul dredged material from site
maintenance: Small Channel Maintenance (Brush and debris removal)	lf	2800	\$5	\$14,000	\$13,020	\$3,352	removal of debris along dredged area
Channel treatment: Vegetative cover only	yd2	3111	\$9	\$26,568	\$24,708	\$6,362	revegetation along dredged area. 2800 ft by 10 ft
Land Acquisition: Permanent Easement *	dollar	600000	\$1	\$600,000	\$0	\$0	Permanent easement of 4 acres valued based upon nearby property value of \$300,000 / acre
Channel treatment: Excavation	yd3	45173	\$11	\$482,448	\$0	\$0	Excavation of 28 ac ft of storage
Channel treatment: Material to be hauled offsite	yd3	45173	\$12	\$530,783	\$0	\$0	Haul excavated materials offsite
Channel treatment: Vegetative cover only	yd2	19360	\$9	\$165,334	\$153,758	\$39,590	Vegetative cover on 4 acre excavated area for detention

Alternative Name LUDT-6
Problem Description Lucas Ditch Overbank Flooding
Strategy Diversion conduit to increase conveyance to Stony Creek combined with dredging upstream of 103rd Street
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Inlet structure for pipe connecting Stony Creek to detention Pond
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Outlet structure for pipe connecting Stony Creek to detention Pond
Pipe in earth (city): 36 inches or less	lf	315	\$217	\$68,286	\$63,505	\$0	36" pipe connecting flow from STCR to detention pond

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$2,834,368	\$1,605,664	\$49,304	
Utility Relocation			4 %	\$113,375			
Mobilization \ General Conditions			5%	\$141,718			
Subtotal with Percent Allowances				\$3,089,461			
Contingency			30%	\$926,838			
Profit			5%	\$200,815			
Probable Construction Cost Estimate				\$4,217,115			
Design Engineering, Geotechnical, and Construction Management			10%	\$421,711			
Property Acquisition Cost:				\$616,500			
Total Conceptual Cost Estimate				\$6,910,294			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	LUDT-7
Problem Description	Shallow flooding north of 103rd Street between Lucas Ditch and Lucas Diversion Ditch
Strategy	Impounded storage on Hickory Hills Golf Course to reduce discharge to Roberts Road Storm Sewer / Lucas
District Minimum	Met
Criteria for Funding:	Yes
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	13000	\$11	\$138,840	\$0	\$0	Excavate berm material in proposed storage area to provide additional storage
Channel treatment: Compaction	yd3	13000	\$7	\$97,240	\$0	\$0	Compaction of berm
Channel treatment: Vegetative cover only	yd2	14520	\$9	\$124,001	\$115,319	\$29,692	Revegetation of 3 acre excavated area
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	Double pipe exiting reservoir
Pipe in earth (city): 42 to 66 inches / box culvert (15 to 27 ft2)	lf	120	\$208	\$24,989	\$23,239	\$0	Pipe connecting flow to overland flow route to Roberts Road Sewer
Land Acquisition: Purchase of Property *	dollar	3289000	\$1	\$3,289,000	\$0	\$0	13 acres @ \$253,000 dollars per acre
Channel treatment: Vegetative cover only	yd2	6000	\$9	\$51,240	\$47,652	\$12,270	600 ft long; 42 ft wide on the bottom, 1:3 side slopes and 6 ft wide on the top of the embankment
Concrete: Cast in place	yd3	33	\$250	\$8,333	\$0	\$0	Concrete spillway: 50 ft in length by 6 ft in width by 3 ft in depth
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	Inlet structure outlet pipe from storage area
Channel treatment: Excavation	yd3	2074	\$11	\$22,150	\$0	\$0	Dredging of creek- 2800 ft by 20 ft by 1 ft in depth
Channel treatment: Material to be hauled offsite	yd3	2074	\$12	\$24,370	\$0	\$0	Haul dredged material from site
maintenance: Small Channel Maintenance (Brush and debris removal)	lf	2800	\$5	\$14,000	\$13,020	\$3,352	removal of debris along dredged area
Channel treatment: Vegetative cover only	yd2	3111	\$9	\$26,568	\$24,708	\$6,362	revegetation along dredged area. 2800 ft by 10 ft

Alternative Name	LUDT-7
Problem Description	Shallow flooding north of 103rd Street between Lucas Ditch and Lucas Diversion Ditch
Strategy	Impounded storage on Hickory Hills Golf Course to reduce discharge to Roberts Road Storm Sewer / Lucas
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$546,446	\$237,623	\$51,676	
Utility Relocation			4 %	\$21,858			
Mobilization \ General Conditions			5%	\$27,322			
Subtotal with Percent Allowances				\$595,626			
Contingency			30%	\$178,688			
Profit			5%	\$38,716			
Probable Construction Cost Estimate				\$813,029			
Design Engineering, Geotechnical, and Construction Management			10%	\$81,303			
Property Acquisition Cost:				\$3,289,000			
Total Conceptual Cost Estimate				\$4,472,631			
Additional Comments							

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name MACR-1
Problem Description
Strategy 117 ac-ft detention basin
District Minimum
Criteria for Funding: Met
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	257232	\$11	\$2,747,238	\$0	\$0	17 acre area footprint of top of pond, 10 ft deep, with side slopes of 4:1. Additional 19.7 ac-ft of excavation needed on west side to slope down to detention basin
Channel treatment: Material to be hauled offsite	yd3	257129	\$12	\$3,021,266	\$0	\$0	excavated material minus material used for embankment
Embankment construction, grading and restoration: Compaction of fill	yd3	103	\$5	\$550	\$0	\$0	build up berm on east side 127 LF, 4:1 slope, top width of 3 ft, 2 ft high
Embankment construction, grading and restoration: Material hauled from offsite	yd3	0	\$11	\$0	\$0	\$0	used material from excavation
Pipe in earth (city): 36 inches or less	lf	30	\$217	\$6,503	\$6,048	\$0	outlet/inlet pipe, 3ft diameter
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	US headwall
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	DS headwall
Channel treatment: Soil stabilization and vegetative cover	yd2	18842	\$14	\$261,527	\$243,216	\$62,623	Perimeter of 4100 ft, width of 40 ft of vegetated area
Land Acquisition: Purchase of Property *	dollar	5780000	\$1	\$5,780,000	\$0	\$0	17 acres at \$340,000/acre

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$6,042,285	\$254,101	\$62,623
Utility Relocation			4 %	\$241,691		
Mobilization \ General Conditions			5%	\$302,114		
Subtotal with Percent Allowances				\$6,586,090		
Contingency			30%	\$1,975,827		
Profit			5%	\$428,096		
Probable Construction Cost Estimate				\$8,990,013		
Design Engineering, Geotechnical, and Construction Management			10%	\$899,001		
Property Acquisition Cost:				\$5,780,000		
Total Conceptual Cost Estimate				\$15,985,738		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	MEDT-1
Problem Description	Erosion threatening structure, infrastructure, and channel banks along Melvina Ditch
Strategy	Combination of hard and soft armoring to address erosion problem
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Reinforced one sided concrete wall	yd3	900	\$587	\$528,615	\$491,604	\$126,578	2700 ft length, 8 inch thick concrete wall and 13.5 ft high channel on west side of the channel
Channel treatment: Excavation	yd3	3200	\$11	\$34,176	\$0	\$0	Excavation of west channel to allow construction of vertical wall embedded in the west bank
Channel treatment: Compaction	yd3	2400	\$7	\$17,952	\$0	\$0	75 % of fill excavated channel material placed back in channel following construction of concrete walls
Channel treatment: Material to be hauled offsite	yd3	800	\$12	\$9,400	\$0	\$0	Hauling of excess extracted material from site
Channel treatment: Biostabilization	yd2	2700	\$64	\$172,989	\$160,877	\$41,423	Assume half of the east bank of Melvina Ditch can be secured using biostabilization only
Channel treatment: Reno gabions	yd3	900	\$267	\$240,282	\$223,459	\$57,536	Assume half of the east bank of Melvina Ditch can be secured using reno gabions (1 ft x 1350 ft x 18 ft)
Channel treatment: Excavation	yd3	900	\$11	\$9,612	\$0	\$0	Excavation of 1 ft along half of the east bank
Channel treatment: Material to be hauled offsite	yd3	900	\$12	\$10,575	\$0	\$0	Hauling of Excavated land from site
Channel treatment: Vegetative cover only	yd2	3244	\$9	\$27,704	\$25,764	\$6,634	Revegetation of the portion of the channel excavated on west bank of channel

Alternative Name MEDT-1
Problem Description Erosion threatening structure, infrastructure, and channel banks along Melvina Ditch
Strategy Combination of hard and soft armoring to address erosion problem
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$1,051,305	\$901,704	\$232,171	
Utility Relocation			4 %	\$42,052			
Mobilization \ General Conditions			5%	\$52,565			
Subtotal with Percent Allowances				\$1,145,922			
Contingency			30%	\$343,777			
Profit			5%	\$74,485			
Probable Construction Cost Estimate				\$1,564,184			
Design Engineering, Geotechnical, and Construction Management			10%	\$156,418			
Property Acquisition Cost:					\$0		
Total Conceptual Cost Estimate				\$2,854,477			
Additional Comments							

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	MEDT-2
Problem Description	Road and structures at risk due to erosion
Strategy	Enclose Melvina Ditch in double barrel 102" sewer
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	1684	\$11	\$17,985	\$0	\$0	The difference between the 2-102 inch pipes with 1.5 feet clearance on each side between the trench wall and the pipe and 1 foot separation between the two pipes.
Pipe in earth (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	5600	\$435	\$2,433,984	\$2,263,568	\$0	Twin 102" pipes installed in existing Melvina Ditch
Outlet structures (Headwall): 42 to 66 inches	each	4	\$4,758	\$19,030	\$17,698	\$0	Twin 102" pipes must be made to join with with existing bridge crossing 99th Street
Embankment construction, grading and restoration: Material hauled from offsite	yd3	20591	\$11	\$219,912	\$0	\$0	Assume 2800 ft of channel 12 ft wide at bottom, 40 at top. Subtract area of pipes, and subtract the excavated material on either side of the pipes
Channel treatment: Additional fill	yd3	20591	\$14	\$285,803	\$0	\$0	Assume 2800 ft of channel 12 ft wide at bottom, 40 at top. Subtract area of pipes, and subtract the excavated material on either side of the pipes
Channel treatment: Compaction	yd3	18907	\$7	\$141,424	\$0	\$0	Compaction of material above newly placed pipes
Channel treatment: Vegetative cover only	yd2	14311	\$9	\$122,216	\$113,659	\$29,265	46 feet wide, 2800 feet long. Includes a buffer outside of the existing channel.
Channel treatment: Dumped rock	yd3	82	\$67	\$5,517	\$5,131	\$1,321	Riprap placed 22 ft long, 2 ft deep, 50 ft long on downstream side of 99th street crossing as erosion protection

Alternative Name MEDT-2
Problem Description Road and structures at risk due to erosion
Strategy Enclose Melvina Ditch in double barrel 102" sewer
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$3,245,871	\$2,400,055	\$30,586	
Utility Relocation			4 %	\$129,835			
Mobilization \ General Conditions			5%	\$162,294			
Subtotal with Percent Allowances				\$3,538,000			
Contingency			30%	\$1,061,400			
Profit			5%	\$229,970			
Probable Construction Cost Estimate				\$4,829,370			
Design Engineering, Geotechnical, and Construction Management			10%	\$482,937			
Property Acquisition Cost:					\$0		
Total Conceptual Cost Estimate				\$7,742,948			
Additional Comments							

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	MICR-1
Problem Description	
Strategy	Multiple detention ponds and conveyance increase
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Vegetative cover only	yd2	6684	\$9	\$57,085	\$53,088	\$13,669	3760 ft perimeter times 16 ft width for south pond
Channel treatment: Excavation	yd3	165303	\$11	\$1,765,436	\$0	\$0	South pond
Channel treatment: Material to be hauled offsite	yd3	82280	\$12	\$966,790	\$0	\$0	South pond; assume half of excavation hauled offsite
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	South pond outlet structure
Pipe under pavement (city): 36 inches or less	lf	500	\$304	\$152,175	\$141,520	\$0	2 - 4 ft diameter pipes from outlet of south pond to discharge point on Mill Creek tributary
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	840	\$425	\$357,017	\$332,020	\$0	Pipes at inlet to south pond
Land Acquisition: Purchase of Property *	dollar	1639256	\$1	\$1,639,256	\$0	\$0	For south pond
Pipe under pavement (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	1060	\$609	\$645,222	\$600,047	\$0	Replace 7 culverts along Southwest Highway with 5-ft x 10-ft box culverts
Channel treatment: Vegetative cover only	yd2	3555	\$9	\$30,360	\$28,234	\$7,270	2000 ft perimeter times 16 ft width for north pond
Channel treatment: Excavation	yd3	95582	\$11	\$1,020,816	\$0	\$0	For north pond
Channel treatment: Material to be hauled offsite	yd3	47590	\$12	\$559,183	\$0	\$0	For north pond; assume half of spoil must be hauled away
Channel treatment: Compaction	yd3	82280	\$7	\$615,454	\$0	\$0	For south pond; assume half of spoil can remain on site
Channel treatment: Compaction	yd3	47590	\$7	\$355,973	\$0	\$0	For north pond; assume half of spoil can remain on site
Pipe under pavement (city): 36 inches or less	lf	55	\$304	\$16,739	\$15,567	\$0	North pond outlet pipe
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	140	\$425	\$59,503	\$55,337	\$0	North pond inlet pipe
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	North pond outlet structure
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	South pond inlet structure
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	North pond inlet structure
Land Acquisition: Purchase of Property *	dollar	451930	\$1	\$451,930	\$0	\$0	For north pond

Alternative Name MICR-1
Problem Description
Strategy Multiple detention ponds and conveyance increase
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Inlet structures (Headwall): 42 to 66 inches	each	14	\$4,758	\$66,605	\$61,942	\$0	Replace 7 culverts along Southwest Highway with 5-ft x 10-ft box culverts; assumed two inlet structures per culvert to account for larger size needed
Outlet structures (Headwall): 42 to 66 inches	each	14	\$4,758	\$66,605	\$61,942	\$0	Replace 7 culverts along Southwest Highway with 5-ft x 10-ft box culverts; assumed two inlet structures per culvert to account for larger size needed

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$6,757,036	\$1,370,225	\$20,939
Utility Relocation			4 %	\$270,281		
Mobilization \ General Conditions			5%	\$337,852		
Subtotal with Percent Allowances				\$7,365,169		
Contingency			30%	\$2,209,551		
Profit			5%	\$478,736		
Probable Construction Cost Estimate				\$10,053,456		
Design Engineering, Geotechnical, and Construction Management			10%	\$1,005,346		
Property Acquisition Cost:				\$2,091,186		
Total Conceptual Cost Estimate				\$14,541,152		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	MICR-2
Problem Description	
Strategy	Construct levee to protecting houses and construct compensatory storage
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Embankment construction, grading and restoration: Additional fill	yd3	2333	\$14	\$32,387	\$0	\$0	6ft high, 3:1 slope, 3ft top width, 500 length
Embankment construction, grading and restoration: Compaction of fill	yd3	2333	\$5	\$12,460	\$0	\$0	6ft high, 3:1 slope, 3ft top width, 500 length
Embankment construction, grading and restoration: Material hauled from offsite	yd3	2333	\$11	\$24,920	\$0	\$0	6ft high, 3:1 slope, 3ft top width, 500 length
Channel treatment: Vegetative cover only	yd2	2275	\$9	\$19,427	\$18,067	\$4,652	6ft high, 3:1 slope, 3ft top width, 500 length
Land Acquisition: Purchase of Property *	dollar	71582	\$1	\$71,582	\$0	\$0	500 of length, footprint of 19,500 ft.
Channel treatment: Vegetative cover only	yd2	3794	\$9	\$32,400	\$30,131	\$7,758	1030ft top perimeter, 10ft deep
Channel treatment: Excavation	yd3	26577	\$11	\$283,845	\$0	\$0	
Channel treatment: Material to be hauled offsite	yd3	26577	\$12	\$312,282	\$0	\$0	16.08 acre storage plus excavation to get down to that level.
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	12in diameter pipe
Inlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	12in diameter pipe
Pipe in earth (city): 36 inches or less	lf	190	\$217	\$41,188	\$38,304	\$0	12in diameter pipe
Land Acquisition: Purchase of Property *	dollar	115510	\$1	\$115,510	\$0	\$0	2.13 acres of land for detention at \$54230/acre
Wetland: Construct / Mitigate wetland outside Des Plaines watershed	acre	3	\$60,000	\$180,000	\$167,397	\$0	

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)		\$944,109	\$258,736	\$12,410
Utility Relocation	4 %	\$37,764		
Mobilization \ General Conditions	5%	\$47,205		
Subtotal with Percent Allowances		\$1,029,079		
Contingency	30%	\$308,724		
Profit	5%	\$66,890		
Probable Construction Cost Estimate		\$1,404,692		
Design Engineering, Geotechnical, and Construction Management	10%	\$140,469		
Property Acquisition Cost:		\$187,092		
Total Conceptual Cost Estimate		\$2,003,400		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name MICR-4
Problem Description
Strategy Multiple detention ponds and conveyance increase
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Pipe under pavement (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	1060	\$609	\$645,222	\$600,047	\$0	Replace 7 culverts along Southwest Highway with 5-ft x 10-ft box culverts
Channel treatment: Vegetative cover only	yd2	3555	\$9	\$30,360	\$28,234	\$7,270	2000 ft perimeter times 16 ft width for north pond
Channel treatment: Excavation	yd3	95582	\$11	\$1,020,816	\$0	\$0	For north pond
Channel treatment: Material to be hauled offsite	yd3	47590	\$12	\$559,183	\$0	\$0	For north pond; assume half of spoil must be hauled away
Channel treatment: Compaction	yd3	47590	\$7	\$355,973	\$0	\$0	For north pond; assume half of spoil can remain on site
Pipe under pavement (city): 36 inches or less	lf	55	\$304	\$16,739	\$15,567	\$0	North pond outlet pipe
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	140	\$425	\$59,503	\$55,337	\$0	North pond inlet pipe
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	North pond outlet structure
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	North pond inlet structure
Land Acquisition: Purchase of Property *	dollar	451930	\$1	\$451,930	\$0	\$0	For north pond
Inlet structures (Headwall): 42 to 66 inches	each	14	\$4,758	\$66,605	\$61,942	\$0	Replace 7 culverts along Southwest Highway with 5-ft x 10-ft box culverts; assumed two inlet structures per culvert to account for larger size needed
Outlet structures (Headwall): 42 to 66 inches	each	14	\$4,758	\$66,605	\$61,942	\$0	Replace 7 culverts along Southwest Highway with 5-ft x 10-ft box culverts; assumed two inlet structures per culvert to account for larger size needed

Alternative Name MICR-4
Problem Description
Strategy Multiple detention ponds and conveyance increase
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$2,828,363	\$829,911	\$7,270	
Utility Relocation			4 %	\$113,135			
Mobilization \ General Conditions			5%	\$141,418			
Subtotal with Percent Allowances				\$3,082,916			
Contingency			30%	\$924,875			
Profit			5%	\$200,390			
Probable Construction Cost Estimate				\$4,208,180			
Design Engineering, Geotechnical, and Construction Management			10%	\$420,818			
Property Acquisition Cost:				\$451,930			
Total Conceptual Cost Estimate				\$5,918,108			
Additional Comments							

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name NVCR-11
Problem Description Overbank flooding along Navajo Creek
Strategy Harlem Ave and Oak Park Ave Diversion Conduits in combination
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	3700	\$425	\$1,572,574	\$1,462,470	\$0	Oak Park Ave, 3700 LF, 6 ft diameter RCP
Inlet structures (Headwall): 42 to 66 inches	each	4	\$4,758	\$19,030	\$17,698	\$0	2 units chosen for each conduit because there was not a large enough single structure in the list
Outlet structures (Headwall): 42 to 66 inches	each	4	\$4,758	\$19,030	\$17,698	\$0	2 units chosen for each conduit because there was not a large enough single structure in the list
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	7200	\$425	\$3,060,144	\$2,845,887	\$0	Harlem Ave, 7200 LF, 7 ft diameter RCP

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$4,670,778	\$4,343,752	\$0	
Utility Relocation			4 %	\$186,831			
Mobilization \ General Conditions			5%	\$233,539			
Subtotal with Percent Allowances				\$5,091,148			
Contingency			30%	\$1,527,344			
Profit			5%	\$330,925			
Probable Construction Cost Estimate				\$6,949,417			
Design Engineering, Geotechnical, and Construction Management			10%	\$694,942			
Property Acquisition Cost:					\$0		
Total Conceptual Cost Estimate				\$11,988,111			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Table X-X Total Conceptual Cost Report

Alternative Name	NVCR-3
Problem Description	Lake Arrowhead overflow flooding
Strategy	Raise berm along bike path to prevent Lake Arrowhead from overtopping for 100-year storm event
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Embankment construction, grading and restoration: Additional fill	yd3	933	\$14	\$12,950	\$0	\$0	
Embankment construction, grading and restoration: Compaction of fill	yd3	933	\$5	\$4,982	\$0	\$0	
Embankment construction, grading and restoration: Material hauled from offsite	yd3	933	\$11	\$9,964	\$0	\$0	
Paving: Asphalt Pavement Installation (24 ft wide, 2 ft C&G, 1 ft Excavation	lf	167	\$148	\$24,794	\$23,059	\$0	
Channel treatment: Soil stabilization and vegetative cover	yd2	889	\$14	\$12,339	\$11,475	\$2,955	
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$65,031	\$34,534	\$2,955	
Utility Relocation			4 %	\$2,601			
Mobilization \ General Conditions			5%	\$3,252			
Subtotal with Percent Allowances				\$70,883			
Contingency			30%	\$21,265			
Profit			5%	\$4,607			
Probable Construction Cost Estimate				\$96,756			
Design Engineering, Geotechnical, and Construction Management			10%	\$9,676			
Property Acquisition Cost:				\$0			
Total Conceptual Cost Estimate				\$143,920			
Additional Comments							

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Table X-X Total Conceptual Cost Report

Alternative Name	NVCR-5
Problem Description	Overbank flooding along Navajo Creek
Strategy	Harlem Ave Diversion Conduit
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	7200	\$425	\$3,060,144	\$2,845,887	\$0	7200 LF, 7 ft diameter RCP
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	2 units chosen because there was not a large enough single structure in the list
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	2 units chosen because there was not a large enough single structure in the list

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$3,079,174	\$2,863,585	\$0
Utility Relocation	4 %			\$123,167		
Mobilization \ General Conditions	5%			\$153,959		
Subtotal with Percent Allowances				\$3,356,300		
Contingency	30%			\$1,006,890		
Profit	5%			\$218,159		
Probable Construction Cost Estimate				\$4,581,349		
Design Engineering, Geotechnical, and Construction Management	10%			\$458,135		
Property Acquisition Cost:				\$0		
Total Conceptual Cost Estimate				\$7,903,069		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name NVCR-7
Problem Description
Strategy 70th Ave Diversion Conduit
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	2 units chosen because 1 unit was not large enough
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	2 units chosen because 1 unit was not large enough
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	5200	\$425	\$2,210,104	\$2,055,363	\$0	5200 LF, 4 ft diameter RCP

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$2,229,134	\$2,073,060	\$0	
Utility Relocation			4 %	\$89,165			
Mobilization \ General Conditions			5 %	\$111,457			
Subtotal with Percent Allowances				\$2,429,756			
Contingency			30%	\$728,927			
Profit			5%	\$157,934			
Probable Construction Cost Estimate				\$3,316,617			
Design Engineering, Geotechnical, and Construction Management			10%	\$331,662			
Property Acquisition Cost:					\$0		
Total Conceptual Cost Estimate				\$5,721,339			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name NVCR-8
Problem Description Overbank flooding along Navajo Creek
Strategy Oak Park Ave Diversion Conduit
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	3700	\$425	\$1,572,574	\$1,462,470	\$0	3700 LF, 6 ft diameter RCP
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	2 units chosen because there was not a large enough single structure in the list
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	2 units chosen because there was not a large enough single structure in the list

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$1,591,604	\$1,480,167	\$0	
Utility Relocation			4 %	\$63,664			
Mobilization \ General Conditions			5%	\$79,580			
Subtotal with Percent Allowances				\$1,734,848			
Contingency			30%	\$520,455			
Profit			5%	\$112,765			
Probable Construction Cost Estimate				\$2,368,068			
Design Engineering, Geotechnical, and Construction Management			10%	\$236,807			
Property Acquisition Cost:					\$0		
Total Conceptual Cost Estimate				\$4,085,042			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name OLCR-1
Problem Description
Strategy Lake Oak Lawn Expansion, 30 ac-ft additional storage
District Minimum Met
Criteria for Funding: Met
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Land Acquisition: Purchase of Property *	dollar	475000	\$1	\$475,000	\$0	\$0	0.5 acres @ \$950K/acre
Channel treatment: Sheet piling	yd2	4444	\$303	\$1,347,776	\$0	\$322,729	2000 ft (along additional shoreline), 20 ft height
Channel treatment: Vegetative cover only	yd2	2222	\$9	\$18,976	\$17,647	\$4,544	2000 ft surrounding additional length, 10 ft width
Demolition: Brick, concrete, or stone construction	ft2	76600	\$4	\$327,082	\$0	\$0	Sum of areas that include park equipment and buildings, commercial property, and miscellaneous concrete.
Channel treatment: Excavation	yd3	72600	\$11	\$775,368	\$0	\$0	Excavation of 30 acre-ft for pond, and 15 acre-ft for normal water pool
Channel treatment: Material to be hauled offsite	yd3	72600	\$12	\$853,050	\$0	\$0	Assume all material needs to be hauled offsite
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	Assume new inlet structures needed
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	Assume new outlet structures needed

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$3,341,282	\$35,345	\$327,273	
Utility Relocation			4 %	\$133,651			
Mobilization \ General Conditions			5%	\$167,064			
Subtotal with Percent Allowances				\$3,641,998			
Contingency			30%	\$1,092,599			
Profit			5%	\$236,730			
Probable Construction Cost Estimate				\$4,971,327			
Design Engineering, Geotechnical, and Construction Management			10%	\$497,133			
Property Acquisition Cost:				\$475,000			
Total Conceptual Cost Estimate				\$6,306,077			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name OLCR-3
Problem Description
Strategy Channel Stabilization
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Reinforced trapezoidal concrete channel	yd3	4672	\$587	\$2,744,099	\$2,551,970	\$0	8" depth concrete wall, 86 ft width (perimeter of trapezoidal channel), 2200 ft length
Channel treatment: Vegetative cover only	yd2	978	\$9	\$8,352	\$7,767	\$2,000	2 ft wide buffer at top of bank, 2200 ft length (X 2 sides)
Channel treatment: Compaction	yd3	3504	\$7	\$26,210	\$0	\$0	6" depth, 86 ft width (perimeter of trapezoidal channel), 2200 ft length, compacted earth for stabilized base underneath concrete
Channel treatment: Excavation	yd3	7007	\$11	\$74,835	\$0	\$0	1 ft depth, 86 ft width (perimeter of trapezoidal channel), 2200 ft length
Channel treatment: Material to be hauled offsite	yd3	3503	\$12	\$41,160	\$0	\$0	Difference between excavation and compaction.

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$2,894,656	\$2,559,738	\$2,000	
Utility Relocation			4 %	\$115,786			
Mobilization \ General Conditions			5 %	\$144,733			
Subtotal with Percent Allowances				\$3,155,175			
Contingency			30%	\$946,553			
Profit			5%	\$205,086			
Probable Construction Cost Estimate				\$4,306,814			
Design Engineering, Geotechnical, and Construction Management			10%	\$430,681			
Property Acquisition Cost:				\$0			
Total Conceptual Cost Estimate				\$7,299,233			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Table X-X Total Conceptual Cost Report

Alternative Name	SFDT-1
Problem Description	Overbank flooding along 71st Street Ditch
Strategy	Convert existing detention on Resurrection Cemetery to wetland to detain flows from Bridgeview storm sewer
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	96800	\$11	\$1,033,824	\$0	\$0	Assume 60 ac-ft of excavation
Channel treatment: Material to be hauled offsite	yd3	87120	\$12	\$1,023,660	\$0	\$0	Assume 90 % of excavated materials to be hauled off site
Demolition: Brick, concrete, or stone construction	ft2	960	\$4	\$4,099	\$0	\$0	Remove existing 120 ft of culvert beneath Archer Ave; Assume 120 ft * 8 ft wide
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	Inlet structure into detention basin
Pipe under pavement (city): 42 to 66 inches / box culvert (15 to 27 ft2)	lf	250	\$292	\$72,885	\$67,782	\$0	Cost for two (2) CMP pipes across Archer Ave
Outlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	Outlet structure from detention basin
Land Acquisition: Purchase of Property *	dollar	1086000	\$1	\$1,086,000	\$0	\$0	6 acres valued at approximately \$181,000 per acre
Channel treatment: Vegetative cover only	yd2	29040	\$9	\$248,002	\$230,638	\$59,385	Revegetation of disturbed soils on 6 acre site
Embankment construction, grading and restoration: Compaction of fill	yd3	9680	\$5	\$51,691	\$0	\$0	Compaction / regrading of 10% of excavated materials to provide berms / habitat

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)		\$2,443,676	\$307,268	\$59,385
Utility Relocation	4 %	\$97,747		
Mobilization \ General Conditions	5%	\$122,184		
Subtotal with Percent Allowances		\$2,663,607		
Contingency	30%	\$799,082		
Profit	5%	\$173,134		
Probable Construction Cost Estimate		\$3,635,823		
Design Engineering, Geotechnical, and Construction Management	10%	\$363,582		
Property Acquisition Cost:		\$1,086,000		
Total Conceptual Cost Estimate		\$5,452,059		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Table X-X Total Conceptual Cost Report

Alternative Name	SFDT-2
Problem Description	Overbank flooding along SFDT
Strategy	Additional conveyance to I&M Canal from SFDT to lower WSELs
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Outlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	
Pipe in tunnel: 42 to 66 inches	lf	162	\$1,495	\$242,200	\$225,242	\$0	162 ft is the length of the existing culvert
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	
Channel treatment: Excavation	yd3	2222	\$11	\$23,733	\$0	\$0	Assume 100 ft x 100 ft x 6 ft excavation for jacking pit
Channel treatment: Compaction	yd3	2222	\$7	\$16,622	\$0	\$0	Compact 100 ft x 100 ft x 6 ft of material excavated for jacking pit
Land Acquisition: Purchase of Property *	dollar	4600	\$1	\$4,600	\$0	\$0	0.23 acres valued at \$200,000 utilized as temporary easement

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$292,070	\$234,091	\$0
Utility Relocation			4 %	\$11,683		
Mobilization \ General Conditions			5%	\$14,603		
Subtotal with Percent Allowances				\$318,356		
Contingency			30%	\$95,507		
Profit			5%	\$20,693		
Probable Construction Cost Estimate				\$434,556		
Design Engineering, Geotechnical, and Construction Management			10%	\$43,456		
Property Acquisition Cost:				\$4,600		
Total Conceptual Cost Estimate				\$716,703		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	SPCR-1
Problem Description	
Strategy	Raise 157th street to prevent flooding, place bike path upstream which acts hydraulically as the old road
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Demolition: Brick, concrete, or stone construction	ft2	750	\$4	\$3,203	\$0	\$0	750 ft of roadway length at 1 ft deep
Embankment construction, grading and restoration: Additional fill	yd3	6776	\$14	\$94,051	\$0	\$0	750 ft of roadway length, 24 ft wide and 4 ft of additional depth plus an additional amount of fill for a 3V:1H side slope along both sides and additional amount for culvert
Embankment construction, grading and restoration: Compaction of fill	yd3	6776	\$5	\$36,184	\$0	\$0	750 ft of roadway length, 24 ft wide and 4 ft of additional depth plus an additional amount of fill for a 3V:1H side slope along both sides and additional amount for culvert
Embankment construction, grading and restoration: Material hauled from offsite	yd3	6776	\$11	\$72,368	\$0	\$0	750 ft of roadway length, 24 ft wide and 4 ft of additional depth plus an additional amount of fill for a 3V:1H side slope along both sides and additional amount for culvert
Paving: Asphalt Pavement Installation (24 ft wide, 2 ft C&G, 1 ft Excavation	lf	750	\$148	\$111,353	\$103,556	\$0	
Pipe under pavement (county): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	82	\$609	\$49,913	\$46,419	\$0	Two 41 ft 6 ft by 6 ft culverts side by side.
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	DS headwall for box culvert
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	US headwall for box culvert
Paving: Asphalt Pavement Installation (24 ft wide, 2 ft C&G, 1 ft Excavation	lf	100	\$148	\$14,847	\$13,807	\$0	Calculated equivalent pavement for 300 LF bike path (assumed 8 ft wide bike path)
Embankment construction, grading and restoration: Additional fill	yd3	2450	\$14	\$34,006	\$0	\$0	berm volume = 2450 yd3, 300 long
Embankment construction, grading and restoration: Compaction of fill	yd3	2450	\$5	\$13,083	\$0	\$0	berm volume = 2450 yd3, 300 long
Embankment construction, grading and restoration: Material hauled from offsite	yd3	2450	\$11	\$26,166	\$0	\$0	berm volume = 2450 yd3, 300 long
Pipe in earth (county): 42 to 66 inches / box culvert (15-27 ft2)	lf	60	\$208	\$12,494	\$11,620	\$0	low flow pipe, 5ft diameter

Alternative Name SPCR-1
Problem Description
Strategy Raise 157th street to prevent flooding, place bike path upstream which acts hydraulically as the old road
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	low flow pipe, 5ft diameter
Outlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	low flow pipe, 5ft diameter
Land Acquisition: Permanent Easement *	dollar	39766	\$1	\$39,766	\$0	\$0	0.4 acres, \$198829/acre

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$496,212	\$201,948	\$0	
Utility Relocation			4 %	\$19,848			
Mobilization \ General Conditions			5%	\$24,811			
Subtotal with Percent Allowances				\$540,871			
Contingency			30%	\$162,261			
Profit			5%	\$35,157			
Probable Construction Cost Estimate				\$738,289			
Design Engineering, Geotechnical, and Construction Management			10%	\$73,829			
Property Acquisition Cost:				\$39,766			
Total Conceptual Cost Estimate				\$1,053,833			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	STCR-10
Problem Description	Erosion/Sedimentation near confluence of Stony Creek with Oak Lawn Creek
Strategy	Concrete Stabilization (assume hard-armored natural stabilization techniques would work as well)
District Minimum	Met
Criteria for Funding:	Met
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Reinforced trapezoidal concrete channel	yd3	1698	\$587	\$997,320	\$927,493	\$0	8" depth concrete wall, 86 ft width (perimeter of trapezoidal channel), 800 ft length
Channel treatment: Vegetative cover only	yd2	356	\$9	\$3,037	\$2,824	\$727	2 ft wide buffer at top of bank, 800 ft length (X 2 sides)
Channel treatment: Compaction	yd3	1274	\$7	\$9,530	\$0	\$0	6" depth, 86 ft width (perimeter of trapezoidal channel), 800 ft length, compaction for soil beneath concrete
Channel treatment: Excavation	yd3	2548	\$11	\$27,213	\$0	\$0	1 ft depth, 86 ft width (perimeter of trapezoidal channel), 800 ft length, excavation for concrete
Channel treatment: Material to be hauled offsite	yd3	1273	\$12	\$14,958	\$0	\$0	Difference between excavation and compaction.
Channel treatment: Excavation	yd3	2777	\$11	\$29,658	\$0	\$0	Excavation of material that has fallen into Stony Creek and is causing blockage; very rough estimate based on field observation and cross-section information
Channel treatment: Material to be hauled offsite	yd3	2777	\$12	\$32,630	\$0	\$0	Hauling of material that has fallen into Stony Creek and is causing blockage

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)		\$1,114,345	\$930,317	\$727
Utility Relocation	4 %	\$44,574		
Mobilization \ General Conditions	5%	\$55,717		
Subtotal with Percent Allowances		\$1,214,636		
Contingency	30%	\$364,391		
Profit	5%	\$78,951		
Probable Construction Cost Estimate		\$1,657,978		
Design Engineering, Geotechnical, and Construction Management	10%	\$165,798		
Property Acquisition Cost:		\$0		
Total Conceptual Cost Estimate		\$2,754,820		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name STCR-11
Problem Description
Strategy Stony Levee
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Embankment construction, grading and restoration: Additional fill	yd3	4702	\$14	\$65,264	\$0	\$0	Embankment Construction along STCR/LUDT
Embankment construction, grading and restoration: Compaction of fill	yd3	4702	\$5	\$25,109	\$0	\$0	Embankment Construction along STCR/LUDT
Embankment construction, grading and restoration: Material hauled from offsite	yd3	4702	\$11	\$50,217	\$0	\$0	Embankment Construction along STCR/LUDT
Pipe in earth (city): 42 to 66 inches / box culvert (15 to 27 ft2)	lf	75	\$208	\$15,618	\$14,525	\$0	Pipe to maintain outlet to Stony Creek from proposed levee
Channel treatment: Excavation	yd3	34848	\$11	\$372,177	\$0	\$0	Construction of 16.45 ac-ft detention pond to offset lost floodplain storage
Channel treatment: Material to be hauled offsite	yd3	34848	\$12	\$409,464	\$0	\$0	Construction of 16.45 ac-ft detention pond to offset lost floodplain storage
Channel treatment: Vegetative cover only	yd2	69696	\$9	\$595,204	\$553,530	\$142,523	Cover for approximately 4.7 acres of detention

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$1,533,052	\$568,055	\$142,523	
Utility Relocation			4 %	\$61,322			
Mobilization \ General Conditions			5%	\$76,653			
Subtotal with Percent Allowances				\$1,671,027			
Contingency			30%	\$501,308			
Profit			5%	\$108,617			
Probable Construction Cost Estimate				\$2,280,952			
Design Engineering, Geotechnical, and Construction Management			10%	\$228,095			
Property Acquisition Cost:				\$0			
Total Conceptual Cost Estimate				\$3,219,625			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	STCR-2
Problem Description	Extensive overbank flooding along Stony Creek
Strategy	Add approximately 400 ac-ft of detention on St. Casimir Cemetery property
District Minimum	Met
Criteria for Funding:	Yes
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Land Acquisition: Permanent Easement *	dollar	8315348	\$1	\$8,315,348	\$0	\$0	40 acres at \$415,000/acre, 50% of value for permanent easement
Channel treatment: Vegetative cover only	yd2	30400	\$9	\$259,616	\$241,439	\$62,166	7200 ft perimeter (1200 ft wide x 1400 ft long) length, 38 ft width
Concrete: Cast in place	yd3	1333	\$250	\$333,250	\$0	\$0	Need 3 very large structures for inlet and outlet pipes (to accommodate up to 2 - 10 ft by 16 ft boxes)
Pipe under pavement (city): Box culvert (51 to 60 ft2)	lf	9200	\$661	\$6,081,476	\$5,655,680	\$0	Assumes 1400 LF from West Stony Creek and Cicero Ave, plus 2000 LF from Kilpatrick. 9200 ft is equivalent length of pipe to account for pipe area (10 x 16 ft box) and 2 barrels.
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	1500	\$425	\$637,530	\$592,893	\$0	Outlet Pipe
Wetland: Construct / Mitigate wetland outside Des Plaines watershed	acre	6	\$60,000	\$360,000	\$334,794	\$0	Wetland mitigation 6 acres @ \$60,000
Channel treatment: Excavation	yd3	624360	\$11	\$6,668,165	\$0	\$0	307 ac-ft for pond, and 100 ac-ft for normal water pool
Channel treatment: Compaction	yd3	312180	\$7	\$2,335,106	\$0	\$0	Assume half of excavated material can be disposed of onsite
Channel treatment: Material to be hauled offsite	yd3	312180	\$12	\$3,668,115	\$0	\$0	Assume half of excavated material needs to be hauled offsite

Alternative Name STCR-2
Problem Description Extensive overbank flooding along Stony Creek
Strategy Add approximately 400 ac-ft of detention on St. Casimir Cemetery property
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$20,343,258	\$6,824,806	\$62,166	
Utility Relocation			4 %	\$813,730			
Mobilization \ General Conditions			5%	\$1,017,163			
Subtotal with Percent Allowances				\$22,174,151			
Contingency			30%	\$6,652,245			
Profit			5%	\$1,441,320			
Probable Construction Cost Estimate				\$30,267,717			
Design Engineering, Geotechnical, and Construction Management			10%	\$3,026,772			
Property Acquisition Cost:				\$8,315,348			
Total Conceptual Cost Estimate				\$48,496,809			
Additional Comments							

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Cal Sag Watershed Detailed Watershed Plan
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Alternative Name	STCR-3
Problem Description	Extensive overbank flooding along Stony Creek
Strategy	Add approximately 87 ac-ft of detention at Wolfe Wildlife Refuge
District Minimum	Met
Criteria for Funding:	Met
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	183301	\$11	\$1,957,652	\$0	\$0	Volume of pond plus volume of normal pool, and excavation for vegetated cover
Channel treatment: Material to be hauled offsite	yd3	148427	\$12	\$1,744,013	\$0	\$0	Material excavated minus what is needed for embankments
Embankment construction, grading and restoration: Compaction of fill	yd3	32267	\$5	\$172,304	\$0	\$0	Assumed only material required for embankments can remain on-site.
Outlet structures (Headwall): 36 inches or less	each	2	\$2,600	\$5,201	\$4,837	\$0	Outlet structures from ponds to return flow to Stony Creek
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	Inlet structures to take flow from Stony Creek
Pipe under pavement (city): 72 to 84 inches / box culvert (28 to 38 ft2)	lf	100	\$425	\$42,502	\$39,526	\$0	Pipes to convey flow to and from Stony Creek
Wetland: Construct / Mitigate wetland outside Des Plaines watershed	acre	7	\$60,000	\$396,000	\$368,274	\$0	6 acres of wetland mitigation at \$60,000/acre
Land Acquisition: Purchase of Property *	dollar	0	\$1	\$0	\$0	\$0	Land acquisition provided by Village of Oak Lawn and Oak Lawn Park District at no cost, 11.6 acres at \$0/acre
Channel treatment: Vegetative cover only	yd2	7822	\$9	\$66,802	\$62,125	\$15,996	4400 ft perimeter length, 16 ft width

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)		\$4,393,989	\$483,610	\$15,996
Utility Relocation	4 %	\$175,760		
Mobilization \ General Conditions	5%	\$219,699		
Subtotal with Percent Allowances		\$4,789,448		
Contingency	30%	\$1,436,834		
Profit	5%	\$311,314		
Probable Construction Cost Estimate		\$6,537,596		
Design Engineering, Geotechnical, and Construction Management	10%	\$653,760		
Property Acquisition Cost:		\$0		
Total Conceptual Cost Estimate		\$7,690,962		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
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Alternative Name STCR-4
Problem Description Extensive overbank flooding along Stony Creek
Strategy Construct 39 acre-ft detention pond
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Vegetative cover only	yd2	7600	\$9	\$64,904	\$60,360	\$15,541	1800 ft perimeter x 38 ft width for vegetation
Channel treatment: Excavation	yd3	91960	\$11	\$982,133	\$0	\$0	Assumes 39 acre-feet for pond, 18 acre-ft for normal water pool
Channel treatment: Material to be hauled offsite	yd3	89960	\$12	\$1,057,030	\$0	\$0	Excavation minus material remaining on site
Embankment construction, grading and restoration: Compaction of fill	yd3	2000	\$5	\$10,680	\$0	\$0	Assumes 1800 ft long embankment around pond, 3 ft high, by 10 ft wide
Outlet structures (Headwall): 36 inches or less	each	1	\$2,600	\$2,600	\$2,418	\$0	Outlet structure from pond
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	Inlet structure to pond
Pipe under pavement (city): 42 to 66 inches / box culvert (15 to 27 ft2)	lf	25	\$292	\$7,289	\$6,778	\$0	Pipe to pond
Pipe under pavement (city): 36 inches or less	lf	25	\$304	\$7,609	\$7,076	\$0	Outlet pipe from pond
Land Acquisition: Permanent Easement *	dollar	733213	\$1	\$733,213	\$0	\$0	4 acres, land value estimated at \$366K/acre, 50% for perm easement

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$2,137,002	\$81,057	\$15,541	
Utility Relocation			4 %	\$85,480			
Mobilization \ General Conditions			5%	\$106,850			
Subtotal with Percent Allowances				\$2,329,332			
Contingency			30%	\$698,800			
Profit			5%	\$151,407			
Probable Construction Cost Estimate				\$3,179,538			
Design Engineering, Geotechnical, and Construction Management			10%	\$317,954			
Property Acquisition Cost:				\$733,213			
Total Conceptual Cost Estimate				\$4,327,303			

Additional Comments

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Alternative Name	STCR-6
Problem Description	Overbank flooding along Stony Creek
Strategy	Rerouting of Melvina Ditch at confluence with Stony Creek
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Land Acquisition: Purchase of Property *	dollar	200000	\$1	\$200,000	\$0	\$0	1.0 acres for Melvina re-route, property purchase, \$200K/acre
Land Acquisition: Purchase of Property *	dollar	2680000	\$1	\$2,680,000	\$0	\$0	13.4 acres for ponds, property purchase, \$200K/acre
Channel treatment: Excavation	yd3	8318	\$11	\$88,836	\$0	\$0	Excavation for channel only, 212 ft to pond and 370 ft after pond = 572 ft total length, assume channel is 5 ft wide at bottom and 10 ft deep with 3:1 side slopes
Channel treatment: Material to be hauled offsite	yd3	8318	\$12	\$97,737	\$0	\$0	Haul excavated material from site
Channel treatment: Vegetative cover only	yd2	4203	\$9	\$35,896	\$33,383	\$8,595	channel is 65 ft wide top of slope to top of slope
Channel treatment: Excavation	yd3	183920	\$11	\$1,964,266	\$0	\$0	Excavation for ponds, 114 acre-feet of excavation for ponds plus normal water pool
Channel treatment: Material to be hauled offsite	yd3	176587	\$12	\$2,074,897	\$0	\$0	Excavation minus embankment
Channel treatment: Vegetative cover only	yd2	20000	\$9	\$170,800	\$158,841	\$40,899	Revegetation for ponds for side slope of ponds
Embankment construction, grading and restoration: Compaction of fill	yd3	7333	\$5	\$39,158	\$0	\$0	Embankment for ponds, assume 5500 ft total length of embankments, 6 ft high by 4 ft wide with 3:1 side slopes (area = 36 sf)
Outlet structures (Headwall): 42 to 66 inches	each	4	\$4,758	\$19,030	\$17,698	\$0	Outlet structures for each of four ponds
Pipe under pavement (city): Box culvert (51 to 60 ft2)	lf	93	\$661	\$61,694	\$57,374	\$0	80 LF of 7 ft x10 ft box culvert (crosses under Janet Lane), multiplied by 70/60 to account for larger pipe area than largest box culvert in unit cost data
Pipe under pavement (city): Box culvert (51 to 60 ft2)	lf	128	\$661	\$84,810	\$78,872	\$0	2 - 55 ft long 7 ft by 10 ft box culverts, cross under railroad, multiplied by 70/60 to account for larger pipe area than largest box culvert in unit cost data

Alternative Name STCR-6
Problem Description Overbank flooding along Stony Creek
Strategy Rerouting of Melvina Ditch at confluence with Stony Creek
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Excavation	yd3	2222	\$11	\$23,731	\$0	\$0	Assume 100 ft x 100 ft x 6 ft excavation for jacking pit
Channel treatment: Compaction	yd3	2222	\$7	\$16,621	\$0	\$0	Compact 100 ft x 100 ft x 6 ft of material excavated for jacking pit
Land Acquisition: Temporary Easement *	dollar	3742	\$1	\$3,742	\$0	\$0	0.23 acres valued at \$162,700 utilized as temporary easement @ 10%
Inlet structures (Headwall): 42 to 66 inches	each	4	\$4,758	\$19,030	\$17,698	\$0	Inlet structures for each of four ponds

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$4,696,506	\$363,866	\$49,494	
Utility Relocation			4 %	\$187,860			
Mobilization \ General Conditions			5%	\$234,825			
Subtotal with Percent Allowances				\$5,119,191			
Contingency			30%	\$1,535,757			
Profit			5%	\$332,747			
Probable Construction Cost Estimate				\$6,987,696			
Design Engineering, Geotechnical, and Construction Management			10%	\$698,770			
Property Acquisition Cost:				\$2,883,742			
Total Conceptual Cost Estimate				\$10,983,568			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
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Alternative Name	STCR-7
Problem Description	Overbank flooding along East Stony Creek
Strategy	Add two additional 7.1' by 8' box culverts to California Ave culvert at downstream end of East Stony Creek
District Minimum	Met
Criteria for Funding:	Yes
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	Outlet Structures
Pipe under pavement (city): Box culvert (51 to 60 ft2)	lf	1050	\$661	\$694,082	\$645,485	\$0	525 LF of culvert under California Ave or pavement x 2 culverts
Pipe in earth (city): Box culvert (51 to 60 ft2)	lf	1262	\$472	\$595,677	\$553,970	\$0	631 LF of culvert under earth x 2 culverts
Channel treatment: Excavation	yd3	2222	\$11	\$23,731	\$0	\$0	Assume 100 ft x 100 ft x 6 ft excavation for jacking pit
Channel treatment: Compaction	yd3	2222	\$7	\$16,621	\$0	\$0	Compact 100 ft x 100 ft x 6 ft of material excavated for jacking pit
Land Acquisition: Temporary Easement *	dollar	3742	\$1	\$3,742	\$0	\$0	0.23 acres valued at \$162,700 utilized as temporary easement @ 10%
Land Acquisition: Permanent Easement *	dollar	0	\$1	\$0	\$0	\$0	Assume existing easement is wide enough for additional pipes
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$9,515	\$8,849	\$0	Inlet Structures

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)		\$1,349,140	\$1,217,153	\$0
Utility Relocation	4 %	\$53,966		
Mobilization \ General Conditions	5%	\$67,457		
Subtotal with Percent Allowances		\$1,470,562		
Contingency	30%	\$441,169		
Profit	5%	\$95,587		
Probable Construction Cost Estimate		\$2,007,317		
Design Engineering, Geotechnical, and Construction Management	10%	\$200,732		
Property Acquisition Cost:		\$3,742		
Total Conceptual Cost Estimate		\$3,428,944		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name	STCR-8
Problem Description	Overbank flooding along Stony Creek
Strategy	Construct 8' by 8' box culvert to Cal-Sag Channel along COM ED right-of-way
District Minimum	Met
Criteria for Funding:	Met
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Land Acquisition: Purchase of Property *	dollar	398366	\$1	\$398,366	\$0	\$0	50 ft wide x 4800 ft long permanent easement in Com-Ed right of way. Property value estimated at \$144,607/acre
Outlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	
Pipe under pavement (city): Box culvert (51 to 60 ft2)	lf	100	\$661	\$66,103	\$61,475	\$0	Diversion conduit crosses four lane road to Cal Sag channel
Pipe in earth (city): Box culvert (51 to 60 ft2)	lf	4700	\$472	\$2,218,447	\$2,063,122	\$0	Diversion conduit to Cal Sag Channel
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$2,294,065	\$2,133,445	\$0	
Utility Relocation			4 %	\$91,763			
Mobilization \ General Conditions			5%	\$114,703			
Subtotal with Percent Allowances				\$2,500,531			
Contingency			30%	\$750,159			
Profit			5%	\$162,535			
Probable Construction Cost Estimate				\$3,413,225			
Design Engineering, Geotechnical, and Construction Management			10%	\$341,322			
Property Acquisition Cost:				\$398,366			
Total Conceptual Cost Estimate				\$6,286,358			

Additional Comments

**Metropolitan Water Reclamation District of Greater Chicago
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Total Conceptual Cost Report**

Alternative Name STCR-9
Problem Description
Strategy Construct 8' by 8' box culvert to Cal-Sag Channel under Harlem Ave
District Minimum Met
Criteria for Funding:
Recommended No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Pipe under pavement (city): Box culvert (51 to 60 ft2)	lf	8000	\$661	\$5,288,240	\$4,917,982	\$0	8 ft x 8 ft box culvert under Harlem Avenue
Outlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	Outlet Structure
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	Inlet Structure

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$5,297,755	\$4,926,831	\$0	
Utility Relocation			4 %	\$211,910			
Mobilization \ General Conditions			5%	\$264,888			
Subtotal with Percent Allowances				\$5,774,553			
Contingency			30%	\$1,732,366			
Profit			5%	\$375,346			
Probable Construction Cost Estimate				\$7,882,265			
Design Engineering, Geotechnical, and Construction Management			10%	\$788,226			
Property Acquisition Cost:				\$0			
Total Conceptual Cost Estimate				\$13,597,322			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
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Total Conceptual Cost Report

Alternative Name	TICR-1
Problem Description	Tinley Creek overbank flooding
Strategy	96" Relief Sewer Under Central Avenue - Increasing conveyance from Tinley Creek to Cal-Sag Channel
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Pipe under pavement (city): 90 to 96 inches / box culvert (39 to 50 ft2)	lf	3150	\$609	\$1,917,405	\$1,783,157	\$0	Length approximated using GIS
Inlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$7,136	\$6,637	\$0	96" item not available; markup via quantity
Outlet structures (Headwall): 42 to 66 inches	each	2	\$4,758	\$7,136	\$6,637	\$0	96" item not available; markup via quantity

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)		\$1,931,678	\$1,796,431	\$0
Utility Relocation	4 %	\$77,267		
Mobilization \ General Conditions	5%	\$96,584		
Subtotal with Percent Allowances		\$2,105,528		
Contingency	30%	\$631,659		
Profit	5%	\$136,859		
Probable Construction Cost Estimate		\$2,874,046		
Design Engineering, Geotechnical, and Construction Management	10%	\$287,405		
Property Acquisition Cost:		\$0		
Total Conceptual Cost Estimate		\$4,957,882		

Additional Comments

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Total Conceptual Cost Report

Alternative Name	TICR-2
Problem Description	Reduce peak flow downstream
Strategy	Impoundment in Forest Preserve upstream of Oak Park Ave
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Outlet structures: Concrete swale	yd2	130	\$98	\$12,773	\$11,878	\$0	overflow weir with concrete drop structure, 60 ft wide weir with 4:1 side slopes up 4ft and a concrete slide down to channel 6 ft vertical at 4:1 side slopes
Pipe in earth (county): Box culvert (51 to 60 ft2)	lf	100	\$472	\$47,201	\$43,896	\$0	base flow pipe, 5x5 box culvert
Inlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	upstream headwalls
Outlet structures (Headwall): 42 to 66 inches	each	1	\$4,758	\$4,758	\$4,424	\$0	downstream headwalls
Land Acquisition: Permanent Easement *	dollar	750000	\$1	\$750,000	\$0	\$0	Assume 10 acre site for area subject to two year inundation (estimated only). Land valued at \$150,000 per acre.
Channel treatment: Excavation	yd3	9457	\$11	\$101,001	\$0	\$0	Excavation of material from upstream in Forest Preserve (roughly equivalent in cost to hauling from offsite, too)
Channel treatment: Soil stabilization and vegetative cover	yd2	4444	\$14	\$61,689	\$57,370	\$14,772	Seed weir embankment ; stabilize structure
Embankment construction, grading and restoration: Additional fill	yd3	9457	\$14	\$131,263	\$0	\$0	Impoundment upstream of Oak Park Ave; Volume calculated based on 50 ft wide structure up to elevation 645 ft.
Embankment construction, grading and restoration: Compaction of fill	yd3	9457	\$5	\$50,500	\$0	\$0	Compaction of impoundment;
Wetland: Construct / Mitigate wetland outside Des Plaines watershed	acre	10	\$60,000	\$600,000	\$557,991	\$0	10 acres of wetland habitat may be impacted by proposed impoundments

Alternative Name	TICR-2
Problem Description	Reduce peak flow downstream
Strategy	Impoundment in Forest Preserve upstream of Oak Park Ave
District Minimum	Met
Criteria for Funding:	Met
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$1,013,942	\$679,984	\$14,772	
Utility Relocation			4 %	\$40,558			
Mobilization \ General Conditions			5%	\$50,697			
Subtotal with Percent Allowances				\$1,105,196			
Contingency			30%	\$331,559			
Profit			5%	\$71,838			
Probable Construction Cost Estimate				\$1,508,593			
Design Engineering, Geotechnical, and Construction Management			10%	\$150,859			
Property Acquisition Cost:				\$750,000			
Total Conceptual Cost Estimate				\$3,104,208			
Additional Comments							

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Table X-X Total Conceptual Cost Report

Alternative Name	TICR-3
Problem Description	Tinely Creek overbank flooding north to Cal-Sag 6
Strategy	Build/Reinforce levee with 3' freeboard on both sides of bank upstream of Central Ave - Raise bank elevation
District Minimum	Met
Criteria for Funding:	Met
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Embankment construction, grading and restoration: Material hauled from offsite	yd3	3700	\$11	\$39,516	\$0	\$0	Levee construction assuming 4.5 ft height, 5ft top width, and 3:1 side slope. Length (1200ft) approximated with GIS.
Embankment construction, grading and restoration: Additional fill	yd3	3700	\$14	\$51,356	\$0	\$0	Place fill for levee
Embankment construction, grading and restoration: Compaction of fill	yd3	3700	\$5	\$19,758	\$0	\$0	Compact levee material
Channel treatment: Vegetative cover only	yd2	3196	\$9	\$27,294	\$25,383	\$6,536	Seed levee surface
Land Acquisition: Permanent Easement *	dollar	72715	\$1	\$72,715	\$0	\$0	1400 ft x 25 ft levee easement on property estimated at value of \$181,000
Embankment construction, grading and restoration: Material hauled from offsite	yd3	2186	\$11	\$23,346	\$0	\$0	Construct levee on SE side of river roughly 2,000 ft in length with average height of 1.8 ft (range 0-5) with average width of 16 ft, providing 3 ft of freeboard above estimated 100 yr WSEL
Embankment construction, grading and restoration: Additional fill	yd3	2186	\$14	\$30,342	\$0	\$0	Place fill for levee
Embankment construction, grading and restoration: Compaction of fill	yd3	2186	\$5	\$11,673	\$0	\$0	Compact levee material
Channel treatment: Vegetative cover only	yd2	3427	\$9	\$29,267	\$27,217	\$7,008	Seed levee surface
Land Acquisition: Permanent Easement *	dollar	191660	\$1	\$191,660	\$0	\$0	Permanent Easement 2000 ft in length by roughly 40 ft wide (avg width + 25 ft) (1.87 ac estimated at \$180,000)
Pump Station: 10ac-ft per day interior drainage	each	1	\$800,000	\$800,000	\$743,988	\$0	Pumping station on SE side of stream to dewater area on other side of levee

Alternative Name TICR-3
Problem Description Tinely Creek overbank flooding north to Cal-Sag 6
Strategy Build/Reinforce levee with 3' freeboard on both sides of bank upstream of Central Ave - Raise bank elevation
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$1,032,552	\$796,588	\$13,544	
Utility Relocation			4 %	\$41,302			
Mobilization \ General Conditions			5%	\$51,628			
Subtotal with Percent Allowances				\$1,125,481			
Contingency			30%	\$337,644			
Profit			5%	\$73,156			
Probable Construction Cost Estimate				\$1,536,282			
Design Engineering, Geotechnical, and Construction Management			10%	\$153,628			
Property Acquisition Cost:				\$264,375			
Total Conceptual Cost Estimate				\$2,764,418			
Additional Comments							

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Table X-X Total Conceptual Cost Report

Alternative Name	TICR-3B
Problem Description	Flooding upstream of Tinley Creek's crossing of 127th Street
Strategy	Build/Reinforce 3' levee upstream of Central Ave with additional compensatory storage
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Embankment construction, grading and restoration: Material hauled from offsite	yd3	3700	\$11	\$39,516	\$0	\$0	Levee construction assuming 4.5 ft height, 5ft top width, and 3:1 side slope. Length (1200ft) approximated with GIS.
Embankment construction, grading and restoration: Additional fill	yd3	3700	\$14	\$51,356	\$0	\$0	Place fill for levee
Embankment construction, grading and restoration: Compaction of fill	yd3	3700	\$5	\$19,758	\$0	\$0	Compact levee material
Channel treatment: Vegetative cover only	yd2	3196	\$9	\$27,294	\$25,383	\$6,536	Seed levee surface
Land Acquisition: Permanent Easement *	dollar	72715	\$1	\$72,715	\$0	\$0	1400 ft x 25 ft levee easement on property estimated at value of \$181,000
Channel treatment: Excavation	yd3	112933	\$11	\$1,206,124	\$0	\$0	Excavation of 45 ac-ft of storage to mitigate for lost floodplain storage. Selected site requires 70 ac-ft of excavation
Channel treatment: Material to be hauled offsite	yd3	56466	\$12	\$663,476	\$0	\$0	Assume half of excavated materials are hauled off site, and the remainder regraded in adjacent areas
Channel treatment: Vegetative cover only	yd2	53240	\$9	\$454,670	\$422,836	\$108,872	Vegetation of 11 acre site
Land Acquisition: Permanent Easement *	dollar	675000	\$1	\$675,000	\$0	\$0	Assume 9 acres necessary, at \$150,000 per acre
Channel treatment: Compaction	yd3	56466	\$7	\$422,366	\$0	\$0	Half of excavated material is compacted in surrounding area

Alternative Name	TICR-3B
Problem Description	Flooding upstream of Tinley Creek's crossing of 127th Street
Strategy	Build/Reinforce 3' levee upstream of Central Ave with additional compensatory storage
District Minimum	Met
Criteria for Funding:	
Recommended	No

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)							
Subtotal (direct costs)				\$2,884,559	\$448,219	\$115,408	
Utility Relocation			4 %	\$115,382			
Mobilization \ General Conditions			5%	\$144,228			
Subtotal with Percent Allowances				\$3,144,169			
Contingency			30%	\$943,251			
Profit			5%	\$204,371			
Probable Construction Cost Estimate				\$4,291,791			
Design Engineering, Geotechnical, and Construction Management			10%	\$429,179			
Property Acquisition Cost:				\$747,715			
Total Conceptual Cost Estimate				\$6,032,312			
Additional Comments							

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Total Conceptual Cost Report

Alternative Name TICR-5
Problem Description
Strategy Dredge approximately 1500 ft downstream of Lake Lorin
District Minimum Met
Criteria for Funding:
Recommended Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
maintenance: Small Channel Maintenance (Brush and debris removal)	lf	1500	\$5	\$7,500	\$6,975	\$1,796	removal of any derbis
Channel treatment: Excavation	yd3	2500	\$11	\$26,700	\$0	\$0	Assume 30 ft wide by 1.5 ft deep by 1500 ft long
Channel treatment: Material to be hauled offsite	yd3	2500	\$12	\$29,375	\$0	\$0	Remove excavated material

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$63,575	\$6,975	\$1,796	
Utility Relocation			4 %	\$2,543			
Mobilization \ General Conditions			5%	\$3,179			
Subtotal with Percent Allowances				\$69,297			
Contingency			30%	\$20,789			
Profit			5%	\$4,504			
Probable Construction Cost Estimate				\$94,590			
Design Engineering, Geotechnical, and Construction Management			10%	\$9,459			
Property Acquisition Cost:				\$0			
Total Conceptual Cost Estimate				\$112,820			

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Table X-X Total Conceptual Cost Report

Alternative Name	TICR-7
Problem Description	TICR erosion problem, concrete stabilization
Strategy	stabilize bank to prevent erosion for a total of 850 LF; 700 LF of stabilization on both sides of stream upstream
District Minimum	Met
Criteria for Funding:	
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Reinforced trapezoidal concrete channel	yd3	944	\$587	\$554,458	\$515,638	\$0	1 depth concrete wall, 30ft width (perimeter of trapezoidal channel), 2300 ft length
Channel treatment: Vegetative cover only	yd2	378	\$9	\$3,228	\$3,002	\$773	2 ft wide buffer at top of bank, 2300 ft length (x 2 sides)
Channel treatment: Compaction	yd3	633	\$7	\$4,735	\$0	\$0	underneath concrete 1.5 ft depth, 30 ft width (perimeter of trapezoidal channel)
Channel treatment: Excavation	yd3	1417	\$11	\$15,134	\$0	\$0	2300 ft length
Channel treatment: Material to be hauled offsite	yd3	784	\$12	\$9,212	\$0	\$0	difference between excavation and compaction

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$586,767	\$518,640	\$773
Utility Relocation			4 %	\$23,471		
Mobilization \ General Conditions			5%	\$29,338		
Subtotal with Percent Allowances				\$639,576		
Contingency			30%	\$191,873		
Profit			5%	\$41,572		
Probable Construction Cost Estimate				\$873,021		
Design Engineering, Geotechnical, and Construction Management			10%	\$87,302		
Property Acquisition Cost:				\$0		
Total Conceptual Cost Estimate				\$1,479,736		

Additional Comments

Metropolitan Water Reclamation District of Greater Chicago
Cal Sag Watershed Detailed Watershed Plan
Table X-X Total Conceptual Cost Report

Alternative Name	TICR-8
Problem Description	TICR erosion problem
Strategy	stabilize bank to prevent erosion. Total length of 1,775 LF of stabilization required: 450 LF upstream of 159th St
District Minimum	Met
Criteria for Funding:	Met
Recommended	Yes

	Unit	Quantity	Unit Cost	Base Cost	Maint. Cost	Replacement Cost	Notes/Issues
Channel treatment: Reinforced trapezoidal concrete channel	yd3	2958	\$587	\$1,737,381	\$1,615,738	\$0	1 depth concrete wall, 45ft width (perimeter of trapezoidal channel), 1,775 ft length
Channel treatment: Vegetative cover only	yd2	789	\$9	\$6,738	\$6,266	\$1,613	2 ft wide buffer at top of bank, 1775 ft length, compacted earth for stabilized base
Channel treatment: Compaction	yd3	1982	\$7	\$14,825	\$0	\$0	underneath concrete 1.5 ft depth, 45 ft width (perimeter of trapezoidal channel)
Channel treatment: Excavation	yd3	4438	\$11	\$47,398	\$0	\$0	1775 ft length
Channel treatment: Material to be hauled offsite	yd3	2455	\$12	\$28,846	\$0	\$0	difference between excavation and compaction

* Indicates item excluded from subtotal (e.g. land acquisition, buyouts)

Subtotal (direct costs)				\$1,835,189	\$1,622,004	\$1,613
Utility Relocation			4 %	\$73,408		
Mobilization \ General Conditions			5%	\$91,759		
Subtotal with Percent Allowances				\$2,000,356		
Contingency			30%	\$600,107		
Profit			5%	\$130,023		
Probable Construction Cost Estimate				\$2,730,486		
Design Engineering, Geotechnical, and Construction Management			10%	\$273,049		
Property Acquisition Cost:				\$0		
Total Conceptual Cost Estimate				\$4,627,152		

Additional Comments