Flat Rock/Huroc Dam Disposition Feasibility Study No Action - Fish Passage Improvements

Project	OF PROBABLE COST - CONCEPTUAL DESIGN :: Flat Rock-Huroc Dam Disposition Feasibility Study :: Huron-Clinton Metropolitian Authority Alternative 1 - No Action - Fish Passage Improvement 4			Project No.: Date: Estimated by: Checked by:			2302 7/29 ZC/L JMN	/2024 .H
ltem	<u>Description</u>	Quantity	<u>Units</u>	Unit Price		Total Cost		Total Cost
0.00	General Conditions	-						(Rounded)
0.01	Contractor Mobilization / Demobilization							
	Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs	1	LS	\$ 226,000	\$	226,000	\$	226,000
				Subtotal	\$	226,000	\$	226,000
.00	Cita Dran							
1.01	Site Prep Erosion and Sediment Control	1	LS	\$ 50,000	\$	50,000	\$	50,000
1.02	Temporary Access Roads, Facilities and Laydown Areas	1	LS	\$ 100,000		100,000		100,000
				Subtotal	\$	150,000	-	150,000
2.00	Existing Fish Passage Demolition and Water Management							
2.01	Existing Fish Passage Demolition	1	LS	\$ 50,000	\$	50,000	\$	50,000
2.01	Temporary Cofferdam	258	CY	\$ 120		30,960		31,000
2:02				Subtotal	\$	80,960		81,000
						·		
3.00	Lock Fish Passage Retrofit							
3.01	Armor Stone, Rapids	1,200	CY	\$ 150	\$	180,000	\$	180,000
3.02	Chinking Stone, Rapids	500	CY		\$	44,000		44,000
3.02	Weir Boulders, Rapids	65	EA		\$	32,500		33,000
3.04	MDOT 23A, Boulder Rapids	900	CY		\$	58,500		59,000
3.05	Armor Stone, Channel Bottom	3,200	CY		\$	480,000		480,000
3.06	Chinking Stone, Channel Bottom	1,300	CY		\$	114,400		115,000
3.07	Site Restoration	1	AC	\$ 15,000	\$	15,000		15,000
3.08	Strucutral Modification (as needed)	1	LS	. ,	\$	350,000		350,000
			0-	Subtotal	\$	1,274,400		1,276,000
4.00	Unknown Scope Items		Co	nstruction Subtotal 30%	\$ \$	1,731,360 519,408		1,740,000
1.00			Co	onstruction Total:		2,250,768		2,260,000
Other Co				100/		(=0.400		
5.00	Engineering Design and Permitting			10%	\$	173,136		170,000
6.00	Construction Engineering and Construction Observation	mated Design an	d Construction	10% Cost At Flat Rock	\$ ¢	173,136 2,597,040		170,000 2,600,000
		-		30%		1,817,928.0	φ	2,000,000
	AACE CI	ass 4 Expected A	ccuracy Range	50%		3,895,560.0		
.00	50-Year Life Cycle Regulatory Requirements - No Legislation Cha	ange		2024 Dollars		Future Dollars		re Dollars Inded)
7.01	Inspections (3 year cycle)	\$-	0		\$	-		
7.02	Maintenance and Operations	\$ 10,000	50	\$ 500,000		1,587,738		1,590,000
7.03	Major rehabilitation/repairs of Flat Rock Dam	\$ 1,500,000	50	\$ 1,500,000		10,660,025		10,670,000
			Subtotal	\$ 2,000,000	\$	12,247,763	\$	12,260,000
	Total Estimated 50-year Life Cycle	e Cost with Curre	ent Regulations	\$ 4,597,040	\$	14,844,802.69	\$	14,840,000
8.00	50-Year Life Cycle Regulatory Requirements - Legislation change	9		2024 Dollars		Future Dollars		re Dollars
	Inspections (annual)		0			1,587,738		inded) 1,590,000
8.01 8.02	Inspections (annual) Increased Spillway Capacity (10yr)	\$ 10,000 \$ 2,000,000	0 10	\$ 500,000 \$ 2,000,000		2,960,489		2,970,000
8.02	Maintenance and Operations (annual)	\$ 10,000	0	\$ 2,000,000		1,587,738		1,590,000
8.04	Inspections In Depth (every 10yrs)	\$ 100,000	10	\$ 500,000		1,882,247		1,890,000
8.05	Licensing and Insurance Requirements (annual)	\$ 10,000	0	\$ 500,000	\$	1,587,738	\$	1,590,000
8.06	Major rehabilitation/repairs	\$ 1,500,000	50	\$ 1,500,000	-	10,660,025	-	10,670,000
			Subtotal	\$ 5,500,000	\$	20,265,973	\$	20,270,000
	Total Estimated 50-year Life Cycle Cost with	Regulatory Leg	slative Change	\$ 8,097,040	\$	22,863,013	\$	22,870,000
			saure enunge		. Ψ	,000,010	Ψ	,57,5,500

Flat Rock/Huroc Dam Disposition Feasibility Study No Action - Fish Passage Improvements

Client	: Flat Rock-Huroc Dam Disposition Feasibility Study : Huron-Clinton Metropolitian Authority Alternative 1 - No Action - Fish Passage Improvement				Project No.: Date: stimated by: Checked by:		2302 7/29/ ZC/L JMM	2024
0.04 <u>Item</u>	<u>Description</u>	Quantity	<u>Units</u>	<u>_</u>	Jnit Price	Total Cost		<u>Total Cost</u> Rounded)
9.00	Huroc Dam Fish Passage Retrofit			2024	4 Dollars	Future Dollars		re Dollars nded)
9.01	Construction Total (w/Engineering Design and Construction)			\$	750,000	\$ 750,000	\$	750,000
9.02	50-year Life Cycle Cost to maintain Huroc Dam			\$	500,000	\$ 1,587,738	\$	1,590,000
9.03	Total Estimated 50-year Life Cycle Cost with Inital Construction			\$	1,250,000	\$ 2,337,738	\$	2,340,000
10.00	Total Estimated 50-year Life Cycle Cost with Inital Construction			2024	4 Dollars	Future Dollars		re Dollars nded)
10.01	Total Estimated Design and Construction Cost			\$	3,350,000	\$ 3,350,000	\$	3,350,000
10.02	50-Year Life Cycle Regulatory Requirements - No Legislation Change			\$	2,500,000	\$ 13,835,500	\$	13,840,000
10.03	50-Year Life Cycle Regulatory Requirements - Legislation change			\$	6,000,000	\$ 21,853,711	\$	21,860,000
10.04	Total Estimated 50-year Life Cycle Cost with Current Regulations			\$	5,850,000	\$ 17,185,500	\$	17,190,000
10.05	Total Estimated 50-year Life Cycle Cost with Regulatory Legislative Ch	nange		\$	9,350,000	\$ 25,203,711	\$	25,210,000

Opinion of Probable Cost - Conceptual Design Flat Rock/Huroc Dam Disposition Feasibility Study Partial Dam Removal

Project	OF PROBABLE COST - CONCEPTUAL DESIGN :: Flat Rock-Huroc Dam Disposition Feasibility S :: Huron-Clinton Metropolitian Authority Partial Dam Removal - Rock Arch Rapids at Fl	Study	Dam		Project No.: Date: Estimated by: Checked by:			2302 ⁷ 7/29/2 ZC LH	
		FLAT I	ROCK DAM						
<u>Item</u>	Description	Quantity	<u>Units</u>		Unit Price		Total Cost		<u>Total Cost</u> (Rounded)
.00	General Conditions								(Rounded)
0.01	Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project	1	LS	\$	986,000	\$	986,000	\$	986,00
	Management, Temp Facilities, Project				Subtotal	\$	986,000	\$	986,00
.00	Site Prep								
1.01	Erosion and Sediment Control	1	LS	\$	37,500	\$	37,500	\$	40,00
1.02	Temporary Access Roads, Facilities and	1	LS	\$	150,000	\$	150,000	¢	150,00
1.03	Lavdown Areas	1	AC	\$ \$	18,750		18,750		19,00
1.05	Clearing and Grubbing	1	AC	φ	,	φ \$	206,250		,
					Subtotal	φ	200,200	Ð	209,00
.00	Flat Rock Demolition and Water Management								
2.01	Incremental Demolition and Construction Dewate	1	LS	\$	645,000	¢	645,000	¢	645,00
2.01	Temporary Cofferdam	848	CY	\$	120		101,760		102,00
2.02	Temporary Conerdam	0+0	01	Ψ	Subtotal	\$	746,760		747,00
					oubtotal	Ψ	740,700	Ψ	747,00
.00	Flat Rock Rock Arch Rapids Construction								
3.01	Armor Stone, Rapids	15,600	CY	\$	150	\$	2,340,000	\$	2,340,00
3.02	Chinking Stone, Rapids	6,300	CY	\$	88	\$	554,400	\$	555,00
3.03	Weir Boulders, Rapids	583	EA	\$	500	\$	291,500	\$	292,00
3.04	Excavation, Rapids	25,900	CY	\$	80	\$	2,072,000	\$	2,072,00
3.05	High Terrace Fill, Floodplain and Portage	9,700	CY	\$	15	\$	145,500	\$	146,00
3.09	MDOT 23A, Boulder Rapids	3,150	CY	\$	65	\$	204,750	\$	205,00
3.11	Site Restoration	1	AC	\$	15,000	\$	15,000	\$	15,00
					Subtotal	\$	5,623,150	\$	5,625,00
			Col	nstru	ction Subtotal	\$	7,562,160	\$	7,563,00
6.00	Unknown Scope Items				30%	\$	2,268,648	\$	2,269,00
			(Const	truction Total:	\$	9,830,808	\$	9,832,00
Other Co									
7.00	Engineering Design and Permitting				10%	\$	756,216		757,00
8.00	Engineering and Construction Observation				10%	\$	756,216	\$	757,00
		Flat Rock Estima	ated Design and	d Con	struction Cost	\$	11,343,240	\$	11,346,00
1	50-Year Life Cycle Regulatory Requirements -	No Legislation Char	nge	20	24 Dollars		Future Dollars		re Dollars nded)
9.01	Inspections (5 year cycle)	\$ -	0			\$	<u> </u>	Intour	1404/
9.02	Maintenance and Operations	\$ 10,000	0	\$	500,000.00	Ψ \$	1,587,737.67	\$	1,588,00
9.02	Inspections In Depth (every 10yrs)	φ 10,000	10	Ψ	000,000.00	\$	-	\$	-
9.04	Increased Spillway Capacity (10yrs)		10	\$	-	\$	-	\$	-
9.05	Major rehabilitation/repairs	\$ 1,500,000	50	\$	1,500,000.00		10,660,025		10,661,00
0.00		φ 1,000,000	Subtotal	\$	2,000,000		12,247,763		12,248,00
				Ť	_,,	-	, ,		
	Flat Rock Dam Estimated 50-year Life	Cycle Cost with Curr	ent Regulation	s\$	13,343,240	\$	23,591,002.69	\$	23,592,00
0	50-Year Life Cycle Regulatory Requirements -	Legislation change		20	24 Dollars		Future Dollars		re Dollars nded)
10.01	Inspections (5 year cycle)	\$ 10,000	10	\$	100,000	\$	342,932		343,00
10.02	Maintenance and Operations	\$ 10,000	0	\$	500,000		1,587,738		1,588,00
10.03	Licensing and Insurance Requirements (annual)								
	v	\$ 10,000	0	\$	500,000	\$	1,587,738		1,588,00
10.04	Major rehabilitation/repairs	\$ 1,500,000	50	\$	1,500,000	\$	10,660,025		10,661,00
			Subtotal	\$	2,600,000		14,178,432		14,180,00
	Flat Rock Dam Estimated 50-year Life				13,943,240		25,521,672.02		25,526,00

Opinion of Probable Cost - Conceptual Design Flat Rock/Huroc Dam Disposition Feasibility Study Partial Dam Removal

		HUROC DAM						
<u>ltem</u>	Description	Quantity	<u>Units</u>	Unit Price		Total Cost		<u>Total Cost</u> (Rounded)
0.00	General Conditions							(Rounded)
0.01	Contractor Mobilization / Demobilization							
	Includes: Bonds & Insurance, Permits, Project	1	LS	\$ 107,000	¢	107.000	¢	107.000
	Management, Temp Facilities, Project	1	LS	φ 107,000	\$	107,000	\$	107,000
	Survey/Layout, Indirect Costs							
				Subtota	I \$	107,000	\$	107,000
	011 . D							
1.00 1.01	Site Prep Erosion and Sediment Control	1	LS	\$ 12,500	¢	12,500	¢	10.000
	Temporary Access Roads, Facilities and			\$ 12,500	Ф	12,500	¢	10,000
1.02	Lavdown Areas	1	LS	\$ 50,000	\$	50,000	\$	50,000
1.03	Clearing and Grubbing	1	AC	\$ 6,250		6,250		7,000
				Subtotal	\$	68,750		67,000
4.00	Huroc Demolition and Water Management	4	1.0	¢ 005.000	¢	225.000	¢	225.000
4.01	Incremental Demolition and Construction Dewate	1	LS	\$ 225,000 \$ 120		225,000		225,000 43,000
4.02	Temporary Cofferdam	358	CY			42,960		,
4.03	Clearing and Grubbing	1	AC	\$ 25,000 Subtotal	\$ \$	25,000 292,960		25,000 293,000
				Custotai	•	202,000		200,000
5.00	Huroc Rock Arch Rapids Construction							
5.01	Armor Stone, Rapids	1,200	CY	\$ 150		180,000		180,000
5.02	Chinking Stone, Rapids	500	CY	\$ 88		44,000		44,000
5.03	Weir Boulders, Rapids	85	EA	\$ 500		42,500		43,000
5.04	Excavation, Rapids	91	CY	\$ 40		3,640		4,000
5.05	High Terrace Fill, Floodplain and Portage	800	CY	\$ 15		12,000		12,000
5.09	MDOT 23A, Boulder Rapids	250	CY	\$ 65	\$	16,250	\$	17,000
5.10	Rebar Anchored Weir Boulders, Rapids	58	EA	\$ 600	\$	34,800	\$	35,000
5.11	Site Restoration	1	AC	\$ 15,000	\$	15,000		15,000
				Subtotal	\$	348,190	\$	350,000
				Construction Subtota	1\$	816,900	\$	817,000
6.00	Unknown Scope Items			30%	\$	245,070		246,000
044 0	-4			Construction Total:	\$	1,061,970	\$	1,063,000
Other Co: 7.00	Engineering Design and Permitting			10%	\$	81,690	\$	82,000
8.00	Engineering and Construction Observation			10%	\$	81,690		82,000
0.00		Huroc Dam Estim	ated Design an	d Construction Cos		1,225,350		1,227,000
			3			-,,		-,,
9	50-Year Life Cycle Regulatory Requirements -	No Legislation Cha	nae	2024 Dollars		Future Dollars		ure Dollars
0.01		-			¢		(Roi	unded)
9.01 9.02	Inspections (5 year cycle)	\$ - \$ 10,000	0	\$ 500,000.00	\$ \$	1,587,737.67	¢	1 599 000
9.02	Maintenance and Operations	φ 10,000	10	\$ 500,000.00	ֆ \$	1,307,737.07	\$ \$	1,588,000
9.03	Inspections In Depth (every 10yrs) Increased Spillway Capacity (10yrs)		10		ֆ \$	-	ֆ \$	-
						-		-
9.05	Major rehabilitation/repairs		50 Subtotal	\$ 500,000	\$	1,587,738	\$ \$	1,588,000
			Gabtotal	+ 000,000		1,001,100	.	1,000,000
	Huroc Dam Total Estimated 50-year Life C	ycle Cost with Cur	rent Regulation	s \$ 1,725,350	\$	2,813,087.67	\$	2,815,000
							Fut	ure Dollars
10	50-Year Life Cycle Regulatory Requirements -	Legislation change	1	2024 Dollars		Future Dollars		unded)
10.01	Inspections (5 year cycle)		10				\$	-
10.02	Maintenance and Operations	\$ 10,000	0	\$ 500,000	\$	1,587,738	\$	1,588,000
10.03	Licensing and Insurance Requirements (annual)		0				\$	-
10.04	Major rehabilitation/repairs		0 50				\$	
					_			
10.04			Subtotal	\$ 500,000	\$	1,587,738	\$	1,588,000
10.04	Huroc Dam Estimated 50-year Life					2,813,087.67		2,815,000

	2024 Dollars	Future Dollars
TOTAL ESTIMATED DESIGN AND CONSTRUCTION COST (FLAT ROCK AND HUROC)	\$ 12,573,000	\$ 12,573,000
Total Estimated 50-year Life Cycle Cost with Current Regulations	\$ 2,500,000	\$ 13,836,000
Total Estimated 50-year Life Cycle Cost with Legislation Change	\$ 3,100,000	\$ 15,768,000
TOTAL W/ CONSTRUCTION COSTS (No legislation change)	\$ 15,069,000	\$ 26,407,000
TOTAL W/ CONSTRUCTION COSTS (with legislation change)	\$ 15,670,000	\$ 28,341,000

Flat Rock/Huroc Dam Disposition Feasibility Study Dam Removal - Active Restoration

Project	OF PROBABLE COST - CONCEPTUAL DESIGN : Flat Rock-Huroc Dam Disposition Feasibility Study : Huron-Clinton Metropolitian Authority Dam Removal - Active Restoration			Project No.: Date: Estimated by: Checked by:		2302140 7/29/2024 LH JMM
<u>ltem</u>	Description	Flat Rock Dam Quantity	<u>Units</u>	Unit Price	Total Cost	<u>Total Cost</u> (Rounded)
0.00	General Conditions	-	1.0	A A A A A A A A A A	A	A
0.01	Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp	1	LS	\$ 3,225,000 \$ -	\$ 3,225,000 \$ -	\$ 3,230,000 \$ -
	Facilities, Project Survey/Layout, Indirect Costs	1	LS	\$ - \$ -	\$ -	\$ -
			20	Subtotal		1
						-, -,,
1.00	Site Prep					
1.01	Erosion and Sediment Control	1	LS	\$ 170,000		
1.02	Temporary Access Roads, Facilities and Laydown Areas	1	LS	\$ 425,000 \$ 25,000	\$ 425,000	
1.03	Clearing and Grubbing	9	AC	\$ 25,000 Subtotal	\$ 212,500 \$ 807,500	
2.00	Water Management					
2.00	Incremental Demolition and Construction Dewatering	1	LS	\$ 645,000	\$ 645,000	\$ 650,000
		·		Subtotal	\$ 645,000	
3.00	Dam Removal					
3.01	Dam Demolition	33	DAYS	\$ 10,000	\$ 330,000	
3.02	Excavation for River Channel and Floodplain	380,135	CY	\$ 40 Subtotal	\$ 15,205,400 \$ 15,535,400	
				Subtotal	\$ 15,535,400	\$ 15,540,000
4.00	Stream Restoration					
4.01	Engineered Bank Protection - Type C	3,114	LFT	\$ 600	\$ 1,868,400	\$ 1,870,000
4.02	Engineered Bank Protection - Type B	3,340	LFT	\$ 133	\$ 444,220	\$ 450,000
4.03	Non-Engineered Bank Protection - Type A	17,766	LFT		\$ 426,384	
4.04	Riffles	12	EA		\$ 1,200,000	
4.05	Upland Restoration	68	ACRE		\$ 272,000	
4.06	Floodplain Restoration	43	ACRE	\$ 7,000 Subtotal	\$ 301,000 \$ 4,512,004	
			Cons	struction Subtotal		
5.00	Unknown Scope Items		0011	30%	\$ 7,417,471	
			Co	nstruction Total:		
Other Co						
6.00	Engineering Design and Permitting			10%	\$ 2,472,490	
7.00	Engineering and Construction Observation	Total Estim	ated Design and C	10% Construction Cost	\$ 2,472,490 \$ 37,087,356	
•		Total Estim	alea Design and e		· · · ·	Future Dollars
8	50-Year Life Cycle Costs	•	-	2024 Dollars	Future Dollars	(Rounded)
8.01	Invasive Species Management	\$ -	0 Subtotal	\$ 1,309,800 \$ 1,309,800	+ -, - ,	\$ 3,255,000
	Elet Pook Dom Ectimated 50	voor Life Cycle Cost y	with Construction	¢ 29 207 156	\$ 40,341,408.51	
	Flat Rock Dam Estimated 50-y	year Life Cycle Cost (with Construction	\$ 36,397,130	\$ 40,341,408.51	\$ 40,342,000
		HUROC DAM				
Item	Description	Quantity	Units	Unit Price	Total Cost	Total Cost
		<u>-quantity</u>	<u>onito</u>	<u>- 01111100</u>	<u></u>	(Rounded)
0.00	General Conditions Contractor Mobilization / Demobilization	1	LS	\$ 247,000	\$ 247,000	\$ 250,000
0.01	Includes: Bonds & Insurance, Permits, Project Management, Temp	1	LS	\$ -	\$ -	\$ -
	Facilities, Project Survey/Layout, Indirect Costs	1	LS	\$ -	\$ -	\$ -
				Subtotal	\$ 247,000	\$ 250,000
1.00	Site Prep					
1.01	Erosion and Sediment Control	1	LS	\$ 30,000		
1.02	Temporary Access Roads, Facilities and Laydown Areas	1	LS	\$ 75,000		
1.03	Clearing and Grubbing	1	AC	\$ 25,000 Subtotal		
				Subtotal	\$ 130,000	\$ 130,000
	Water Management					
2.00	Incremental Demolition and Construction Dewatering	1	LS	\$ 75,000	\$ 75,000	\$ 80,000
2.00 2.00	incremental Demonitori and Construction Dematoring			Subtotal	\$ 75,000	
2.00						
2.00 3.00	Dam Removal					
2.00 3.00 3.01	Dam Removal Dam Demolition	5	DAYS	\$ 10,000		
2.00 3.00	Dam Removal	5 689	DAYS CY	\$ 10,000 \$ 40 Subtotal		\$ 30,000

Flat Rock/Huroc Dam Disposition Feasibility Study Dam Removal - Active Restoration

4.00	Stream Restoration					
4.01	Engineered Bank Protection - Type C	1,690	LFT	\$ 600	\$ 1,014,000	\$ 1,020,000
4.02	Engineered Bank Protection - Type B	1,690	LFT	\$ 133	\$ 224,770	\$ 230,000
4.03	Non-Engineered Bank Protection - Type A	-	LFT	\$ 24	\$ -	\$ -
4.04	Riffles	1	EA	\$ 100,000	\$ 100,000	\$ 100,000
4.05	Upland Restoration	4	ACRE	\$ 4,000	\$ 15,029	\$ 20,000
4.06	Floodplain Restoration	1	ACRE	\$ 7,000	\$ 9,234	\$ 10,000
				Subtotal	\$ 1,363,033	\$ 1,370,000
			Cons	struction Subtotal	\$ 1,892,573	\$ 1,900,000
5.00	Unknown Scope Items			30%	\$ 567,772	\$ 570,000
			Co	Instruction Total:	\$ 2,460,345	\$ 2,470,000
Other Co	sts:					
6.00	Engineering Design and Permitting			10%	\$ 189,257	\$ 190,000
7.00	Engineering and Construction Observation			10%	\$ 189,257	\$ 190,000
		Total Estim	ated Design and C	Construction Cost	\$ 2,838,859	\$ 2,850,000

8	50-Year Life Cycle Costs			202	24 Dollars	F	uture Dollars	Futur (Rour	e Dollars 1ded)
8.01	Invasive Species Management	\$ 59,000	1	\$	59,000	\$	146,579		
			Subtotal	\$	59,000	\$	146,579	\$	147,000
	Huroc Dam Estimated 50-	year Life Cycle Cost	with Construction	\$	2,897,859	\$	2,985,438.33	\$	2,986,000
	TOTAL ESTIMATED DESIGN AND CONSTRUCTION COST			\$	39,926,215	\$	39,926,215		
	TOTAL 50-YEAR LIFE CYCLE COST			\$	1,368,800	\$	3,400,631		
	TOTAL COST (INCLUDING INITIAL CONSTRUCTION)			\$	41,295,015	\$	43,326,847		

Opinion of Probable Cost - Conceptual Design Flat Rock/Huroc Dam Disposition Feasibility Study Dam Removal - Passive Restoration

	OF PROBABLE COST - CONCEPTUAL DESIGN : Flat Rock-Huroc Dam Disposition Feasibility Study : Huron-Clinton Metropolitian Authority Dam Removal - Passive Restoration			Project No.: Date: Estimated by: Checked by:			
<u>ltem</u>	FL Description	AT ROCK DAM Quantity	Units	Unit Price	Total Cost		Total Cost
.00	General Conditions						(Rounded)
0.01	Contractor Mobilization / Demobilization	1	LS	\$ 2,571,000	\$ 2,571,000	\$	2,571,000
	Includes: Bonds & Insurance, Permits, Project Management, Temp	1	LS	\$-	\$-	\$	-
	Facilities, Project Survey/Layout, Indirect Costs	1	LS	\$-	\$-	\$	-
				Subtotal	\$ 2,571,000	\$	2,580,000
.00	Site Prep						
1.01	Erosion and Sediment Control	1	LS	\$ 170,000	\$ 170,000	\$	170,000
1.02	Temporary Access Roads, Facilities and Laydown Areas	1	LS	\$ 425,000	. ,		430,000
1.03	Clearing and Grubbing	9	AC	\$ 25,000	\$ 225,000	\$	230,000
				Subtotal	\$ 820,000	\$	820,000
2.00	Water Management	-	1.0	¢ 045.000	¢ 045.000		050.000
2.01	Incremental Demolition and Construction Dewatering	1	LS	\$ 645,000 Subtotal	\$ 645,000 \$ 645.000		650,000 650,000
				Subtotal	\$ 645,000	Э	000,000
.00	Dam Removal						
3.01	Dam Demolition	33	DAYS	\$ 10,000	\$ 330,000	\$	330,000
3.02	Excavation for Pilot Channel	361,000	CY	\$ 40	\$ 14,440,000		14,440,000
				Subtotal	\$ 14,770,000	\$	14,770,000
.00	Stream Restoration			Å	A Baaaaa		= / 0 0 0 0
4.01	Engineered Bank Protection - Type C	1,180	LFT LFT	\$ 600	. ,		710,000
4.02	Engineered Bank Protection - Type B Riffles	- 2	EA	\$ 133 \$ 100,000		\$	200,000
4.05	Kines	2	LA	Subtotal	\$ 200,000 \$ 908,000		<u>910,000</u>
			Cons	truction Subtotal	. ,		19,730,000
5.00	Contingency			30%	\$ 5,914,200		5,910,000
			Co	nstruction Total:	\$ 25,628,200	\$	25,640,000
Other Cos							
6.00	Engineering Design and Permitting			10%	\$ 1,971,400		1,970,000
7.00	Engineering and Construction Observation	Total Estimator	d Dosign and C	10% Construction Cost	\$ 1,971,400 \$ 29,571,000		<u>1,970,000</u> 29,580,000
		Total Estimated	a Design and C		φ 29,571,000	φ	29,300,000
							ure Dollars
	FO Versul Me Oriela Oriela			0004 D - II	Estern Dellens	Fut	
3	50-Year Life Cycle Costs			2024 Dollars	Future Dollars		ounded)
8.01	50-Year Life Cycle Costs Invasive Species Management	\$ 1,554,000	1	\$ 1,554,000	\$ 3,536,794	(Ro \$	ounded) 3,537,000
	-	\$ 1,554,000	1 Subtotal		\$ 3,536,794	(Ro \$	ounded) 3,537,000
	Invasive Species Management	, , , , , , , , , , , , , , , , , , ,	Subtotal	\$ 1,554,000 \$ 1,554,000	\$ 3,536,794 \$ 3,536,794	(Ro \$ \$	ounded) 3,537,000 3,537,000
	-	, , , , , , , , , , , , , , , , , , ,	Subtotal	\$ 1,554,000 \$ 1,554,000	\$ 3,536,794	(Ro \$ \$	
	Invasive Species Management Flat Rock Dam Estimated 50-year Life	, , , , , , , , , , , , , , , , , , ,	Subtotal	\$ 1,554,000 \$ 1,554,000	\$ 3,536,794 \$ 3,536,794	(Ro \$ \$	ounded) 3,537,000 3,537,000
8.01	Invasive Species Management Flat Rock Dam Estimated 50-year Life	e Cycle Cost with HUROC DAM	Subtotal	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02	(Ro \$ \$	ounded) 3,537,000 3,537,000
8.01	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description	e Cycle Cost with	Subtotal	\$ 1,554,000 \$ 1,554,000	\$ 3,536,794 \$ 3,536,794	(Ro \$ \$	ounded) 3,537,000 3,537,000 33,108,000
8.01 <u>Item</u>	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions	e Cycle Cost with HUROC DAM Quantity	Subtotal Construction	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 <u>Unit Price</u>	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u>	(Ro \$ \$ \$	vunded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded)
8.01	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization	e Cycle Cost with HUROC DAM Quantity 1	Subtotal Construction <u>Units</u> LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 <u>Unit Price</u> \$ 150,000	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000	(Ro \$ \$ \$	vunded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000
8.01 <u>Item</u>	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp	e Cycle Cost with HUROC DAM Quantity 1 1	Subtotal Construction Units LS LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 <u>Unit Price</u> \$ 150,000 \$ -	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ -	(Ro \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 -
8.01 <u>Item</u>	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization	e Cycle Cost with HUROC DAM Quantity 1	Subtotal Construction <u>Units</u> LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 <u>Unit Price</u> \$ 150,000 \$ - \$ -	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ -	(Ro \$ \$ \$ \$	vunded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - -
8.01 <u>Item</u>	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs	e Cycle Cost with HUROC DAM Quantity 1 1	Subtotal Construction Units LS LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 <u>Unit Price</u> \$ 150,000 \$ -	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ -	(Ro \$ \$ \$ \$	vunded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000
8.01 <u>Item</u> 0.00 0.01	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep	e Cycle Cost with HUROC DAM Quantity 1 1 1	Subtotal Construction Units LS LS LS LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 <u>Unit Price</u> \$ 150,000 \$ - \$ - Subtotal	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - 150,000
8.01 <u>Item</u> 0.00 0.01 .00 1.01	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control	e Cycle Cost with HUROC DAM Quantity 1 1 1 1	Subtotal Construction Units LS LS LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 \$ 150,000 \$ - \$ - \$ - \$ Subtotal \$ 30,000	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ - \$ 30,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - 150,000 30,000
8.01 <u>Item</u> 0.00 0.01 .00 1.01 1.02	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control Temporary Access Roads, Facilities and Laydown Areas	e Cycle Cost with HUROC DAM Quantity 1 1 1 1 1 1	Subtotal Construction Units LS LS LS LS LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 <u>Unit Price</u> \$ 150,000 \$ - \$ - Subtotal \$ 30,000 \$ 75,000	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ - \$ 30,000 \$ 75,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - 150,000 30,000 80,000
8.01 <u>Item</u> 0.00 0.01 .00 1.01	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control	e Cycle Cost with HUROC DAM Quantity 1 1 1 1	Subtotal Construction Units LS LS LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 Unit Price \$ 150,000 \$ - \$ - Subtotal \$ 30,000 \$ 75,000 \$ 25,000	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ - \$ 30,000 \$ 75,000 \$ 25,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - 150,000 30,000 80,000 30,000
8.01 <u>Item</u> 0.00 0.01 .00 1.01 1.02	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control Temporary Access Roads, Facilities and Laydown Areas	e Cycle Cost with HUROC DAM Quantity 1 1 1 1 1 1	Subtotal Construction Units LS LS LS LS LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 <u>Unit Price</u> \$ 150,000 \$ - \$ - Subtotal \$ 30,000 \$ 75,000	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ - \$ 30,000 \$ 75,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - 150,000 30,000 80,000 30,000
8.01 <u>Item</u> 0.00 0.01 1.01 1.02 1.03	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control Temporary Access Roads, Facilities and Laydown Areas Clearing and Grubbing	e Cycle Cost with HUROC DAM Quantity 1 1 1 1 1 1	Subtotal Construction Units LS LS LS LS LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 Unit Price \$ 150,000 \$ - \$ - Subtotal \$ 30,000 \$ 75,000 \$ 25,000	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ - \$ 30,000 \$ 75,000 \$ 25,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - 150,000 30,000 80,000
8.01 <u>Item</u> 0.00 0.01 .00 1.01 1.02	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control Temporary Access Roads, Facilities and Laydown Areas	e Cycle Cost with HUROC DAM Quantity 1 1 1 1 1 1	Subtotal Construction Units LS LS LS LS LS	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 Unit Price \$ 150,000 \$ - \$ - Subtotal \$ 30,000 \$ 75,000 \$ 25,000	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ 30,000 \$ 75,000 \$ 25,000 \$ 130,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - 150,000 30,000 30,000 130,000
8.01 <u>Item</u> 0.00 0.01 1.01 1.02 1.03 2.00	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control Temporary Access Roads, Facilities and Laydown Areas Clearing and Grubbing Water Management	e Cycle Cost with HUROC DAM Quantity 1 1 1 1 1 1 1	Subtotal Construction Units LS LS LS LS LS AC	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 \$ 150,000 \$ - \$ 150,000 \$ - \$ 30,000 \$ 75,000 \$ 25,000 \$ 25,000 \$ ubtotal	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ 30,000 \$ 75,000 \$ 25,000 \$ 130,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - 150,000 30,000 80,000 30,000
8.01 Item 0.00 0.01 1.01 1.02 1.03 2.01	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control Temporary Access Roads, Facilities and Laydown Areas Clearing and Grubbing Water Management Incremental Demolition and Construction Dewatering	e Cycle Cost with HUROC DAM Quantity 1 1 1 1 1 1 1	Subtotal Construction Units LS LS LS LS LS AC	 \$ 1,554,000 \$ 1,554,000 \$ 31,125,000 \$ 150,000 \$ - \$ - \$ 0,000 \$ - \$ 0,000 \$ 75,000 \$ 25,000 \$ Subtotal \$ 30,000 	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ - \$ 30,000 \$ 75,000 \$ 25,000 \$ 130,000 \$ 75,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - - 150,000 30,000 80,000 130,000 80,000 130,000
8.01 <u>Item</u> .00 0.01 1.01 1.02 1.03 .00 2.01 .00	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control Temporary Access Roads, Facilities and Laydown Areas Clearing and Grubbing Water Management Incremental Demolition and Construction Dewatering Dam Removal	e Cycle Cost with HUROC DAM Quantity 1 1 1 1 1 1 1 1 1	Subtotal Construction Units LS LS LS LS LS AC	\$ 1,554,000 \$ 1,554,000 \$ 31,125,000 \$ 150,000 \$ - \$ 150,000 \$ - \$ - \$ 30,000 \$ 75,000 \$ 25,000 \$ 25,000	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ - \$ 30,000 \$ 75,000 \$ 25,000 \$ 130,000 \$ 75,000 \$ 75,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - 150,000 30,000 80,000 30,000 80,000 80,000 80,000
8.01 <u>Item</u> 0.00 0.01 1.01 1.02 1.03 .00	Invasive Species Management Flat Rock Dam Estimated 50-year Life Description General Conditions Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs Site Prep Erosion and Sediment Control Temporary Access Roads, Facilities and Laydown Areas Clearing and Grubbing Water Management Incremental Demolition and Construction Dewatering	e Cycle Cost with HUROC DAM Quantity 1 1 1 1 1 1 1	Subtotal Construction Units LS LS LS LS LS AC	 \$ 1,554,000 \$ 1,554,000 \$ 31,125,000 \$ 150,000 \$ - \$ - \$ 0,000 \$ - \$ 0,000 \$ 75,000 \$ 25,000 \$ Subtotal \$ 30,000 	\$ 3,536,794 \$ 3,536,794 \$ 33,107,794.02 <u>Total Cost</u> \$ 150,000 \$ - \$ - \$ 150,000 \$ 75,000 \$ 25,000 \$ 130,000 \$ 75,000 \$ 75,000 \$ 75,000 \$ 75,000 \$ 50,000	(Ro \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	punded) 3,537,000 3,537,000 33,108,000 <u>Total Cost</u> (Rounded) 150,000 - - 150,000 30,000 80,000 130,000 80,000

Opinion of Probable Cost - Conceptual Design Flat Rock/Huroc Dam Disposition Feasibility Study Dam Removal - Passive Restoration

4 00	Streem Destaution							
4.00	Stream Restoration	945		¢ 600	¢	507,000	¢	E10.000
4.01	Engineered Bank Protection - Type C	845	LFT	\$ 600	\$,		510,000
4.02	Engineered Bank Protection - Type B	845	LFT	\$ 133	\$	112,385		120,000
4.03	Riffles	1	EA	\$ 100,000	\$	100,000	- · · · · · · · · · · · · · · · · · · ·	100,000
				Subtotal	\$	719,385	\$	730,000
			Cons	struction Subtotal	\$ 1	,150,548	\$	1,170,000
5.00	Contingency			30%	\$	345,164	\$	350,000
			Co	nstruction Total:	\$ 1	,495,712	\$	1,520,000
Other Co	sts:							
6.00	Engineering Design and Permitting			10%	\$	115,055	\$	120,000
7.00	Engineering and Construction Observation			10%	\$	115,055	\$	120,000
		Total Estimate	d Design and C	onstruction Cost	\$ 1	,725,822	\$	1,730,000
8	50-Year Life Cycle Costs			2024 Dollars	Future	Dollare	Futur	e Dollars
0	SU-Tear Life Cycle Costs			2024 D011d1 S	Future	Dollars	(Rour	nded)
8.01	Invasive Species Management	\$ 70,000	1	\$ 70,000	\$	159,315	\$	160,000
			Subtotal	\$ 70,000	\$	159,315	\$	160,000
	Huroc Dam Estimated 50-year Life	e Cycle Cost wit	h Construction	\$ 1,795,822	\$ 1,88	5,137.05	\$	1,886,000
	TOTAL ESTIMATED DESIGN AND CONSTRUCTION COST			\$ 31,296,822	\$ 31	,296,822	\$	31,297,000
	TOTAL 50-YEAR LIFE CYCLE COST			\$ 1,624,000		,696,109		3,697,000
				. , ,	· ·			
	TOTAL COST (INCLUDING INITIAL CONSTRUCTION)			\$ 32,920,822	P 34	,992,931	Þ	34,993,000

•	t: Flat Rock-Huroc Dam Disposition Feasibility Study t: Huron-Clinton Metropolitian Authority Sea Lamprey Barrier at Huroc Dam- Alternative A				Project No.: Date: Estimated by: Checked by:				
<u>ltem</u>	Description	Quantity	<u>Units</u>		Unit Price		Total Cost		Total Cost (Rounded)
.00	General Conditions								
0.01	Contractor Mobilization / Demobilization								
	Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs	1	LS	\$	546,000	\$	546,000	\$	546,000
0.02	Temporary Care-of-Water (5%) (less mobilization)				5%	\$	181,841	\$	180,000
0.02					Subtotal	- T	727,841		726,00
					Gubtotui	Ψ	727,041	Ψ	720,000
.00	Primary Structure								
1.01	Structural Concrete	504	CY	\$	2,000	\$	1,007,407	\$	1,010,00
1.02	Excavation/Fill	1,111	CY	\$	40	\$	44,444	\$	40,00
1.03	Site Preparation and Grading	2.444	SY	\$	20	\$	48,880	\$	50,00
1.00	Riprap	1,022	CY	\$	155	\$	158.410		160.00
1.05	Adjustable Gates	112	LF	\$	4,200	\$	470,400		470,00
				-	Subtotal	\$	1,729,542		1,730,00
.00	Fishway								
2.01	Structural Concrete	156	CY	\$	2,000	\$	311,111	\$	310,00
2.02	Excavation/Fill	622	CY	\$	40	\$	24,889	\$	20,00
2.03	Alluvium Backfill	370	CY	\$	160	\$	59,259	\$	60,00
2.04	Site Preparation and Grading	278	SY	\$	20	\$	5,560	\$	10,00
2.05	Adjustable Gates	36	LF	\$	4,200	\$	151,200	\$	150,00
					Subtotal	\$	552,019	\$	550,00
.00	Berm								
3.01	Excavation/Fill	8,556	CY	\$	35	\$	299,444	\$	300.00
3.02	Riprap	2,444	CY	\$	155	\$	378,889	\$	380,00
3.03	Seeding	35,000	SF	\$	0.57	\$	20,090	\$	20,00
					Subtotal	\$	698,423	\$	700,00
00	Additional								
.00 4.01	Additional Control House	1	EA	\$	150,000	\$	150,000	\$	150,00
4.01	Site Security	1	EA	ֆ \$	50.000	ֆ \$	50.000	ֆ \$	50.00
4.02	Access Corridor/Pathway	1	EA	ֆ \$	50,000	э \$	50,000		50,00
4.03	Electrical	1	EA	\$	150,000	э \$	150,000		150,00
4.04	Telemetry	1	EA	\$	50,000	\$	50,000	\$	50,00
4.06	Testing and Calibration	1	EA	\$	200,000	\$	200,000	\$	200,00
4.07	Reseeding	12,000	SF	\$	0.57	· · ·	6,840		10,00
4.07	Rescourig	12,000	01	Ψ	Subtotal	\$	656.840	\$	660.00
			Con	stru	ction Subtotal	Ŧ	4,364,666	\$	4,366,00
5.00	Contingency				30%	\$	1,309,400	\$	1,309,80
			C	onst	ruction Total:	\$	5,674,065	\$	5,675,80
ther Co	sts:								,,
6.00	Engineering Design and Permitting				10%	\$	436,467	\$	436,60
7.00	Engineering and Construction Observation				10%	\$	436,467	\$	436,60
		Estimated De	eign and	Con	struction Cost	¢	6,546,999	\$	6,549,00

	t: Flat Rock-Huroc Dam Disposition Feasibility Study t: Huron-Clinton Metropolitian Authority Sea Lamprey Barrier at Flat Rock Dam- Alternative B			I	Project No.: Date: Estimated by: Checked by:				
<u>ltem</u>	Description	Quantity	<u>Units</u>	-	Unit Price		Total Cost		<u>Total Cost</u> (Rounded)
0.00	General Conditions								
0.01	Contractor Mobilization / Demobilization								
	Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs	1	LS	\$	737,000	\$	737,000	\$	737,000
0.02	Temporary Care-of-Water (5%) (less mobilization)	1			5%	\$	245,661	\$	250,000
					Subtotal	\$	982,661		987,000
.00	Primary Structure								
1.01	Structural Concrete	881	CY	\$	2,000	\$	1,762,963	\$	1,760,000
1.02	SSP	4,294	SF	\$	61	\$	261,922		260,000
1.03	Excavation/Fill	13,630	CY	\$	40	\$	545,185	\$	550,000
1.04	Site Preparation and Grading	5,111	SY	\$	10	\$	51,110	\$	50,000
1.05	Riprap	2,874	CY	\$	155	\$	445,481	\$	450,000
1.06	Adjustable Gates	200	LF	\$	4,200	\$	840,000	\$	840,000
					Subtotal	\$	3,906,661	\$	3,910,000
2.00	Fishway								
2.01	Structural Concrete	102	CY	\$	2,000	\$	204,444		200,000
2.02	Excavation/Fill	256	CY	\$	40	\$	10,222	\$	10,000
2.03	Site Preparation and Grading	333	SY	\$	20	\$	6,660		10,000
2.04	Adjustable Gates	24	LF	\$	4,200	\$	100,800		101,000
				-	Subtotal	\$	322,127	\$	321,000
3.00	Additional								
3.01	Control House	1	EA	\$	150,000	\$	150,000	\$	150,000
3.02	Site Security	1	EA	\$	50,000	\$	50,000		50,000
3.03	Access Corridor/Pathway	1	EA	\$	50,000	\$	50,000		50,000
3.04	Electrical	1	EA	\$	150,000	\$	150,000		150,000
3.05	Telemetry	1	EA	\$	50.000	\$	50.000		50.000
3.06	Testing and Calibration	1	EA	\$	200,000	\$	200,000	\$	200,000
3.07	Reseeding	60,000	SF	\$	0.57	\$	34,440	\$	35,000
	- C				Subtotal	\$	684,440	\$	685,000
			Con	struc	tion Subtotal	\$	5,895,890	\$	5,903,000
4.00	Contingency				30%	\$	1,768,767	\$	1,770,900
	5 ,	ſ	Co	onstr	uction Total:	\$	7,664,656	\$	7,673,900
Other Co	sts:								
5.00	Engineering Design and Permitting				10%	\$	589,589	\$	590,300
6.00	Engineering and Construction Observation				10%	\$	589,589	\$	590,300
		Estimated De	sign and	Cons	truction Cost		8,843,834	\$	8,854,500
		= =				т	-,, - -	Ŧ	-,,-

gineering judgment, and/or published cost data. Client administrative/engineering costs and regulatory fees not included. Actual bids and total project costs may vary based on contractor's perceived risk, site access, season, market conditions, etc. No warranties concerning the accuracy of costs presented herein are expressed or implied. Future dollars is calculated using an inflation rate of 5% per year over 50 years where applicable.

DPINION OF PROBABLE COST - CONCEPTUAL DESIGN Project: Flat Rock-Huroc Dam Disposition Feasibility Study Client: Huron-Clinton Metropolitian Authority Sea Lamprey Electrical Barrier- Alternative C				Project No.: Date: Estimated by: Checked by:				2302140 4/11/2024 LH/MS JMM	
<u>ltem</u>	Description	Quantity	<u>Units</u>	Unit Price			Total Cost	<u>Total Cost</u> (Rounded)	
).00	General Conditions								
0.01	Contractor Mobilization / Demobilization Includes: Bonds & Insurance, Permits, Project Management, Temp Facilities, Project Survey/Layout, Indirect Costs	1	LS	\$	434,000	\$	434,000	\$	434,000
0.02	Temporary Care-of-Water (5%) (less mobilization)	1 1			5%	\$	144,773	¢	150,000
0.02					Subtotal		578,773		584,000
.00	Primary Structure								
1.01	Structural Concrete	215	CY	\$	2,000	\$	429,630	\$	430,000
1.02	Excavation/Fill	519	CY	\$	40	\$	20,741	\$	20,000
1.03	Site Preparation and Grading	1,444	SY	\$	10	\$	14,444	\$	15,000
1.04	Riprap	1,363	CY	\$	155	\$	211,259	\$	212,000
1.05	DC Electrical Barrier	1	EA	\$	1,000,000	\$	1,000,000	\$	1,000,000
					Subtotal	\$	1,676,074	\$	1,677,000
.00	Fishway								
2.01	Structural Concrete	233	CY	\$	2,000	\$	466,667	\$	470,000
2.02	Excavation/Fill	622	CY	\$	40	\$	24,889	\$	25,00
2.03	Alluvium Backfill	370	CY	\$	160	\$	59,259	\$	60,00
2.04	Site Preparation and Grading	278	SY	\$	20	\$	5,556	\$	6,00
2.05	Adjustable Gates	36	LF	\$	4,200	\$	151,200	\$	152,000
					Subtotal	\$	707,570	\$	713,000
.00	Additional								
3.01	Control House	1	EA	\$	150,000	\$	150,000	\$	150,000
3.02	Site Security	1	EA	\$	75,000	\$	75,000	\$	80,00
3.03	Access Corridor/Pathway	1	EA	\$	50,000	\$	50,000	\$	50,00
3.04	Electrical	1	EA	\$	150,000	\$	150,000	\$	150,00
3.05	Telemetry	1	EA	\$	15,000	\$	15,000	\$	20,00
3.06	Testing and Calibration	1	EA	\$	50,000	\$	50,000	\$	50,00
3.07	Reseeding	38,000	SF	\$	0.57	\$	21,812	\$	20,00
					Subtotal	\$	511,812	\$	510,000
			Con	stru	ction Subtotal	\$	3,474,229	\$	3,484,000
4.00	Contingency			30%			1,042,269	\$	1,045,200
			C	onst	ruction Total:	\$	4,516,498	\$	4,529,200
ther Co									
5.00	Engineering Design and Permitting				10%	\$	347,423	\$	348,400
6.00	Engineering and Construction Observation				10%	\$	347,423	\$	348,400
	Total Estimated Design and Construction Cost						5,211,344	\$	5,226,00