# CAPITAL IMPROVEMENT PLAN 2021 - 2025

CIP

Updated December 11, 2019 - Approved February 26, 2020 Appendix B - Wastewater Projects



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WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines,

Innovation	Project Status Active	Pipe Gallery
Conceptual WW M	P CIP Type Project	
<ul> <li>Water MP Right Sizir</li> <li>Reliability/Redunda</li> <li>NEWTP Repurposing</li> </ul>	ng  Project New To CIP	
	2	Budget Wastewater
Project Engineer/Manc	ager Nicolas Nicolas	Class Lvl 1 Wastewater
Dire	<b>ctor</b> Philip Kora	Class Lvl 2 WRRF
Managing D	Dept WW Construction Eng	Class Lvl 3 Primary Treatment
Date Original Business	Case Prepared 4/23/2005	
Date Original Business	Case Prepared 6/23/2005	Location City of Detroit
-	ct Added to CIP 1999	Location City of Detroit Fund and Cost Center Wastewater - 5421-892211
Year Projec		Fund and Cost Center Wastewater - 5421-892211
Year Project Problem Statement R Scope of Work / Th Project Alternatives fr	ehabilitation for meeting NPDES Permit a he work to be completed under this proje ipe gallery; providing new lights and em rom rectangular clarifiers 3-12, circular clar	Fund and Cost Center Wastewater - 5421-892211
Year Project Problem Statement R Scope of Work / Th Project Alternatives fr C E	ehabilitation for meeting NPDES Permit a he work to be completed under this proje ipe gallery; providing new lights and em com rectangular clarifiers 3-12, circular cl collect drainage and discharge to clarifie	Fund and Cost Center Wastewater - 5421-892211 Ind NEC requirements ect will include installing ventilation and atmospheric control for the ergency lights, etc This work also includes rehabilitation of 12 drain lines arifiers 16 and 16, installation of large manhole with sump pumps to
Year Project Problem Statement R Scope of Work / Th Project Alternatives fr C E	ehabilitation for meeting NPDES Permit a he work to be completed under this proje ipe gallery; providing new lights and em com rectangular clarifiers 3-12, circular cl collect drainage and discharge to clarifie lectrical/Mechanical Building.	Fund and Cost Center Wastewater - 5421-892211 Ind NEC requirements ect will include installing ventilation and atmospheric control for the ergency lights, etc This work also includes rehabilitation of 12 drain lines arifiers 16 and 16, installation of large manhole with sump pumps to

GLWA Great Lakes Water Authority
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WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines,

Phase Construc					Contra	ct CS-	-1484		Status Ac	tive	
Title CS-1484 C	Construction	Assistance									
Phase Budget	Wastewate	er					Cost All	ocation C	TA		
Phase Status	Active						Funding	Source Bo	ond Proce	eds	
Start Date								Fund C	onstructior	n Bond Fund	
End Date						Us	eful Life	>20Yrs? N	0		
С	ost Estimatio	on Information			Tot	. Feder	al Loan /	Amount			\$O
		Cost Est.	Class			Prog	ram/Allc	owance To	ısk Informa	ition	
		Cost Est. I	Date	Р	roject Man	ager					
		Cost Est. S	Source	С	IP Number						
		Cost Est. I	Prepared By	ed By Description							
Cost Tu	(2.2	Fiscal Year	Expens		Fringe Ren	ofitNon	Portopp		Comme	nt	
Cost Ty Engineering Ser	•	FY19-		e \$299	Fringe Ben		reisonne	2021CIP			
Engineering Ser		FY20		\$51 2021CI							
Engineering Ser		FY21		\$46							
		Pho	ise Total Exp	enses	By FY (All	figures	are in S	\$1,000's)			
Prior Yr Actual	FY20	FY21 F	Y22 FY2	23	FY24	FY2	5	FY26+	Total	5-Yr Total	
299	51	46	0	0	0		0	0	396	46	
Phase Task Da	tes										
		ate End Do	ate Duratio	on							
Phase Task Nar	ne start L										

											011001
GLA Great Lakes Water	Authority	W	RRF Reha		WA FY 202 of Prima			ectan	gular Tanl	ks, Drain Lin	211001 es,
<b>hase</b> Construc	tion				Contra	ct PC	-757		Status Ac	tive	
fitle PC-757 Re	habilitatic	on of Primary	/ Clarifiers R	ectangular	Tanks, Drair	n Lines,	Electricc	l/Mechc	anical Buildir	ng and Pipe G	allery
Phase Budget	Wastewa	ater					Cost Allo	cation	CTA		
Phase Status	Active						Funding	Source F	ederal Loa	n Programs	
Start Date			7/18/2016					Fund	mprovemer	nt & Extension I	un
End Date			5/18/2020			Us	eful Life >	20Yrs?	<i>Yes</i>		
				_	Tot	Feder	al Loan A	mount			
		tion Informa			101						
	I		Est. Class		Project Man	-	ram/Allo	wance I	ask Informa	tion	
		Cost	Est. Date			ugei					
Contract		Cost	Est. Source	(	CIP Number						
РМА		Cost	Est. Prepare	d By [	Description						
Cost Ty	ре	Fiscal Ye	ear E>	xpense	Fringe Ben	efitNon	Personne	;	Comme	nt	
Construction		FY19-		\$32,409				2021 CIF	)		
Construction		FY20		\$6,092				2021 CIF	)		
Construction		FY21		\$3,695				2021 CIF	)		
			Phase Toto	al Expense	s By FY (All	figure	s are in S	51,000's)			
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY2	.5	FY26+	Total	5-Yr Total	
32,409	6,092	3,695	0	0	0		0	0	42,196	3,695	
Phase Task Da	les										
Phase Task Nan	ne Start	Date End	d Date D	Duration							
Project Executio			/31/2020	1352							
Project Closeou	† 4/	1/2020 11,	/30/2020	243							

WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines,

Phase not applicable		Contract NA	Status	Closed Out	
Title Prior Year Actual Expenses					
FY 2018 Transfers Out of CWIP \$1	702K				
Phase Budget Wastewater		Cost A	Allocation CTA		
Phase Status Closed Out		Fundir	ng Source		
Start Date			Fund		
End Date		Useful Lif	e >20Yrs? No		
Cost Estimation Info	rmation	Tot. Federal Loa	n Amount		
1	ost Est. Class	Program/A	llowance Task Info	ormation	
	ost Est. Date	Project Manager			
	ost Est. Source	CIP Number			
	ost Est. Prepared By	Description			
Cost Type Fisc	al Year Expense	Fringe BenefitNonPersor	nne Con	nment	
n/a FY19-	\$11,97	74	2021 CIP		
	Phase Total Expen	ses By FY (All figures are i	n \$1,000's)		
Prior Yr Actual FY20 FY2	FY22 FY23	FY24 FY25	FY26+ Toto	al 5-Yr Total	
11,974 0	0 0	0 0 0	0 11,	974 0	

GLWA Great Lakes Water Authority	y
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211001 CIP#

WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines,

<b>hase</b> GLWAE	. ,	roject mar	nagement	-	Contro	act NA			Status Ac	tive			
itle GLWASa	Ilaries												
Phase Budge	H Wastewat	er				C	ost All	ocation C	CTA				
Phase Statu	s Active					Fu	nding	Source F	ederal Loa	n Programs			
Start Date	e		Fund Improvement & Extension Fur										
End Date	e		Useful Life >20Yrs? No										
(	Cost Estimati	ion Informo	ation		То	t. Federal	Loan	Amount			\$0		
	3	Cost	Est. Class			Progra	m/Allo	owance To	ask Informo	ition			
	7/31/2019	Cost	Est. Date		Project Man	ager							
		Cost	Est. Sourc	e	CIP Number	r							
PMA		Cost	Est. Prepa	red By	Description								
				_	<b>-</b> · <b>- -</b>				2				
Cost T		Fiscal Y	ear	Expense	Fringe Ber	etitNonPe	ersonne		Comme	nt			
GLWA Salaries		FY19-		\$38				2021CIP					
GLWA Salaries		FY20		•	\$82 2021CIF								
GLWA Salaries	CIP2021	FY21		\$3	4			2021 CIP					
			Phase To	otal Expens	ses By FY (Al	l figures a	ire in	\$1,000's)					
	FY20	FY21	FY22	FY23	FY24	FY25		FY26+	Total	5-Yr Total			
Prior Yr Actua				) (	0 C		0	0	503	34			



WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines,

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	45,069	6,225	3,775	0	0	0	0	0	55,069	3,775
2020	0	0	25,098	18,724	7,982	3,054	0	0	0	0	0	54,858	11,036
2019	0	10,243	12,983	16,107	8,671	6,033				0	0	54,037	30,811
2018		10,848	12,097	20,990	7,968				0	0	0	51,903	41,055

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP The construction cash flow projection was adjusted based on the latest schedule update/actual progress of work.



## GLWA FY 2021-2025 CIP WRRF PS No. 2 Pumping Improvements - Phase 1

<ul> <li>Innovation</li> <li>Conceptual WW I</li> <li>Water MP Right Size</li> <li>Reliability/Redunction</li> <li>NEWTP Repurposir</li> </ul>	zing dancy Project New To CIP	Pump Station	n 2
	.9	Budget	Wastewater
Project Engineer/Mar	<b>nager</b> Vinod Sharma	Class Lvl 1	Wastewater
Dir	r <b>ector</b> Philip Kora	Class Lvl 2	WRRF
Managing	Dept WW Construction Eng	Class LvI 3	Primary Treatment
Date Original Busines	s Case Prepared 4/30/2003	Location	City of Detroit
Year Proje	ect Added to CIP 2003	Fund and Cost Center	Wastewater - 5421-892211
Problem Statement	Correct drifting issues of pumps and mee	t long term wet weather capaci	ty needs
•	This project involves evaluating and reco Pump Station No. 2 for Pumps Nos. 11 and	<b>.</b> .	ding more reliable pumping capacity at
Other Important Info	Challenges: N/A - Active		
Primary Driver	N/A - Active		
Driver Explanation	N/A - Active		



WRRF PS No. 2 Pumping Improvements - Phase 1

Phase Study c Title CS-1444		-					Contro	act C	S-1444		Status Ac	tive	
Phase Budge	et Waste	ewater							Cost Al	location	СТА		
Phase Statu	<b>us</b> Activo	Active							Funding	Source	Bond Proce	eds	
Start Dat	e	7/20/2010								Fund	Construction	n Bond Fund	
End Dat	е			6/20/2	2019			U	seful Life	>20Yrs?	Yes		
	Cost Esti	mation I	nformc	ation			То	t. Fede	eral Loan	Amount			
		2	Cost	Est. Clo	ass			Pro	gram/All	owance 1	ask Informa	ition	
	10/2/20	017	Cost	Est. Da	Ite		Project Man	ager	Todd Kir	ng			
			Cost	Est. So	urce	(	CIP Number						
Ali Khraizat			Cost	Est. Pre	epared I	Ву	Description						
Cost	Гуре	F	iscal Y	ear	Expe	ense	Fringe Ber	efilNo	Comme	nt			
Engineering Se	ervices	FY1	9-			\$126	\$126 2021CIF						
Engineering Se	ervices	FY2	20			\$66				2021 CIF	)		
				Phase	e Total B	Expense	s By FY (Al	figure	es are in	\$1,000's)			
Prior Yr Actual	FY20	FY	21	FY2	2	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
126		66	0		0	0	0		0	0	192	0	
Phase Task D	ates												
Phase Task No	ame S	tart Date	En	d Date	e Dur	ration							
Project Execu	tion	7/20/201	0 6	/20/20	20	3623							



WRRF PS No. 2 Pumping Improvements - Phase 1

Phase Construc						Contro	act Po	C-795		Status Ac	ctive	
			Pumping	Improveme	ents							
Phase Budget	Wastewa	iter						Cost A	llocation	CTA		
Phase Status	Active							Funding	g Source	Federal Loc	an Programs	
Start Date			10/17/	2016					Fund	mproveme	ent & Extension Fu	in
End Date			6/20/	2019			U	seful Life	e >20Yrs?	Yes		
C	ost Estima	tion Info	rmation		1	То	t. Fede	ral Loan	Amount			
	1	С	ost Est. C	lass			Prog	gram/Al	lowance 1	ask Inform	ation	
7	/31/2019	С	ost Est. D	ate	1	Project Man	ager					
Contract		С	ost Est. So	ource		CIP Number	,					
РМА		С	ost Est. Pr	epared By	Description							
Cost Ty	ре	Fisco	al Year	Expens	se	Fringe Ben	efilNo	nPersonr	ne	Comme	ent	
Construction		FY19-		•	1,599				2021 CIF	IP		
Construction		FY20		\$	1,676							
			Phas	e Total Exp	oense	s By FY (All	figure	es are in	\$1,000's			
Prior Yr Actua	FY20	FY21	FY	22 FY:	23	FY24	FY	25	FY26+	Total	5-Yr Total	
1,599	1,676		0	0	0	0		0	0	3,275	0	
Phase Task Da	les											
Phase Task Nar	ne Start	Date	End Dat	e Durati	on							
Project Executio	n 10/1	7/2016	11/15/2	019	1124							
Project Closeou	11/1	6/2019	6/20/2	020	217							

GLW Great Lakes Water	Authority			-	LWA FY 20 PS No. 2 Pu				nts - Pha	se 1	211002 CIP
Phase not appli				Contract NA					Status C	losed Out	
Title Prior Year	Actual Expe	enses									
Phase Budget	Wastewate	er		Cost Allocation CTA							
Phase Status	Closed Ou	†		Funding Source							
Start Date	Start Date				Fund						
End Date	End Date				Useful Life >20Yrs? No						
C	Cost Estimation Information				То	t. Feder	al Loan	Amount			
	1 Cost Est. Class					Prog	ram/Al	lowance	Task Inform	ation	
		Cost Est. I	Date	Project Manager							
		Cost Est. S	ource	CIP Number							
		Cost Est. I	repare	ed By Description							
Cost Ty	Cost Type Fiscal Year Ex			Expense Fringe BenefilNonPersonne				Comm	ent		
n/a	FY19-			\$108 2021CIP							
	Phase Total Ex			al Expens	es By FY (Al	figures	are in	ı \$1,000's	)		
Prior Yr Actual	FY20	FY21 F	Y22	FY23	FY24	FY2	5	FY26+	Total	5-Yr Total	
108	0	0	0	C	) 0		0	0	108	3 0	

#### Phase Task Dates

GLWA Great Lakes Water Authority			WA FY 2021 5 No. 2 Pum			nts - Phas	e 1	211002 CIP	
Phase GLWA Employees Pro Title GLWA Salaries	oject management		Contrac	NA		Status Ac	tive		
Phase Budget Wastewate	er		Cost Allocation CTA						
Phase Status Active				Fundi	ng Source	Bond Proce	eds		
Start Date					Fund	Constructior	n Bond Fund		
End Date	End Date				fe >20Yrs?	No			
Cost Estimatio	on Information		Tot. I	ederal Loa	in Amount			\$0	
3 Cost Est. Class				Program/A	Allowance	Task Informa	ition		
9/17/2018	Cost Est. Date	1	Project Manag	ger					
	Cost Est. Source	e (	CIP Number						
P. Kora	Cost Est. Prepa	red By	Description						
Cost Type	Fiscal Year	Expense	Fringe Benef	ilNonPersor	nne	Comme	nt		
GLWA Salaries CIP2021	FY19-	\$79	\$79 2021CIP						
GLWA Salaries CIP2021	FY20	\$118			2021 CII	P			
	Phase To	tal Expense	s By FY (All fi	gures are i	in \$1,000's	)			
Prior Yr Actual FY20	FY21 FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total		
79 118	0 (	0	0	0	0	197	0		
Phase Task Dates									



#### WRRF PS No. 2 Pumping Improvements - Phase 1

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	1,912	1,860	0	0	0	0	0	0	3,772	0
2020	0	0	322	2,268	1,222	0	0	0	0	0	0	3,812	1,222
2019	0	109	599	2,454	621					0	0	3,783	3,075
2018	456	1,157	1,304	616					0	0	0	3,533	1,920

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** The project is delayed because of the CFD modeling and shop testing issues.

Changes



## GLWA FY 2021-2025 CIP WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

<ul> <li>Innovation</li> <li>Conceptual WW I</li> <li>Water MP Right Siz</li> <li>Reliability/Redunction</li> <li>NEWTP Repurposir</li> </ul>	zing lancy Project New To CIP	Rack and Grit
	.9	Budget Wastewater
Project Engineer/Mar	nager Partho Ghosh	Class Lvl 1 Wastewater
Dir	ector Philip Kora	Class Lvl 2 WRRF
Managing	Dept WW Construction Eng	Class Lvl 3 Primary Treatment
Date Original Busines	s Case Prepared 3/17/2008	Location City of Detroit
Year Proje	ect Added to CIP 2008	Fund and Cost Center Wastewater - 5421-892211
Problem Statement	Rehabilitate aging rack and grit system for areas	efficient removal of grit to reduce loading on downstream process
	The scope of work includes modifications c Pump Station 1 and MPI Sampling Station 1	nd improvements of the existing grit and screening handling system at
Other Important Info	Challenges: N/A - Active	
Primary Driver	N/A - Active	
Driver Explanation	N/A - Active	



WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

		se not applicable Prior Year Actual Expenses					4		Status Clo	osed Out	
	-										
Phase Budget	Wastewa	ter			Cost Allocation CTA						
Phase Status	Closed O	ut					Fundir	ng Source			
Start Date								Fund			
End Date	End Date					Us	seful Lif	e >20Yrs? N	0		
С	ost Estimat	ion Informa	tion		To	t. Fede	ral Loa	n Amount			
	1	Cost I	Est. Class			Prog	gram/A	llowance To	ask Informa	tion	
	Cost Est. Date				Project Man	ager					
		Cost I	Est. Source		CIP Number						
		Cost I	Est. Prepare	d By	By Description						
Cost Ty	'ne	Fiscal Ye	ear E	xpense	Fringe Ben	efilNor	Persor	ne	Comme	nt	
n/a					0,962 2021CIP						
			Phase Toto	al Expense	s By FY (All	figure	s are i	n \$1,000's)			
Prior Yr Actua	ior Yr Actual FY20 FY21 FY22 F				FY24	FY2	25	FY26+	Total	5-Yr Total	
20,962 0 0 0					0		0	0	20,962	0	



211004 CIP#

WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

Phase GLWA Er	nployees P	roject mar	agement		Contro	act NA			Status Ad	ctive	
Title GLWA Sal	aries										
Phase Budget	Wastewa	er					CTA	TA			
Phase Status	Active				Funding Source Bond Proceeds					eeds	
Start Date					Fund Construction Bond Fund						
End Date					Useful Life >20Yrs? No						
С	ost Estimat	ion Informa	ition		Tot. Federal Loan Amount						\$0
3 Cost Est. Class					Program/Allowance Task Information						
	9/17/2018 Cost Est. Date				Project Manager						
	Cost Est. Source			2	CIP Number	r					
P. Kora		Cost	Est. Prepar	ed By	Description						
Cost Ty	rpe	Fiscal Ye	ear	Expense	pense Fringe BenefilNonPersonne				Comme	ent	
GLWA Salaries (	CIP2021	FY19-		\$429				2021 CIP			
GLWA Salaries CIP2021 FY20				\$37	\$37 2021CIP						
GLWA Salaries (											
GLWA Salaries (			Phase To	tal Expense	es By FY (All	figures	are ir	ר\$1 <i>,</i> 000's)			
GLWA Salaries ( Prior Yr Actua	FY20	FY21	Phase To FY22	tal Expense FY23	es By FY (All FY24	<b>figures</b> FY2		r <b>\$1,000's)</b> FY26+	Total	5-Yr Total	



WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

211004 CIP#

Phase Construct	hase Construction Assistance					Contra	ict NA	Ą		Status Ac	tive	
Title constructio	on Asistan	се										
Phase Budget	Wastewa <sup>.</sup>	ter			Cost Allocation CTA							
Phase Status	Active				Funding Source Bond Proceeds							
Start Date					Fund Construction Bond Fund							
End Date	End Date				Useful Life >20Yrs? No							
Co	Cost Estimation Information				Tot. Federal Loan Amount							\$O
	Cost Est. Class			5	Program/Allowance Task Information							
		Cost	Est. Date		Project Manager							
		Cost	Est. Sour	ce	CIP Number							
		Cost	Est. Prep	ared By	0	Description						
Cost Typ	ре	Fiscal Y	ear	Expens	se	Fringe Ben	efilNor	Person	ine	Comme	nt	
Engineering Serv	ngineering Services FY19-			\$216				2021 CII	Р			
	Phase Total Ex		otal Exp	oenses	s By FY (All	figure	s are i	n \$1,000's	)			
Prior Yr Actua	FY20	FY21	FY22	FY	23	FY24	FY	25	FY26+	Total	5-Yr Total	
216	0	0		0	0	0		0	0	216	0	

#### Phase Task Dates

	RRF PS #1 R	GLWA FY 202 ack & Grit an			ation 1 Im	provement	211004 CIP
Phase Construction			ct PC-789		Status Ac		•
Title PC-789 Pump Station 1 Rack & Grid	and MPI Samp						
Phase Budget Wastewater			Cost	Allocation	CTA		
Phase Status Active			Fundi	ing Source	Bond Proce	eds	
Start Date 11/1	8/2013			Fund	Construction	n Bond Fund	
End Date 7/3	0/2017		Useful Li	ife >20Yrs?	Yes		
Cost Estimation Informatio	n	Tot	. Federal Loc	an Amount			
Cost Est.	Class						
7/31/2019 Cost Est.	Date	Program/Allowance Task Information Project Manager					
Contract Cost Est.		CIP Number					
	Prepared By	Description					
	Trepared by	·					
Cost Type Fiscal Year	Expense	Fringe Ben	efitNonPerso	nne	Comme	ent	
Construction FY19-	\$4,	895		2021 CI	Р		
Construction FY20	\$1,	734		2021CI	Р		
Ph	ase Total Expe	enses By FY (All	figures are	in \$1,000's	)		
Prior Yr Actual FY20 FY21	FY22 FY23	3 FY24	FY25	FY26+	Total	5-Yr Total	
4,895 1,734 0	0	0 0	0	C	6,629	0	
Phase Task Dates							
Phase Task Name Start Date End D	ate Duration	n					
		030					
Project Closeout 6/11/2019 3/20	/2020 2	283					



#### WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	26,502	1,771	0	0	0	0	0	0	28,273	0
2020	0	0	24,505	1,824	869	0	0	0	0	0	0	27,198	869
2019	0	20,944	3,648	2,752	303					0	0	27,647	3,055
2018	13887	2,303	2,652	2,652					0	0	0	21,494	5,304

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP<br/>ChangesGLWA has decided to delete the grit system rehab work of channels 2 and 3 from the project. And the<br/>anticipated credit amount is reflected in the revised cash flow projection. Final completion date will be<br/>extended by 6 months to address the fire alarm changes resulted from the deletion of work.



<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> <li>Reliability/Redundancy</li> <li>NEWTP Repurposing</li> </ul>	<ul><li>Project Status Future Planned</li><li>CIP Type Project</li><li>Project New To CIP</li></ul>	Main Raw Sewage Pumps at Pump Station 2					
		Budget Wastewater					
Project Engineer/Manager	Alfredo Lava	Class Lvl 1 Wastewater					
Director	Dan Alford	Class Lvl 2 WRRF					
Managing Dept	WW Design Eng	Class Lvl 3 Primary Treatment					
Date Original Business Case	Prepared 7/27/2016	Location City of Detroit					
Year Project Add	ded to CIP 2014	Fund and Cost Center Wastewater - 5421-892211					
Problem Statement This pro	pject will improve the pump reliability of	of PS-2 to meet the NPDES permit flow capacity requirements.					
Project Alternatives for exis the thr meet t rehabi structu	ting pump and its control and any ass ee constant speed pumps. The study he long-term goal for wet weather ca litation/rebuilding of the pumps, repla ral, architectural and electrical impro	vide basis of design (study) report for rehabilitation/rebuilding plan ociated equipment. The study will look into the addition of VFD to vill not be limited to increasing the capacity of existing pumps to pacity. The Scope also include: Provide engineering design for cement of HVAC System, I&C Improvements (i.e. automation, etc.) vement, provide design for any recommendation made by the stu povide construction assistance, such as review of shop drawings,					

report. The services during construction is: provide construction assistance, such as review of shop drawings, response to RFIs, attending progress meetings, verifying and assisting GLWA for any changes requested by the contractor, etc.

Construction will follow after the completion of design.

Other Important Info Challenges: Shutdowns of the pumps to be rehabilitated will require co-ordination with operations and careful planning to meet NPDES permit requirements for the flow capacity during the construction phase.

Project History: Pump Station No. 2 was built in 1994. Seven out of eight pumps were running since 1994. These pumps never attained the design capacity due to an unidentified drifting problem. The eighth pump (Pump No. 10) was installed under PC-740 with a modified suction elbow that provided better pumping capacity. The VFDs for five (5) pumps were also replaced in 2005 under PC-744 contract.

A new impeller was installed on Pump No. 9 and a rebuilt impeller was installed on Pump No. 16 in 2008, which



211005 CIP#

#### WRRF PS No. 2 Improvements Phase II

provided sufficient improvements in pumping capacity. To mitigate the declining of pumping capacity, DWSD initiated a CS-1444/PC-795 PS-2 Pumping Improvements project to rehabilitate Pump No. 11 and Pump No. 14 to solidify the long-term wet weather capacity of 1700 MGD. It was recommended to rehabilitate the remaining pumps with energy efficient, and more reliable control

systems that require less maintenance.

## **Related Project** The work shall start in accordance with the completion of PC-795, PS-2 Pumping Improvements and Rehabilitation of Pump Station No. 2 Rack and Grit Improvements.

#### Primary Driver 2 - Performance

**Driver Explanation** The advantage of rehabilitating Pump Station No. 2 is to increase the long-term rated capacity, operational efficiency, and reliability of the pumping system. Replacement of the existing VFDs and adding new VFDs to constant speed pumps would also provid



#### PM Weighted Score

78.6

Criteria	Score	Comment
Condition	5	Replacement or major rehab needed immed
Performance (Service Level/Reliability)	4	High Risk of Performance Failures
Regulatory (Environmental/Legal)	4	Risk of non compliance in near term
Operations and Maintenance	3	Project will alleviate most ongoing O&M issues
Public Health and Safety	4	Project will have significant positive impact or
Public Benefit	3	Project part of GLWA strategic plan
Financial	4	Project will likely result in avoidance of fines
Efficiency and Innovation	4	Significant Operational efficiency

## **RC Weighted**

Score

#### 72.8

Criteria	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	3	



WRRF PS No. 2 Improvements Phase II

Phase Study ar	0						Contro				Status F	uture Planned	Start	
Title CS-130 Pu	ump Sta	tion No	. 2 Imp	provemen	ts Phase	ll at V	Vastewater	Treatr	nent Plant	(WRRF)				
Phase Budge	t Waste	water							Cost Alle	ocation C	TA			
Phase Statu	s Future	Planne	ed Star	t		Funding Source						Bond Proceeds		
Start Date	9									Fund C	Constructi	on Bond Fund		
End Date	9					Useful Life >20Yrs? Yes								
C	Cost Estir	nation	Inform	ation		Tot. Federal Loan Amount								
		4	Cost	Est. Class	5	Program/Allowance Task Information								
	10/2/20	17	Cost	Est. Date		Project Manager								
			Cost	Est. Sour	e	CIP Number								
Ali Khraizat			Cost	Est. Prep	ared By	I	Description							
			000				-							
Cost T	уре	F	-iscal Y	(ear	Expens	e	Fringe Ben	efilNo	nPersonne	Э	Comm	nent		
Engineering Se	rvices	FY	23			\$385				2021 CIP				
Engineering Se		FY			\$2,1					2021 CIP				
Engineering Se		FY	25		\$253					2021 CIP				
Engineering Se	rvices	FY	26+			\$652				2021 CIP				
				Phase T	otal Exp	ense	s By FY (All	figure	es are in S	\$1,000's)				
Prior Yr Actua	FY20	F	Y21	FY22	FY2	23	FY24	FΥ	(25	FY26+	Total	5-Yr Total		
0		0	0		0	385	2,159		253	652	3,44	9 2,797		
Phase Task Do	ates													
Phase Task Na	me Sto	art Date	e Er	nd Date	Duratio	on								
Pre-Procureme	ent	7/1/20	22 8	8/11/2022		41								
Procurement	5	8/12/20	22	2/7/2023		179								
Project Executi	on	2/8/20	23	3/18/2028		1865								

	-		•	-	
GLWA	FY	2021	I-2025 CIP		

GLWA Great Lakes Water Autho	<b>A</b> rity				WA FY 20 RRF PS No				Phase II		<b>211005</b> c	
Phase Construction	n				Contro	act NA	Ą		Status Fut	ure Planned S	tart	
Title Pump Station	No. 2 Impro	ovements	Phase II	at Wastew	vater Treatm	ent Pla	nt (WRR	?F)				
Phase Budget W	astewater						Cost A	llocation	CTA			
Phase Status Fu	ture Planne	d Start					Fundin	g Source	Bond Proce	eds		
Start Date					Fund Construction Bond Fund							
End Date					Useful Life >20Yrs? Yes							
Cost	Estimation I	nformatior	)		Tot. Federal Loan Amount							
	4	Cost Est.	Class		Program/Allowance Task Information							
10/2	2/2017	Cost Est.	Date		Project Manager							
	Cost Est. Sour				CIP Numbe	r						
Ali Khraizat		Cost Est.	Prepare	ed By	ed By Description							
Cost Type	F	iscal Year	E	Expense Fringe BenefilNonPersonne				ne	Comment			
Construction	FY2	25		\$596	20			2021 CIF	0			
Construction	FY2	26+		\$29,404				2021 CIF	0			
		Ph	ase Tot	al Expense	es By FY (Al	l figure	s are in	ר\$1,000's)	)			
Prior Yr Actual F	۲20 F۱	′21 F	Y22	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total		
0	0	0	0	0	0		596	29,404	30,000	596		
Phase Task Dates												
Phase Task Name	Start Date	End D	ate	Duration								
Procurement	8/6/202	24 2/1,	2025	179								
Project Execution	2/2/202		2028	1080								
Project Closeout	1/19/202	28 3/18,	2028	59								

GLWA Great Lakes Water Authority			21-2025 CIP 5. 2 Improve		hase II		211005 CIP		
Phase GLWA Employees Project n Title GLWA Salaries	management	Contr	act NA		Status Fut	ure Planned S	tart		
Phase Budget Wastewater			Cost Al	llocation (	CTA				
Phase Status Future Planned St	tart		Funding	g Source E	Bond Proce	eds			
Start Date				Fund (	Constructior	n Bond Fund			
End Date			Useful Life	>20Yrs?	١o				
Cost Estimation Info	ormation	Tot. Federal Loan Amount   \$0							
3 C	Cost Est. Class	Program/Allowance Task Information							
С	Cost Est. Date	Project Ma							
C	Cost Est. Source	e CIP Number							
C	Cost Est. Prepared By	ared By Description							
Cost Type Fisco	al Year Expen	se Fringe Bei	nefilNonPersonr	ne	Comme	nt			
GLWA Salaries CIP2021 FY19-		\$1		2021 CIP					
GLWA Salaries CIP2021 FY23		\$86		2021 CIP					
GLWA Salaries CIP2021 FY24		\$86		2021CIP					
GLWA Salaries CIP2021 FY25		\$100		2021 CIP					
GLWA Salaries CIP2021 FY26+		\$328		2021 CIP					
	Phase Total Exp	penses By FY (A	l figures are in	\$1,000's)					
Prior Yr Actua FY20 FY21	FY22 FY	723 FY24	FY25	FY26+	Total	5-Yr Total			
1 0	0 0	86 86	100	328	601	272			
Phase Task Dates									



## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	1	0	0	0	471	2,245	949	30,384	34,050	3,665
2020	0	0	0	0	0	684	711	611	8,668	10,925	0	21,599	10,674
2019	0		7		515	115	9,294	9,101	3,055	0	0	22,087	19,025
2018			600	1,700	4,800	3,700			0	0	0	10,800	10,800

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIPEngineering services fee was increased ~\$1.5 million - previous estimate was not accurate. Schedule wasChangesdelayed by 1 FY to reallocate funding for CIP 232002 and account for overlap with PS No.1 construction.



GLWA FY 2021-2025 CIP WRRF PS No. 1 Improvements

<ul> <li>Innovation</li> <li>Conceptual WW N</li> <li>Water MP Right Siz</li> <li>Reliability/Redund</li> </ul>		Pump Station 1 Interio	Dr
NEWTP Repurposin	g	Developed	
roject Engineer/Man	ager Jason Williams	-	Wastewater
	ector Dan Alford		Wastewater
	Dept WW Design Eng	Class Lvl 2	
	s Case Prepared 4/13/2017		Primary Treatment
•	ct Added to CIP 2016		City of Detroit
real rioje		Fund and Cost Center	Wastewater - 5421-892211
Problem Statement	Condition assessment and rehabiliation o	f all pumps at Pump Station No.	I to increase efficiency and reliability.
Project Alternatives	The study/design work will identify all major pump and all related appurtenances. The determined in the study and design along period. Investigation and evaluation of all the inle (MCCs) and other related equipment, HV for rehabilitation or replacement are also	e construction services will provid g with the sequencing of pump s et gates, outlet gates and associ AC system, Control System and p	te rehabilitation and/or replacement as hutdown throughout the rehabilitation ated actuators, Motor Control Centers
	Challenges: Maintaining the adequate per Project History: GLWA operate two raw se Recovery Facility. Raw wastewater (influe through the Detroit River Interceptor (16 fe Interceptor East Arm (NIEA). The main Influe eight constant speed pumps of various co 1956) and has a Firm Capacity (largest pu Pumping Station No. 2 (PS-2) has eight ray with a Firm Capacity of 805 MGD during y	wage pumping stations: PS-1 and ent) from the collection system flo eet in diameter), Oakwood Interd uent Pumping Station No. 1 (PS-1) apacities (six were installed in the ump out of service) of 1,225 MGD v sewage pumps (combination o	d PS-2, at the Water Resources was to the Influent Pumping Station ceptor (12.5 feet in diameter) and North was constructed in the 1930s. PS-1 has a 1940s and two more were added in during wet weather event. The Influent

with a Firm Capacity of 805 MGD during wet weather event. The pumps at PS-1 were rehabilitated in 2004 and 2005 under PC-744 project (DWP 1007).



#### WRRF PS No. 1 Improvements

Related Project PC-757 – Rehabilitation of Primary Clarifiers Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery. PC 789 – Pump Station No. 1 Rack & Grit Building, MPI 1, and JSS Improvements. PC-795 – Pump Station No. 2 Pumping Improvements.

**Primary Driver** 1 - Condition



#### PM Weighted Score

80.8

Score	Comment
4	Project will alleviate most ongoing O&M issues
4	Project will have significant positive impact or
4	Project will likely result in avoidance of fines
4	High Risk of Performance Failures
4	Significant Operational efficiency
4	Risk of non compliance in near term
3	Project part of GLWA strategic plan
5	Replacement or major rehab needed immed
	4 4 4 4 4 4 3

## **RC Weighted**

Score

75

Criteria	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	3	



WRRF PS No. 1 Improvements

211006 CIP#

Phase Study and Design and Construction Assistance Status Future Planned Start Contract NA Rehabilitation of Main Lift Pumps at Pump Station No. 1 Title Phase Budget Wastewater Cost Allocation CTA Phase Status Future Planned Start Funding Source Bond Proceeds Start Date 6/11/2018 **Fund** Construction Bond Fund 7/18/2023 Useful Life >20Yrs? Yes End Date Tot. Federal Loan Amount **Cost Estimation Information** Program/Allowance Task Information 4 Cost Est. Class **Project Manager** 10/1/2017 Cost Est. Date **CIP Number** Cost Est. Source Description Cost Est. Prepared By Ali Khraizat Fiscal Year Cost Type Fringe BenefilNonPersonne Comment Expense **Engineering Services** \$843 2021CIP FY20 Engineering Services FY21 \$559 2021CIP **Engineering Services** \$148 FY22 2021 CIP **Engineering Services** FY23 \$220 2021CIP **Engineering Services** FY24 \$220 2021 CIP **Engineering Services** FY25 2021CIP \$174 Phase Total Expenses By FY (All figures are in \$1,000's) Prior Yr Actual FY20 FY21 FY22 FY23 FY24 FY25 5-Yr Total FY26+ Total 0 843 559 148 220 220 174 0 2,164 1,321 **Phase Task Dates** Phase Task Name Start Date End Date Duration Project Execution 4/14/2025 2145 5/31/2019

GLW Great Lakes Water				C	GLWA FY 20 WRRF P	21-2025 CI S No. 1 Imp		nts		211006 CI
Phase Construct	tion				Contro	act NA		Status Fut	ure Planned St	art
Title Rehabilitat	tion of Mo	ain Lift Pump	os at Pump	Station N	0.1					
Phase Budget	Wastewa	iter				Cost /	Allocation	CTA		
Phase Status	Future Pla	anned Start				əds				
Start Date			8/2/2020			n Bond Fund				
End Date			7/18/2023			Useful Lif	res			
Co	ost Estima	tion Informo	ation		То	t. Federal Loa				
	3	Cost	Est. Class			ition				
		Cost	Est. Date		Project Mar					
Contract		Cost Est. Source			CIP Numbe	r				
		Cost	Est. Prepare	ed By	Description					
Cost Ty	be	Fiscal Y	ear E	Expense		nefilNonPersor		Comme	nt	
Construction		FY22		\$30			2021CIF			
Construction Construction		FY23 FY24		\$8,19			2021 CIP 2021 CIF			
Construction		F124 FY25		\$12,43 \$3,03			2021CIF 2021CIF			
		1120	Dhare Tet							
	51/00	51/01			ses By FY (Al					
Prior Yr Actual 0	FY20 0	FY21 0	FY22 305	FY23 8,19	FY24 P1 12,432	FY25 3,072	FY26+ 0	Total 24,000	5-Yr Total 24,000	
0	0	0	303	0,1	1 12,432	3,072	0	24,000	24,000	
Phase Task Dat	es									
Phase Task Nan	ne Start	Date En	d Date	Duration						
Procurement		2/2021 2	/28/2022	17	9					
Project Executio			/13/2025	108						
Project Closeou	1 2/1	4/2025 4	/14/2025	5	9					

**?**#

Great Lakes Water	Authority				GL\	WA FY 2021 WRRF PS I			ents			211006 C
<b>Phase</b> GLWA En		roject mar	nageme	nt		Contract	NA		Status	Future	Planned St	art
fitle GLWA Sala	aries											
Phase Budget	Wastewat	er					Cost A	llocation	CTA			
Phase Status	Future Pla	nned Start					Fundin	g Source	Bond Pro	oceeds		
Start Date								Fund	Construc	ction Bo	ond Fund	
End Date							Useful Life	e >20Yrs?	No			
C	ost Estimati	ion Informo	ation			Tot. F	ederal Loan	Amount			(	\$O
	3	Cost	Est. Clas	SS			Program/Al	lowance	Task Info	rmatio	า	
			Est. Date		P	Project Manag	_					
			Est. Sou		C	CIP Number						
						Description						
		Cosi	ESI. FIEL	bared By								
Cost Ty	pe	Fiscal Y	ear	Expense	Э	Fringe Benefi	NonPerson	ne	Com	nment		
GLWA Salaries (	CIP2021	FY19-			\$6			2021 CI	Р			
GLWA Salaries (	CIP2021	FY20			\$86			2021 CI	Р			
GLWA Salaries (	CIP2021	FY21			\$86			2021 CI	Р			
GLWA Salaries (	CIP2021	FY22			\$98			2021 CI	Р			
GLWA Salaries (		FY23			\$121			2021CI				
GLWA Salaries (		FY24			\$120			2021CI				
GLWA Salaries (	CIP2021	FY25			\$95			2021CI	P			
			Phase	Total Exp	enses	s By FY (All fig	gures are ir	1 \$1,000's	;)			
	FY20	FY21	FY22	FY2	3	FY24	FY25	FY26+	Tota	ıl 5	-Yr Total	
Prior Yr Actual		86		98	121	120	95	С		612	520	



GLWA FY 2021-2025 CIP WRRF PS No. 1 Improvements

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	6	929	645	551	8,532	12,772	3,341	0	26,776	25,841
2020	0	0		498	1,803	2,325	8,424	8,370	811	84	0	22,315	21,733
2019	0			500	1,800	2,462	9,394	9,245	719	0	0	24,120	23,401
2018			600	5,350	5,125	2,054			0	0	0	13,129	13,129

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



## WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> <li>Reliability/Redundancy</li> <li>NEWTP Repurposing</li> </ul>	Project Status Active CIP Type Project Project New To CIP	WRRF Pumping Statio 2: Bar Racks and G Collection Syste	erit em
Project Engineer/Manager	Jason Williams	-	Wastewater Wastewater
	Dan Alford	Class Lvl 2	
Managing Dept	WW Design Eng		Primary Treatment
Date Original Business Case	<b>e Prepared</b> 10/12/2016		City of Detroit
Year Project Ad	Ided to CIP 2016	Fund and Cost Center	Wastewater - 5421-892211
pump the gi	of disposal. Improvement of grit collec bing system, and grit washing and class rit screenings and grit removal and ha esses, reduce maintenance costs and	ssification to reduce truck traff andling systems will improve the	ic and cost of disposal. Improvements to e performance of all downstream
Project Alternatives ancill scree aerat neces includ opera	ork consists of evaluation, design and ary equipment and gates, addition of nings washing and compaction, inclu ed grit tank and grit washing and/or c ssary of the existing building that house ding all lighting, HVAC, plumbing, elec ations and monitoring will also be prov city requirements at PS2.	f new fine screens (1/4 inch) do usion of stacked tray grit remov classification. Work also include es the screens and the screen ctrical, and architectural work.	bwnstream of the bar racks, addition of ral or other technology within the es the upgrade and expansion as ings and grit handling and load out, New instrumentation and controls for
Other Important Info *Inno			



## WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

	Services Contact task order will not proceed for construction as designed. An engineering decision to have a fresh look and start new study, design and construction project through this CIP project will proceed. The original budget for CIP-1314 is \$3.667M. The \$6.0M CIP budget transfer was made from CIP-1223. The new revised CIP-1314 budget is \$9.667 Challenges: Maintaining the MDEQ-NPDES required capacity during the construction phase of the project. Project History: The Pump Station No. 2 Rack and Grit Collection system have been in service for almost twenty years. The equipment are near the end of its useful life. Improper transport of collected screenings has been ongoing problem and rags and other floatable materials are not screened thoroughly. The condition and reliability of the Pump Station No. 2 Grit System was inspected and the grit crane was upgraded in 2002 by PC-744/DWP-1006. The HVAC system was found in good condition but needs some rehabilitation due to its ending life cycle. Modifications are needed to the existing Grit removal system because of the draining issues. Grit Chambers cannot be emptied due to clogged drains. Grit carry over cause deterioration of the downstream process and equipment Rehabilitation/Replacement of screening belt since the equipment is nearing to its useful life.
	The bar screen foundations, screen frames, and conveyance chutes in PS-2 have been in service for approximately twenty years.
<b>Related Project</b>	PC-757: Rehabilitation of Primary Clarifiers & Pipe Gallery PC 789 – Pump Station No. 1 Rack and Grit Building, MPI and JSS Improvements PC 795 – Pump Station No. 2 Improvements
Primary Driver	2 - Performance
Driver Explanation	Plant operations report on the failure of shear pins and accelerated wearing and tearing of the bar racks causing downtime for the maintenance and violation of the permit



Comment

PM Weighted Score		
73.4		
	Criteria	Score
Condition		4

Condition	4 Replacement or major rehab needed immed
Performance (Service Level/Reliability)	4 Project will have a significant positive impact
Regulatory (Environmental/Legal)	4 Relatively high, but not imminent risk
Operations and Maintenance	4 Project will have significant positive impact or
Public Health and Safety	3 Failure not catastophic, moderate chance of
Public Benefit	2 Additional Savings in O&M
Financial	4 Project will likely result in avoidance of fines
Efficiency and Innovation	4 Project will have a positive impact on Wear &

## RC Weighted

## Score

## 65.2

Score	Comment
3	
4	
4	
4	
3	
3	
3	
1	
	Score 3 4 4 4 3 3 3 3 3 1



# WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

Phase GLWA Employees Project management Title GLWA Salaries					Contrac	T NA		Status Fu	ture Planned St	art		
Phase Budge	Phase Budget Wastewater					Cost Allocation CTA						
Phase Statu	Phase Status Future Planned Start					Fundin	g Source	Bond Proce	eds			
Start Date	Start Date						Fund	Constructio	n Bond Fund			
End Date	End Date					Useful Life	e >20Yrs?	No				
Cost Estimation Information					Tot.	Federal Loar	n Amount			\$0		
	4 Cost Est. Class					Program/A	llowance T	ask Informa	ation			
		Cost Est	. Date	F	Project Mana	ger						
	Cost Est. Source			(	CIP Number							
		Cost Est	. Prepared By	[	Description							
Cost T	уре	Fiscal Yea	r Expen	se	Fringe Bene	filNonPerson	ne	Comme	ent			
GLWA Salaries	CIP2021	FY19-		\$1			2021 CIP	)				
		FY20		\$86			2021 CIP	)				
				•								
GLWA Salaries	CIP2021	FY21		\$86			2021 CIP	)				
GLWA Salaries	CIP2021	FY21 FY22		\$86 \$86				)				
GLWA Salaries	CIP2021 CIP2021	FY21 FY22 FY23		\$86 \$86 \$96			2021 CIP	)				
GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021	FY21 FY22		\$86 \$86			2021 CIP 2021 CIP	) ) )				
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	FY21 FY22 FY23		\$86 \$86 \$96			2021CIP 2021CIP 2021CIP					
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	FY21 FY22 FY23 FY24		\$86 \$86 \$96 \$120			2021 CIP 2021 CIP 2021 CIP 2021 CIP 2021 CIP	) ) ) )				
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	FY21 FY22 FY23 FY24 FY25 FY26+	nase Total Ex	\$86 \$86 \$96 \$120 \$121 \$100	s By FY (All f	igures are in	2021 CIP 2021 CIP 2021 CIP 2021 CIP 2021 CIP 2021 CIP					
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	FY21 FY22 FY23 FY24 FY25 FY26+		\$86 \$86 \$96 \$120 \$121 \$100	s By FY (All f FY24	igures are in	2021 CIP 2021 CIP 2021 CIP 2021 CIP 2021 CIP 2021 CIP		5-Yr Total			

GLWA Great Lakes Water Authority	WRRF PS	s #2 Bar Rac	GLWA FY 20 ks Replacen			lection Syst	em Improve	211007 CIP# ements	
Phase Study and Design	nase Study and Design and Construction Assistance					Status Fut	Status Future Planned Start		
Title Replacement of B	o Station No.2								
Phase Budget Wastewater				C	ost Allocatio	n CTA			
Phase Status Future F	lanned Start			Fu	nding Sourc	e Bond Proce	eds		
Start Date	12/	8/2018			Fun	d Construction	n Bond Fund		
End Date	1/1	4/2024		Usefu	ul Life >20Yrs	? Yes			
Cost Estim	ation Informatio	1	То	t. Federal	Loan Amour	nt			
	4 Cost Est.	Class		Progra	m/Allowanc	e Task Informo	ition		
10/2/2013	7 Cost Est.	Date	Project Mar	nager					
	Cost Est.	Source	CIP Number						
Ali Khraizat	Cost Est.	Prepared By	Description						
Cost Type	Fiscal Year	Expense	e Fringe Ber	nefilNonPe	rsonne	Comme	nt		
Engineering Services	FY20		\$170 2021CIP			CIP	2		
Engineering Services	FY21		,012	2021 CIP					
Engineering Services	FY22		,460		2021 CIP				
Engineering Services Engineering Services	FY23 FY24		,463 ,202		2021 CIP 2021 CIP				
Engineering Services	FY25		,199		2021 CIP 2021 CIP				
Engineering Services	FY26+		\$995		20210				
	Ph	ase Total Exp	enses By FY (Al	l figures a	ıre in \$1,000	's)		<u></u>	
Prior Yr Actual FY20	FY21	FY22 FY2	3 FY24	FY25	FY26+	Total	5-Yr Total		
0 170	3,012	7,460 1	,463 1,202	1,1	199 99	95 15,501	14,336		
Phase Task Dates Phase Task Name Star	t Date End D	ate Duratic	n l						
			182						



## GLWA FY 2021-2025 CIP 211007 CIP# WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

Phase Task Name	Start Date	End Date	Duration
Procurement	10/1/2019	3/28/2020	179
Project Execution	3/29/2020	4/29/2026	2222



# WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

Phase Construction		Contro	act NA	Status Fut	ture Planned S	tart			
Title Replacement of Bar Racks at Pun	np Station No.2								
Phase Budget Wastewater		Cost Allocation CTA							
Phase Status Future Planned Start			Fundir	ng Source B	ond Proce	eds			
Start Date 1/	29/2021			Fund C	Constructior	n Bond Fund			
End Date 1/	14/2024		Useful Lif	e >20Yrs? Y	es				
Cost Estimation Informatio	n	Tot. Federal Loan Amount							
4 Cost Est	. Class		Program/A	llowance To	ask Informa	ition			
10/2/2017 Cost Est	. Date	Project Mar	nager						
Cost Es	. Source	CIP Numbe	r						
Ali Khraizat Cost Est	. Prepared By	By Description							
Cost Type Fiscal Yea	•		nefilNonPersor		Comme	nt			
Construction FY23	· · ·	\$561		2021CIP					
Construction FY24	\$19,5			2021CIP					
Construction FY25	\$32,7			2021 CIP					
Construction FY26+	\$7,5	047		2021 CIP					
P!	nase Total Expe	nses By FY (Al	l figures are i	n \$1,000's)					
Prior Yr Actual FY20 FY21	FY22 FY23	FY24	FY25	FY26+	Total	5-Yr Total			
0 0 0	0 5	61 19,577	32,714	7,547	60,399	52,852			
Phase Task Dates									
Phase Task Name Start Date End I	Date Duration	1							
Procurement 9/15/2022 3/14	4/2023 1	80							
Project Execution 3/15/2023 2/2	7/2026 10	80							
Project Closeout 2/28/2026 4/29	9/2026	60							



### WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	1	256	3,098	7,546	2,120	20,899	34,034	8,642	76,596	67,697
2020	0	0		6	269	1,329	2,039	6,306	7,838	49	0	17,836	17,781
2019	0			7	402	1,980	2,404	6,956	8,814	0	0	20,563	11,749
2018			650	2,900	3,300	2,817			0	0	0	9,667	9,667

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



#### GLWA FY 2021-2025 CIP

WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

$\blacksquare$ Innovation	Project Status Active	Ferric Chloride Tanks at Pump Station 1								
□ Conceptual WW □ Water MP Right Si ☑ Reliability/Redund	zing dancy Project New To CIP									
NEWTP Repurposi	ng	Budget Wastewater								
Di	nager Ravi Yelamanchi rector Dan Alford 1 Dept WW Design Eng	Class Lvl 1 Wastewater Class Lvl 2 WRRF								
Date Original Busines	ss Case Prepared 7/27/2016 ect Added to CIP 2017	Class Lvl 3 Primary Treatment Location City of Detroit Fund and Cost Center Wastewater - 5421-892211								
Problem Statement	include chemical storage tanks, secondo	d to reduce phosphorus to the required permit levels. The system, which ary containment, valves and piping is in need of rehabilitation. The to Struvite and need rehabilitation/replacement.								
	Specifically it will include: a study to evaluate to test alternative application points, and recommendations for system modification	The scope of work will include study design and construction for the ferric chloride feed system at PS-1. Specifically it will include: a study to evaluate alternative locations for application of ferric chloride, a pilot study to test alternative application points, and inspection of the existing chemical feed systems, a study to provide recommendations for system modifications and improvements, design of recommended system improvements, and construction of chemical feed system improvements. Evaluation and recommended design and								
Other Important Info	improved mixing of the ferric with primary Challenges: Maintaining capacity of the determining the simplest system that will r secondary effluent will be a challenge. Project History: There are phosphorous eff secondary effluent. Effluent limits for phos primary effluent and 0.7 mg/l (October –	th U of M phosphorus & enhanced carbon capture studies, as well as y influent. existing feed system during construction will be a challenge. Also, meet current and future phosphorous limits for both primary and fluent permit limits for both primary effluent (during wet weather) and for sphorous were lowered again in 2016 and now stand at 1.5 mg/l for March) and 0.6 mg/l (April – September) for secondary effluent. GLWA hosphorous limits for both primary and secondary effluent by adding ferric								
App B - Page 41										

GLWA Great Lakes Water Authority	GLWA FY 2021-2025 CIP 211008 CIP# WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines
	chloride to the primary clarifier influent. The physical/chemical removal in the primary clarifiers lowered the phosphorous concentrations to meet the primary effluent limits. However, GLWA has begun to experience some difficulty with the settling of the secondary biomass in the final clarifiers. Preliminary investigations have indicated that this settling ability issue could be caused by low phosphorous concentrations in the secondary influent wastewater. This is because the biomass in the secondary system requires a certain ratio of carbon (CBOD), nitrogen, and phosphorous to reduce the pollutant concentrations and then settle in the final clarifiers. As such, in addition to rehabilitating the ferric chloride system at PS-1, there also needs to be a study and possibly pilot test conducted to review the best location for ferric chloride addition to the wastewater.
	Rehabilitation of Pump Station – 2 Ferric Chloride Feed System is currently in design stage and construction will start soon.
Primary Driver	1 - Condition
Driver Explanation	The current chemical feed systems at PS-1 has deteriorated to the point where this need to be rehabilitated.



Criteria	Score	Comment
Condition	4	Shows abnormal wear. Replacement or major
Performance (Service Level/Reliability)	4	High Risk of Performance Failures
Regulatory (Environmental/Legal)	4	Risk of non compliance in near term
Operations and Maintenance	4	Project will have significant positive impact or
Public Health and Safety	3	Project likely to address hazard issues
Public Benefit	2	Mostly require new infrastructure
Financial	4	Project will likely result in avoidance of fines
Efficiency and Innovation	4	Right sizing system will have significant operati

# **RC Weighted**

# Score

### 74.2

Score	Comment
4	
4	
4	
3	
4	
3	
3	
4	
	Score 4 4 3 4 3 3 3 4



# WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

Cost AllocationCTAFunding SourceBond ProceedsFundConstruction Bond FundUseful Life >20Yrs?NoTot. Federal Loan Amount\$0Program/Allowance Task InformationProject ManagerCIP Number
Fund       Construction Bond Fund         Useful Life >20Yrs?       No         Tot. Federal Loan Amount       \$0         Program/Allowance Task Information         Project Manager
Useful Life >20Yrs? No Tot. Federal Loan Amount \$0 Program/Allowance Task Information Project Manager
Tot. Federal Loan Amount       \$0         Program/Allowance Task Information         Project Manager
Program/Allowance Task Information Project Manager
Project Manager
CIP Number
Description
Fringe BenefitNonPersonne Comment
2021CIP
2021CIP
2021 CIP
2021CIP
es By FY (All figures are in \$1,000's)
FY24 FY25 FY26+ Total 5-Yr Total
0 0 0 328 224

GLW Great Lakes Water.	Authority V	VRRF Ref	nabilitatio			21-2025 C e Feed Sys		S-1 and C	omplex B S	211008 Iudge Lind
<b>Phase</b> Study and <b>Title</b> Rehabilita:	•				Contro	ict NA		Status Fut	ture Planned St	art
			Feed Syste	erns		Coat	Allocation			
Phase Budget Wastewater Phase Status Future Planned Start									oda	
Start Date	ruiule riai					runa	_	Bond Proce	n Bond Fund	
			6/10/2019			lleoful li				
Ena Dafe	End Date 12/24/2022						ife >20Yrs?	res		
Co	Cost Estimation Information					l. Federal Loc	an Amount			
	4	Cost	Est. Class			-	Allowance	Task Informa	ition	
		Cost	Est. Date		Project Manager					
		Cost	Est. Source		CIP Number					
		Cost	Est. Prepare	ed By	Description					
Cost Ty	ce	Fiscal Ye	ear l	Expense	Fringe Ben	efilNonPerso	nne	Comme	nt	
Engineering Serv	vices	FY19-		\$160			2021 CI	Р		
Engineering Serv		FY20		\$1,153						
Engineering Serv		FY21		•	\$270 2021CIP					
Engineering Serv	nces	FY22		\$280			2021CI			
						figures are				
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	FY26+		5-Yr Total	
160	1,153	270	280	0	0	0	(	1,863	550	
Phase Task Dat	es									
Phase Task Nan		Date End	d Date	Duration						
Project Executio	n 5/23	/2019 5	/28/2022	1101						



# WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

Phase Construc	tion						Contro	act	NA			Status Fut	ure Planned S	tart
<b>Title</b> Rehabilita	tion of Fe	rric Chl	oride Fee	d Syst	tems									
Phase Budget	Wastewo	ater							Cost	Allo	cation C	TA		
Phase Status	Future Pl	anned	Start						Fund	ling S	Source Bo	ond Procee	eds	
Start Date			1/3	/2021							Fund C	onstructior	n Bond Fund	
End Date			12/24	/2022	2				Useful I	.ife >	20Yrs? Ye	es		
Co	ost Estimo	ation Inf	ormation				То	t. Fe	ederal Lo	an A	mount			
	4		Cost Est. (	Class				I	Program/	Allo	wance To	ısk Informa	ition	
			Cost Est. [	Date			Project Man	ag	er					
			Cost Est. S	ource	е	(	CIP Number	ŕ						
			Cost Est. F	Prepa	red Bv		Description							
				Topa			-							
Cost Ty	ре	Fiso	cal Year		Expense	e	Fringe Ber	nefit	NonPerso	onne		Comme	nt	
Construction		FY21			\$5	5,137					2021 CIP			
Construction		FY22			\$3	8,497					2021 CIP			
			Pho	se To	otal Exp	ense	s By FY (Al	l fig	ures are	in \$	1,000's)			
Prior Yr Actua	FY20	FY2	1 F`	Y22	FY2	23	FY24		FY25	F	Y26+	Total	5-Yr Total	
0	0	5,	,137	3,497	7	0	0		С	)	0	8,634	8,634	
Phase Task Da	les													
Phase Task Nan	ne Star	Date	End Dc	te	Duratio	on								
Procurement	2/2	28/2020	8/25/2	2020		179								
Project Executio		26/2020				549								
Project Closeou	† 2/2	27/2022	2 5/28/2	2022		90								



WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	178	1,239	5,522	3,886	0	0	0	0	10,825	9,408
2020	0	0	12	1,021	2,950	4,983	1,600	0	0	0	0	10,566	9,533
2019	0			7	115	1,259	2,732	5,537	2,363	0	0	12,013	9,650
2018			400	1,400	5,200	2,000	633		0	0	0	9,633	9,633

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** This project was moved forward due to SRF funding Source to begin in FY 2019.

Changes



WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

211009 CIP#

Director [ Managing Dept \	Dan Alford NW Design Eng	Class Lvl 2	WRRF Primary Treatment
Project Engineer/Manager		Class Lvl 1	Wastewater
		Budget	Wastewater
NEWTP Repurposing		The scum beach need better enclosu and heating syster during extreme co conditions scu collection system g froz	es re n, Id m et
<ul> <li>Water MP Right Sizing</li> <li>Reliability/Redundancy</li> </ul>	Project New To CIP	to maintain, equipme remains out of servic for extended perio	ce 🔍 🖉 🖉 🔛 🐘
Conceptual WW MP	Project Status Future Planned CIP Type Project	The existing scu system is complicate to operate and difficu	ed ult

 Problem Statement
 The circular clarifiers scum removal system is over 10 years old and need to be rehabilitated. They will help protect the secondary treatment process by preventing scum from entering the aeration tanks.

 Scope of Work /
 This project will provide for the study, design and construction of new scum equipment in the Scum Buildings for the circular clarifiers . The study will consist of an evaluation of the existing process and simplified alternative systems for scum removal including the scum removal from the buildings. Future alternatives for scum disposal, such as addition to an anaerobic digestion process, will be considered. All alternatives will be evaluated for energy efficiency (reduction of electrical usage). The scum removal system at the rectangular PCs will also be evaluated to determine which aspects can be applied to the circular SBs. Design and construction services will be included for the selected scum removal system.

**Other Important Info** \*Innovation note: See project write-up -- evaluate alternatives for energy efficiency.

Project History: There are 12 rectangular PCs (1-12) and 6 circular PCs (13-18) clarifiers at the WRRF. PCs remove TSS, BOD, and phosphorous through a chemically enhanced settling process. The clarifiers also remove fats, oils,



## WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

	and grease (FOG or scum) by skimming the surface of the clarifiers and transporting the scum to a SB where it can be concentrated and pumped again to be hauled off site. The SBs for the rectangular clarifiers were recently rehabilitated. They have a fairly simple system and appear to be operating well. The SBs for the circular clarifiers utilize a somewhat complex transport and concentration system. New SBs were installed for PCs 17 and 18 when they were constructed. Since their installation, the equipment in the circular clarifier SBs has been complicated to operate and difficult to maintain. Much of the equipment is out of service for extended periods of time. Challenges: Each of the scum removal facility serves two circular clarifiers, so two circular clarifiers at a given time needs to be out of services during rehabilitation, this will limit the primary capacity to minimum to meet NPDES permit requirements.	
<b>Related Project</b>	This project will need to be closely coordinated with other ongoing PC rehabilitation projects. Especially PC-757 which will be limiting primary capacity due to taking multiple primary clarifiers out of service for rehabilitation.	
Primary Driver	1 - Condition	
Driver Explanation	The condition of the existing equipment is old and complicated, this results in significant down time and maintenance challenges.	



### PM Weighted Score 52.8

Criteria	Score	Comment
Condition	3	11/28/18 - Khraizat & Caldwell modified priorit
Performance (Service Level/Reliability)	3	11/28/18 - Khraizat & Caldwell modified priorit
Regulatory (Environmental/Legal)	3	11/28/18 - Khraizat & Caldwell modified priorit
Operations and Maintenance	2	11/28/18 - Khraizat & Caldwell modified priorit
Public Health and Safety	2	11/28/18 - Khraizat & Caldwell modified priorit
Public Benefit	2	11/28/18 - Khraizat & Caldwell modified priorit
Financial	3	11/28/18 - Khraizat & Caldwell modified priorit
Efficiency and Innovation	3	11/28/18 - Khraizat & Caldwell modified priorit

## **RC Weighted**

# Score

### 61.2

Score	Comment
4	updated
5	updated
3	11/28/18 - Khraizat & Caldwell modified prioritiz
2	11/28/18 - Khraizat & Caldwell modified prioritiz
2	11/28/18 - Khraizat & Caldwell modified prioritiz
2	11/28/18 - Khraizat & Caldwell modified prioritiz
3	11/28/18 - Khraizat & Caldwell modified prioritiz
3	11/28/18 - Khraizat & Caldwell modified prioritiz
	4 5 3 2 2 2 2 3



WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

211009 CIP#

Phase GLWA Emp Title GLWA Salari	,	oject manc	igement		Contro	ict NA		Status F	uture Planned S	itart
Phase Budget W	/astewate	er				Cost	Allocation	CTA		
Phase Status Fu	uture Plar	ned Start				Fundi	ng Source	Bond Proc	eeds	
Start Date							Fund	Constructi	on Bond Fund	
End Date						Useful Li	ife >20Yrs?	No		
Cos	t Estimatio	on Informati	ion		To	. Federal Loo	an Amount			\$O
	4	Cost E	st. Class			Program/A	Allowance	Task Inforn	nation	
10/	/1/2017	Cost E	st. Date		Project Man	ager				
		Cost E	st. Source		CIP Number					
Ali Khraizat		Cost E	st. Prepare	ed By	Description					
Cost Type	Э	Fiscal Ye	ar E		Fringe Ben	efilNonPerso	nne	Comm	nent	
GLWA Salaries CIF	P2021	FY20		\$21			2021 CII	Р		
GLWA Salaries CIF	P2021	FY21		\$86			2021 CII	Р		
GLWA Salaries CIP		FY22		\$86			2021 CII			
GLWA Salaries CIF		FY23		\$101			2021CII			
GLWA Salaries CIF		FY24		\$120			2021CII			
GLWA Salaries CIF	P2021	FY25		\$85			2021CII	P		
		F	Phase Tot	al Expense	s By FY (All	figures are	in \$1,000's	)		
Prior Yr Actual F	Y20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
0	21	86	86	101	120	85	0	) 49	9 478	

#### Phase Task Dates

GLWA Great Lakes Water Author	rity	WI	RRF Reha		WA FY 202 of the Circ				er Scum F	Removal Sys	211009 CIP stem
Phase Study and D	-					ict NA			Status Fut	ure Planned St	art
Title Rehabilitation	n of the	Circular Pi	rimary Clari	ifier Scum R	emoval Syste	m					
Phase Budget Wo	astewa	ter				С	ost Al	location	CTA		
Phase Status Fu	ture Plo	inned Start				Fu	unding	g Source	Bond Procee	eds	
Start Date			11/8/2020					Fund	Constructior	n Bond Fund	
End Date			5/24/2024			Usef	ul Life	>20Yrs?	Yes		
Cost	Estimat	ion Inform	ation		Tot	. Federal	Loan	Amount			
	4	Cost	Est. Class			Progra	ım/Alle	owance 1	ask Informa	tion	
10/2	2/2017	Cost	Est. Date		Project Man	ager					
	,		Est. Source	<u>,</u>	CIP Number						
Ali Khraizat			Est. Prepar		Description						
Cost Type		Fiscal Y	'ear	Expense	Fringe Ben	efitNonPe	ersonn	ne	Comme	nt	
Engineering Service	es	FY21		\$227	,			2021 CIF	)		
Engineering Service	es	FY22		\$1,168	3			2021 CIF	)		
Engineering Service		FY23		\$117				2021 CIF			
Engineering Service		FY24		\$140				2021 CIF			
Engineering Service	es	FY25		\$98	5			2021 CIF	)		
			Phase To	tal Expense	es By FY (All	figures o	are in	\$1,000's)			
Prior Yr Actua F	(20	FY21	FY22	FY23	FY24	FY25		FY26+	Total	5-Yr Total	
0	0	227	1,168	117	140		98	0	1,750	1,750	
Phase Task Dates											
Phase Task Name	Start	Date En	d Date	Duration							
Pre-Procurement	4/	1/2020 7	7/29/2020	119							
Procurement	7/3	0/2020 1	/25/2021	179							
Project Execution	1/2	6/2021 3	3/12/2025	1506							



WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

Phase Construction	n					Contro	act NA			Status F	uture Planned S	itart
Title Rehabilitation	n of the (	Circulo	ar Primary	Clarifie	r Scum Re	emoval Syste	em					
Phase Budget Wo	astewate	ər					(	Cost A	Allocation C	CTA		
Phase Status Fu	ture Plar	nned S	tart				F	undir	ng Source B	ond Proc	eeds	
Start Date			6/4/	2022					Fund C	Constructio	on Bond Fund	
End Date			5/24/	2024			Use	eful Lif	e >20Yrs? Y	es		
Cost	Estimatio	on Info	ormation			То	t. Federo	ıl Loai	n Amount			
	3	С	Cost Est. C	lass			Progr	am/A	llowance To	ask Inform	nation	
		С	Cost Est. D	ate		Project Man						
		С	Cost Est. So	ource		CIP Number	r 🗌					
Engineer	Cost Est. Sour				Ву	Description						
				_								
Cost Type			al Year	Exp	bense ¢co.4	Fringe Ber	nefitNonF	'erson		Comm	ent	
Construction Construction		FY23 FY24			\$584 \$8,455				2021 CIP 2021 CIP			
Construction		F124 FY25			\$0,433 \$1,961				2021CIP 2021CIP			
		1120	Dhar	o Totol	•		fierwoo					
	(00	EV(0)			-	es By FY (Al				<b>.</b>		
Prior Yr Actual F	Y20	FY21	FY 0	0	FY23 584	FY24 8,455	FY25	,961	FY26+ 0	Total 11,00	5-Yr Total	
0	0		0	0	504	0,433	I	,701	0	11,00	5 11,000	
Phase Task Dates												
Phase Task Name	Start D	ate	End Dat	e Du	uration							
Procurement	7/25/	/2022	1/20/2	023	179							
Project Execution		/2023	1/11/2		721							
Project Closeout	1/12/	/2025	3/12/2	025	59							



### WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

# Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	21	313	1,254	802	8,715	2,144	0	13,249	13,228
2020	0	0		0	0	778	619	5,237	4,725	35	0	11,394	11,359
2019	0				7	859	572	5,796	5,005	0	0	12,239	7,234
2018			266	324	1,870	2,671	2,670	2,679	0	0	0	10,480	7,801

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Minor changes to the timing of projected expenses.

Changes



Innovation	Pro	oct Status	Future Planned		
Conceptual WW					
□ Water MP Right Si	izing	CIP Type Project No	-		
Reliability/Redun	dancy	riojeci Na			
□ NEWTP Repurposi	ng			Duda	• Wastowator
Project Engineer/Ma	nager Ravi Y	elamanchi		-	H Wastewater Wastewater
Di	rector Dan A	lford		Class Lvl	2 WRRF
Managing	<b>Dept</b> WW D	esign Eng		Class Lvl	B Primary Treatment
<b>Date Original Busine</b>	ss Case Prep	ared		locatio	n City of Detroit
Dale Oliginal Dosilies	•			Eocano	
•	ect Added to	<b>CIP</b> 2019			r Wastewater - 5421-892211
Year Proj	Both Compl two process little to no a pumps used	ex A and C es are locc ccess arou to transfer	ited below grade	Fund and Cost Center eached the end of there design e in areas prone to flooding. Tak r, this limits and reduces cleaning	,
Year Proj Problem Statement Scope of Work /	Both Compl two process little to no au pumps used to process sl The work co tank repair t mechanical sludge pum	ex A and C es are locc ccess arou to transfer udge. nsists of eve o improving process, e os from bel	aluation, design g tank access ar ow grade to abo	Fund and Cost Center eached the end of there design e in areas prone to flooding. Tak r, this limits and reduces cleaning DF are past there design life. Equ and rehabilitation of both Comp nd increase life, building and pro- strumentation replacement. Sco	er Wastewater - 5421-892211 life. The majority of the equipment for hks are located above grade and have geffectiveness. Both the valves and the ipment brakeage affects the plant ab lex A and Complex B. Scope to includ cess repair to including structural, ope should focused on relocating the new above grade structures and cross
Year Proj Problem Statement Scope of Work / Project Alternatives	Both Compl two process little to no ad pumps used to process sl The work co tank repair t mechanical sludge pum connecting	ex A and C es are locc ccess arou to transfer udge. nsists of evo process, e process, e pumps to c	ted below grade nd the perimeter sludge to the BE aluation, design g tank access ar electrical, and in ow grade to abo allow for addition	Fund and Cost Cent reached the end of there design e in areas prone to flooding. Tan r, this limits and reduces cleaning DF are past there design life. Equ and rehabilitation of both Comp nd increase life, building and pro- strumentation replacement. Sco by grade which could include	er Wastewater - 5421-892211 life. The majority of the equipment for hks are located above grade and have geffectiveness. Both the valves and the ipment brakeage affects the plant ab lex A and Complex B. Scope to includ cess repair to including structural, ope should focused on relocating the new above grade structures and cross rocess.
Year Proj Problem Statement Scope of Work / Project Alternatives	Both Compl two process little to no ad pumps used to process sl The work co tank repair t mechanical sludge pum connecting Maintaining	ex A and C es are locc ccess arou to transfer udge. nsists of eve process, e ps from bel pumps to o the MDEQ	ted below grade nd the perimeter sludge to the BE aluation, design g tank access ar electrical, and in ow grade to abo allow for addition	Fund and Cost Center eached the end of there design in areas prone to flooding. Tak r, this limits and reduces cleaning DF are past there design life. Equ and rehabilitation of both Comp nd increase life, building and pro- strumentation replacement. Sco ove grade which could include nal flexibility in feeding the BDF p	er Wastewater - 5421-892211 life. The majority of the equipment for hks are located above grade and have geffectiveness. Both the valves and the ipment brakeage affects the plant ab lex A and Complex B. Scope to includ cess repair to including structural, ope should focused on relocating the new above grade structures and cross rocess.



PM Weighted Score				
65				
Criteria	Sc	ore	Comme	ent
Condition		2		
Operations and Maintenance		4		
Efficiency and Innovation		2		
Financial		2		
Performance (Service Level/Reliability)		2		
Public Health and Safety		5		
Regulatory (Environmental/Legal)		4		
Public Benefit		4		
RC Weighted Score 65				
Criteria	Score		Comment	
Condition	2			
Efficiency and Innovation	2			
Public Benefit	4			
Financial	2	2		
Regulatory (Environmental/Legal)	4	1		
Operations and Maintenance	4	1		

5

2

Performance (Service Level/Reliability)

Public Health and Safety



Rehabilitation of Sludge Processing Complexes A and B

	hase Study and Design and Construction Assista							Contro	act TE	3D		Status	Futi	ure Planned S	tart
Title TBD															
Phase Budge	t Wa	stewat	er							Cost A	llocation	СТА			
Phase Status	s Futi	ure Pla	nned S	Start						Fundin	g Source	Bond Pro	cee	eds	
Start Date	9										Fund	Construc	tion	Bond Fund	
End Date	9								ι	Jseful Life	e >20Yrs?	Yes			
C	Cost E	stimati	ion Info	ormation				То	t. Fede	eral Loar	n Amount				\$0
		5	C	Cost Est. (	Class				Pro	gram/A	llowance 1	ask Info	rma	tion	
			C	Cost Est. I	Date			Project Mar	ager						
			C	Cost Est. S	ource	,	(	CIP Numbe	r						
				Cost Est. I				Description							
Cost T	уре		Fisc	al Year	E	Expense	е	Fringe Ber	nefitNo	nPerson	ne	Com	mer	1t	
Engineering Se	rvice	S	FY24				\$92				2021 CIF	>			
Engineering Se			FY25				\$662				2021 CIF				
Engineering Se	rvice	S	FY26+	+			\$616				2021 CIF	>			
				Pho	ise Tot	al Exp	ense	s By FY (Al	figur	es are ir	n \$1,000's)	)			
Prior Yr Actua	FY2	20	FY21	F	Y22	FY2	23	FY24	F١	(25	FY26+	Total		5-Yr Total	
0		0		0	0		0	92		662	616	1,3	370	754	
Phase Task Do	ates														
Phase Task Na	me	Start D	Date	End Do	ite	Duratic	on								
Pre-Procureme	nt	7/1	/2023	8/11/	2023		41								
Procurement		8/12	2/2023	3/18/	2024		219								
Project Executi	on	3/19	2024	10/15/	2028	1	671								

GLWA Great Lakes Water Authority	Reh	GLWA FY 2021-2025 CIP 22 ehabilitation of Sludge Processing Complexes A and B									
Phase Construction			Contro	act TBE	)		Status Fut	ure Planned S <sup>.</sup>	tart		
Title Construction											
Phase Budget Wastewater					Cost A	llocation	CTA				
Phase Status Future Planned	Start				Fundin	g Source	Bond Procee	eds			
Start Date						Fund	Constructior	n Bond Fund			
End Date				Us	eful Life	e >20Yrs?	Yes				
		_	То	Eador	alloar	Amount			0.9		
Cost Estimation In			10			n Amount			\$0		
	Cost Est. Class			-	ram/A	llowance 1	ask Informa	tion			
	Cost Est. Date	F	Project Manager								
	Cost Est. Source	(	CIP Number	,							
	Cost Est. Preparec	l By [	Description								
Cost Type Fis	cal Year Ex	pense	Fringe Ben	efilNon	Person	ne	Comme	nt			
Construction FY26		\$12,118				2021 CIF	0				
	Phase Tota	l Expense:	s By FY (All	figure	s are ir	ר \$1,000's)					
Prior Yr Actual FY20 FY2	21 FY22	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total			
0 0	0 0	0	0		0	12,118	12,118	0			
Phase Task Dates											
Phase Task Name Start Date	End Date D	uration									
Procurement 7/12/2028	5 1/7/2026	179									
Project Execution 1/8/2020	6 8/16/2028	951									
Project Closeout 8/17/2028	8 10/15/2028	59									



# Rehabilitation of Sludge Processing Complexes A and B

	ject manager	nent	Contract NA Status Future Planned S						start	
Title Project Mgt										1
Phase Budget Wastewater	r					Cost Allo	ocation C	TA		
Phase Status Future Plann	ned Start		Funding Source Bond Proceeds							
Start Date			Fund Construction Bond Fund							
End Date			Useful Life >20Yrs? Yes							
Cost Estimation	n Information		Tot. Federal Loan Amount\$0							\$O
	Cost Est. C	lass	Program/Allowance Task Information							
	Cost Est. D	ate	Pr	roject Man	ager					
	Cost Est. S	ource	CIP Number							
	Cost Est. P	repared By	D	escription						
Cost Type	Fiscal Year	Expens	е	Fringe Ben	efilNon	Personne	e	Comme	ent	
GLWA Salaries CIP2021 F	-Y24		\$86				2021 CIP			
GLWA Salaries CIP2021 F	Y25		\$86				2021 CIP			
GLWA Salaries CIP2021 F	Y26+		\$379				2021 CIP			
Phase Total Expenses By FY (All figures are in \$1,000's)										
Prior Yr Actual FY20	FY24	FY2	5	FY26+	Total	5-Yr Total				
0 0	0	0	0	86		86	379	551	172	
Phase Task Dates										



211010 CIP#

### Rehabilitation of Sludge Processing Complexes A and B

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	0	0	178	748	13,113	14,039	926

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



<ul> <li>Innovation</li> <li>Conceptual WW</li> <li>Water MP Right Si</li> <li>Reliability/Redund</li> <li>NEWTP Repurposi</li> </ul>	zing dancy Project New To CIP	Budget	Wastewater
Managing Date Original Busines	nager TBD rector Dan Alford g Dept WW Design Eng ss Case Prepared 8/7/2019 ect Added to CIP 2019	Class Lvl 1 Class Lvl 2 Class Lvl 3	Wastewater
Problem Statement	Addition of fine screens (1/4 inch) for more relic washing and compaction to reduce truck traffi more efficient, state-of-the-art, grit collection a truck traffic and cost of disposal. Improvements improve the performance of all downstream pr downstream equipment.	ic and cost of disposal. Imp Ind pumping system, and g s to the grit screenings and	provement of grit collection system with rit washing and classification to reduce grit removal and handling systems will
•	The work consists of evaluation, design and cor downstream of the bar racks, addition of scree removal within the aerated grit tank and grit we expansion as necessary of the existing building load out, including all lighting, HVAC, plumbing controls for operations and monitoring will also weather capacity requirements at PS1.	nings washing and compa ashing and/or classificatior that houses the screens ar g, electrical, and architectu	ction, inclusion of stacked tray grit a. Work also includes the upgrade and ad the screenings and grit handling and ural work. New instrumentation and
Other Important Info	Maintaining the MDEQ-NPDES required capacit the CIP Number 211006	ty during the construction p	phase of the project. Coordination with



#### PM Weighted Score 64 Criteria Score Comment Operations and Maintenance 4 Public Health and Safety 2 2 Regulatory (Environmental/Legal) Efficiency and Innovation 3 Financial 4 Condition 4 Public Benefit 2 Performance (Service Level/Reliability) 5

### **RC Weighted**

Score

64

Score	Comment
2	
3	
2	
4	
5	
4	
2	
4	Temp O&M plan in place
	2 3 2 4 5 4 2



WRRF PS1 Screening and Grit Improvements

Phase GLWA Er		Project mar	nagemer	n†		Contro	act N	A		Status Fu	ture Planned S	Start
<b>Title</b> GLWA Sal	aries											
Phase Budge	l Wastewa	ter						Cost A	Allocation (	CTA		
Phase Status	Future Plc	nned Start			Funding Source Bond Proceeds							
Start Date					Fund Construction Bond Fund							
End Date	•						U	seful Lif	e >20Yrs?	10		
С	ost Estimat	ion Informe	ation			То	t. Fede	eral Loa	n Amount			\$0
		Cost	Est. Clas	S			Pro	gram/A	llowance T	ask Informa	ation	
		Cost	Est. Date		F	Project Man	nager					
		Cost	Est. Sour	ce	(	CIP Number	r					
		Cost	Est. Prep	ared By	By Description							
Cost Ty	/pe	Fiscal Y	ear	Expense	e	Fringe Ber	nefitNo	nPersor	nne	Comme	ent	
GLWA Salaries	CIP2021	FY25			\$14				2021 CIP			
GLWA Salaries	CIP2021	FY26+		0	\$516				2021 CIP			
			Phase 1	otal Exp	ense	s By FY (Al	l figure	es are i	n \$1,000's)			
Prior Yr Actual	FY20	FY21	FY22	FY2	3	FY24	FY	25	FY26+	Total	5-Yr Total	
	0	0		0	0	0		14	516	530	14	



WRRF PS1 Screening and Grit Improvements

Phase Constructio	n				Contro	act TB	D		Status Fu	ture Planned S	Start	
Title Addition of F	ine Screens, N	lew Grit Co	ollection Sy	rstem								
Phase Budget W	astewater						Cost A	llocation	CTA			
Phase Status Fu	ture Planned	Start					Fundin	g Source	Bond Proce	eds		
Start Date								Fund	Constructio	n Bond Fund		
End Date						U	seful Life	e >20Yrs?	Yes			
Cost	Estimation Inf	ormation			То	t. Fede	ral Loar	n Amount			\$O	
		Cost Est. C	ass	Program/Allowance Task Information								
		Cost Est. Do	ate	Project Manager								
		Cost Est. Sc	urce	CIP Number								
		epared By	. 1	Description								
Cost Type	Fis	cal Year	Exper	nse	Fringe Ber	efilNor	Person	ne	Comme	ent		
Construction	FY26	+	\$	\$79,374 2021CIP								
		Phas	e Total Ex	pense	s By FY (Al	figure	s are ir	n \$1,000's)	)			
Prior Yr Actual F	Y20 FY2	1 FY2	22 F`	Y23	FY24	FY:	25	FY26+	Total	5-Yr Total		
0	0	0	0	0	0		0	79,374	79,374	0		
Phase Task Dates	;											
Phase Task Name	Start Date	End Date	e Dura	tion								
Procurement	7/1/2027	12/31/20	)27	183								
Project Execution	1/1/2028			1094								
Project Closeout	12/31/2030	2/28/20	)31	59								

GLW Great Lakes Water	<b>Authority</b>					WA FY 20 PS1 Scre				rovement	5	211011 CIF	
Phase Design &	Construct	ion Assis	tance			Contro	act TB	D		Status Fut	ure Planned St	art	
Title Addition c	of Fine Scre	ens, Ne	w Grit Co	llection S	System								
Phase Budget	Wastewa	ter						Cost /	Allocation	CTA			
Phase Status	Future Plc	nned St	art					Fundir	ng Source	Bond Procee	eds		
Start Date									Fund	Construction	Bond Fund		
End Date							U	seful Lif	e >20Yrs?	Yes			
С	ost Estimat	ion Infor	mation			То	t. Fede	ral Loa	n Amount			\$0	
			ost Est. Cl	220	Program/Allowance Task Information								
					Project Manager								
	Cost Est. Date Cost Est. Sour					CIP Number							
						Description							
			ost Est. Pre	eparea B	У	Description							
Cost Ty	ре	Fisco	I Year	Expe	pense Fringe BenefilNonPersonne Comment								
Engineering Ser	vices	FY26+		•	\$20,843				2021CI	Р			
			Phase	e Total E	xpense	s By FY (Al	figure	es are i	n \$1,000's	)			
Prior Yr Actual	FY20	FY21	FY2	2	FY23	FY24	FY	25	FY26+	Total	5-Yr Total		
0	0		0	0	0	0		0	20,843	20,843	0		
Phase Task Da	tes												
Phase Task Nar	ne Start	Date	End Date	e Dure	ation								
Pre-Procuremer	nt 5/	1/2025	6/30/20		60								
Procurement		1/2025	12/31/20		183								
Project Executio	on 1/	1/2026	2/28/20	31	1884								



211011 CIP#

### WRRF PS1 Screening and Grit Improvements

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	0	0	0	14	100,733	100,747	14

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



GLWA FY 2021-2025 CIP WRRF Aeration System Improvements

Innovation	Project Status Active	Equipment for aeration
□ Conceptual WW MP	CIP Type Project	system
□ Water MP Right Sizing		
Reliability/Redundan	CY Project New To CIP	
		8
		Budget Wastewater
Project Engineer/Manag	jer Vinod Sharma	Class Lvl 1 Wastewater
Direct	<b>tor</b> Philip Kora	Class Lvl 2 WRRF
Managing De	pt WW Construction Eng	Class LvI 3 Secondary Treatment & Disinfection
Date Original Business C	ase Prepared 4/25/2008	Location City of Detroit
Year Project	Added to CIP 2008	Fund and Cost Center Wastewater - 5421-892211
Problem Statement Imp	prove aeration system and provide ne	cessary inter-connections
Project Alternatives de & 2	cks, replacement of influent, Return A	and construction assistance for the oxygen baffle on Bay 10 of A1 & A2 ctivated Sludge (RAS) piping, isolation gate and valves for decks Nos. 3 for Intermediate Lift Pumps (ILP) Nos. 3, 4 & 7. The work also includes tors on Aeration Deck No. 1 & 2.
Other Important Info	allenges: N/A - Under Procurement	
Primary Driver N/	A - Under Procurement	

WRRF Aeration System Improvements

212003 CIP#

Phase not appli					Contro	act NA		Status Clo	osed Out				
Title Prior Year													
Phase Budget	Wastewc	iter			Cost Allocation CTA								
Phase Status	Closed C	out			Funding Source								
Start Date							Fund						
End Date						Useful Lif	e >20Yrs?	No					
C	ost Estima	tion Informa	tion		То	l. Federal Loa	n Amount						
	1	Cost	Est. Class		Program/Allowance Task Information								
		Cost	Est. Date		Project Man	ager							
		Cost	Est. Source		CIP Number	,							
		Cost	Est. Prepare	d By	By Description								
Cost Ty	pe	Fiscal Ye	ear E	xpense	Fringe Ben	efilNonPersor	ne	Comme	nt				
n/a		FY19-		\$3,805			2021 CIP	•					
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total				
3,805	0	0	0	0	0	0	0	3,805	0				
Phase Task Da	tes												

GLWA Great Lakes Water Authority

GLWA FY 2021-2025 CIP WRRF Aeration System Improvements	212003 c
Phase ConstructionContractPC-796StatusActive	
Title PC-796 Aeration System Improvements	
Phase Budget   Wastewater   Cost Allocation	
Phase Status         Active         Funding Source         Federal Loan Programs	
Start Date10/3/2016FundImprovement & Extension	on Fun
End Date9/24/2018Useful Life >20Yrs?Yes	
Cost Estimation Information Tot. Federal Loan Amount	
1         Cost Est. Class         Program/Allowance Task Information	
9/17/2018 Cost Est. Date Project Manager	
Contract Cost Est. Source CIP Number	
PMA Cost Est. Prepared By Description	
Cost Type         Fiscal Year         Expense         Fringe BenefitNonPersonne         Comment	
Construction FY19- \$12,068 2021CIP	
Construction FY20 \$126 2021CIP	
Phase Total Expenses By FY (All figures are in \$1,000's)	
Prior Yr Actual FY20 FY21 FY22 FY23 FY24 FY25 FY26+ Total 5-Yr Total	
12,068 126 0 0 0 0 0 0 12,194	0
Phase Task Dates	
Phase Task Name Start Date End Date Duration	
Project Execution 10/3/2016 3/2/2019 880	

GLWA Great Lakes Water Authority					GLWA FY 2021-2025 CIP WRRF Aeration System Improvements						212003 CIP
Phase Study and Design and Construction Assistance					Contract CS-157 Status Active					tive	
Title CS-157 Aero	ation Syst	em Improv	ements								
Phase Budget	Phase Budget Wastewater				Cost Allocation CTA						
Phase Status /	e Status Active				Funding Source Federal Loan Programs						
Start Date	2/21/2012							Fund li	mprovemei	nt & Extension I	- Un
End Date			2/28/2018			Use	ful Lif	ie >20Yrs? Y	'es		
Co	st Estimat	ion Informo	ntion		Tot. Federal Loan Amount						
	1		Est. Class						ask Informa	tion	
	1				Program/Allowance Task Information Project Manager						
	9/17/2019 Cost Est. Date										
Contract	Contract Cost Est. Source		(	CIP Number							
PMA Cost Est. Prepared By				ed By	Description						
Cost Typ	e	Fiscal Y	ear E		Fringe Ber	efilNonP	ersor	nne	Comme	nt	
Engineering Services FY19-		\$249									
Engineering Services FY20			\$10		2021 CIP						
			Phase Tot	al Expense	s By FY (Al	figures	are i	in \$1,000's)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25		FY26+	Total	5-Yr Total	
249	10	0	0	0	0		0	0	259	0	
Phase Task Date	es										
Phase Task Nam	e Start	Date En	d Date	Duration							
Project Execution			/26/2019	2712							

	. –					ion Syster	•				
nase GLWAEn	. ,	roject man	agement		Confro	ict NA		Status Ac	ctive		
le GLWA Sala											
Phase Budget	Wastewater				Cost Allocation CTA						
Phase Status	Active				Funding Source Federal Loan Programs						
Start Date							Fund	Improveme	nt & Extension		
End Date						Useful L	ife >20Yrs?	No			
C	ost Estimat	ion Informa	ition		To	. Federal Lo	an Amount				
	3	Cost	Est. Class			Program/	Allowance	Task Informa	ation		
7	7/31/2019	Cost	Est. Date		Project Man	ager					
		Cost	Est. Source		CIP Number						
РМА		Cost	Est. Prepare	ed By	Description						
Cost Ty	pe	Fiscal Ye	ear E		Fringe Ben	efilNonPersc	onne	Comme	ent		
GLWA Salaries (	WA Salaries CIP2021 FY19-		\$23 <sup>,</sup>	\$234 2021C							
			Phase Tot	al Expens	ses By FY (All	figures are	in \$1,000's	)			
rior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total		
234	0	0	0	(	0 0	0	) (	234	0		



### **WRRF** Aeration System Improvements

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	16,356	136	0	0	0	0	0	0	16,492	0
2020	0	0	11,851	4,831	0	0	0	0	0	0	0	16,682	0
2019	0	3,805	9,273	2,719	2,523					0	0	18,320	5,242
2018		2,348	11,197	2,658					0	0	0	16,203	13,855

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Cash flow projection is adjusted based on the latest status of construction.

Changes



# GLWA FY 2021-2025 CIP 212 WRRF Chlorination and Dechlorination Process Equipment Improvements

<ul> <li>Innovation</li> <li>Conceptual WW N</li> <li>Water MP Right Siz</li> <li>Reliability/Redund</li> <li>NEWTP Repurposin</li> </ul>	ancy Project New To CIP	Chlorinator/Sulfonato building	
		-	Wastewater
Project Engineer/Man	•	Class Lvl 1	
	ector Dan Alford	Class Lvl 2	
	Dept WW Design Eng		Secondary Treatment & Disinfection
-	s Case Prepared 8/8/2016		City of Detroit
real Ploje	ect Added to CIP 2010	Fund and Cost Center	Wastewater - 5421-892211
Scope of Work / Project Alternatives	The disinfection complex equipment con chemicals utilized in the operations of the levels. Scope of Work is to refurbish evaporators process water valves, gas safety panels, This proposed CIP budget is for construction through "As Needed Engineering Services	e area. This project is needed to re , chlorinators/sulfonators, replace compressors, gas flow meters, and on only. The design and construct 5 Contract CS-1481, Task #23".	regulating check valves, ejectors, d all accessories and appurtenances.
	*Innovation note: Align with consideration The maintenance of the equipment has equipment and maintaining them accord Challenges: Chlorine and sulfur dioxide a the public if an uncontrolled gas release production requirements is a challenge. Project History: The DMT Disinfection Com without any major projects. However buc reduced so the equipment condition has	't been performed at the recommeding to OEM specifications would re both extremely hazardous toxic occurs. Maintaining staff safety, re plex was commissioned in 2003 at lget and staffing reductions cause	provide reliable performance. c chemicals that can impact staff and egulatory compliance, and meeting nd was expected to operate until 2023
<b>Related Project</b>	The RRO segment 2, and RRO Disinfection control and existing DRO Chlorination an	Projects (PC-797) are potentially	



### WRRF Chlorination and Dechlorination Process Equipment Improvements

design and construction phase of "RRO Disinfection Project PC-797" in order to meet NPDES Permit requirements.

Primary Driver 1 - Condition

**Driver Explanation** Non-compliance with the manufacturers recommended maintenance schedule has caused the disinfection equipment condition to deteriorate.



**PM Weighted** 

Score

83.8

Criteria	Score	Comment
Condition	5	Replacement or major rehab needed immed
Performance (Service Level/Reliability)	4	High Risk of Performance Failures
Regulatory (Environmental/Legal)	5	Compliance Failure
Operations and Maintenance	4	High levels of O&M
Public Health and Safety	5	Likely to address major hazard issues or conce
Public Benefit	4	Significant impact on public image
Financial	3	Moderate positive financial implications throg
Efficiency and Innovation	2	Significant Operational efficiency

## **RC Weighted**

Score

### 81.6

Criteria	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Public Health and Safety	5	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	4	
T		



WRRF Chlorination and Dechlorination Process Equipment Improvements

Phase not appli					Contro	act NA	١		Status C	losed Out			
Title Prior Year	Actual Exp	Denses											
Phase Budget	Wastewa	ter			Cost Allocation CTA								
Phase Status	Closed O	ut					Fundin	g Source					
Start Date								Fund					
End Date					Useful Life >20Yrs? No								
C	ost Estimat	lion Informa	tion		Tot. Federal Loan Amount								
	1	Cost	Est. Class		Program/Allowance Task Information								
		Cost	Est. Date		Project Manager								
		Cost	Est. Source		CIP Number	,							
			Est. Prepare		d By Description								
Cost Ty	pe	Fiscal Ye	ear E		Fringe Ber	efilNor	Person	ne	Comme	ent			
n/a		FY19-		\$86	-			2021 CIP					
			Phase Tot	al Expense	es By FY (All	figure	s are iı	n \$1,000's)					
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total			
86	0	0	0	0	0		0	0	86	5 0	1		
Phase Task Da	ase Task Dates												

GLW Great Lakes Water Auto	<b>A</b> <i>hority</i>	W	/RRF Chl	orinatio		WA FY 20 Ind Dech			-	quipmen	t Improveme	212004 CIP ents
Phase Construction	on					Contro	act (	CON-238	3	Status Un	der Procureme	ent
Title Chlorination	and Dec	hlorinatic	n Process	Equipme	ent In	nprovemen	ts					
Phase Budget 🕅	/astewate	er						Cost	Allocation	CTA		
Phase Status U	nder Proc	curement						Fundi	ng Source	Bond Proce	eds	
Start Date			3/3/201	8					Fund	Constructio	n Bond Fund	
End Date			8/25/201	9				Useful Li	fe >20Yrs?	Yes		
Cos	t Estimatio	on Inform	ation		Tot. Federal Loan Amount							
	4	Cost	Est. Class		Program/Allowance Task Information							
10,	10/2/2017 Cost Est. Dat					Project Man	ager					
	Cost Est. Source				CIP Number							
Ali Khraizat					I	Description						
Cost Type	e	Fiscal Y	'ear	Expense	kpense Fringe BenefitNonPersonne Comment						ent	
Construction		FY20		\$3	,584	20210			2021CI	Р		
Construction		FY21		\$1	,698				2021CI	Р		
			Phase To	otal Exp	ense	s By FY (Al	figu	res are i	in \$1,000's	)		
Prior Yr Actual F	Y20	FY21	FY22	FY2	3	FY24	F	Y25	FY26+	Total	5-Yr Total	
0	3,584	1,698		0	0	0		0	C	5,282	1,698	
Phase Task Date	S											
Phase Task Name	e Start D	ate Er	nd Date	Duratic	n							
Pre-Procurement	7/1,	/2016 6	6/30/2017		364							
Procurement	2/20/	/2018 9	9/29/2019		586							
Project Execution			2/22/2020		449							
Project Closeout	12/23,	/2020	6/21/2021		180							

GLV Great Lakes Wa	<b>VA</b> ter Authority	W	RRF Chlo		WA FY 20 and Dech				quipment	l Improvem	212004 CI ents	
<b>Phase</b> GLWA E <b>Title</b> GLWA Sc		Project man	agement		Contro	act N	A		Status Ac	tive		
Phase Budge	<b>W</b> astewa	ter			Cost Allocation CTA							
Phase Statu	s Active				eds							
Start Date	e			Fund Construction Bond Fund								
End Date	e				Useful Life >20Yrs? No							
(	Cost Estimat	tion Informc	ition		Tot. Federal Loan Amount   \$0							
	5			Pro	gram/A	llowance 1	ask Informa	ation				
		Cost	Est. Date		Project Man	ager						
		Cost	Est. Source	e CIP Number								
		Cost	Est. Prepare	ed By Description								
Cost T	уре	Fiscal Ye	ear E		Fringe Ben	efilNo	nPerson	ne	Comme	nt		
GLWA Salaries	CIP2021	FY19-		\$11				2021 CIF	)			
GLWA Salaries	CIP2021	FY20		\$76				2021 CIF	D			
GLWA Salaries	CIP2021	FY21		\$88				2021 CIF	<b>)</b>			
			Phase Tot	al Expense	es By FY (All	figure	es are ir	n \$1,000's]				
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total		
11	76	88	0	0	0		0	0	175	88		

### Phase Task Dates



212004 CIP#

# WRRF Chlorination and Dechlorination Process Equipment Improvements

Phase Construct	ion Assista			Contro	act N	lew		Status Ac	tive				
Title CS-301 Task	< 23 - Gen	eral Eng Se	erves (S	igma)									
Existing DWSD co	ontract co	overted over	er to ne	ew GLWA	contro	act.							
Phase Budget	Wastewat	er						Cost Al	location	CTA			
Phase Status	Active				Funding Source						Bond Proceeds		
Start Date					Fund Construction Bond						n Bond Fund		
End Date							I	Useful Life	Yes				
Co	Cost Estimation Information					То	t. Fed	eral Loan	Amount			\$0	
	5	Cost	Est. Cla	ass			Pro	gram/All	owance	Task Informa	tion		
9,	9/12/2018 Cost Est. Date						ager						
Contract	Contract Cost Est. Source				CIP Number								
WRRF Eng Des	ign	Cost	Est. Pre	pared By	By Description								
Cost Typ	be	Fiscal Ye	ear	Exper	pense Fringe BenefitNonPersonne Comment					nt			
Engineering Serv	ices	FY19-			\$93				2021 CI	CIP			
Engineering Serv	ices	FY20			\$66				2021 CI	C			
Engineering Serv	ices	FY21			\$64				2021 CI	C			
			Phase	e Total Ex	pense	s By FY (All	figur	es are in	\$1,000's]	)			
Prior Yr Actual	FY20	FY21	FY22	2 F`	(23	FY24	F	Y25	FY26+	Total	5-Yr Total		
93	93 66 64 0					0		0	0	223	64		
Phase Task Date	es												
Phase Task Nam	e Start E	Date En	d Date	Dura	ion								
Project Executior	ject Execution 6/27/2017 6/21/2021 1455												



# WRRF Chlorination and Dechlorination Process Equipment Improvements

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	190	3,726	1,850	0	0	0	0	0	5,766	1,850
2020	0	0	117	913	2,345	1,670	0	0	0	0	0	5,045	4,015
2019	0	86		2,101	2,422	661				0	0	5,270	5,184
2018			400	2,800	1,800				0	0	0	5,000	5,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Con number was approved and added to the data base. Eng. Services was transferred from CIP No. 380901.

Changes



# GLWA FY 2021-2025 CIP WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

212006 CIP#

<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> <li>Reliability/Redundar</li> <li>NEWTP Repurposing</li> </ul>	Project New To CIP	Plan view of RRO location
Project Engineer/Manag		BudgetWastewaterClass Lvl 1WastewaterClass Lvl 2WRRF
Managing D	ept WW Construction Eng	Class LvI 3 Secondary Treatment & Disinfection
Date Original Business (	Case Prepared 2/11/2015	Location City of Detroit
Year Project	Added to CIP 2014	Fund and Cost Center Wastewater - 5421-892211
	ovide project oversight and design build quirements at existing Rouge River Outf	d services for alternative disinfection services to meet NPDES Permit all
Scope of Work / Th	e consultant shall provide comprehensi	ve professional services for project oversight and Owner's

Project Alternatives representation for the PC-797 RRO Disinfection Progressive Design-Build Contract. The scope of work consists of completing basis of design, design and construction services to develop and implement a solution that will result in 100% disinfection of wet weather flow discharged from WRRF to Detroit River outfall and Rouge River Outfall in order to meet NPDES Permit requirements.

Other Important Info Challenges: N/A - Under Procurement.

Project History: The DR0-2 Outfall was originally designed in 1998 under CS-1150, and construction began in 1999 under PC-709. Some surface construction work and substantial underground work were performed, including construction of the entrance shaft, two access shafts, six diffuser riser shafts in the Detroit River, and about half of the length of the tunnel. On April 23, 2003, uncontrollable high rates of ground water mixed with Hydrogen Sulfide (H2S) inflow flooded the tunnel, and it has remained so since that time.

After the tunnel flooded, GLWA (then DWSD) terminated the PC-709 contract and looked for other alternative to complete the work. After further study of the tunnel construction a different alternative was considered and thus, scope for the Modified Detroit River Outfall No. 2 (MOD DR0-2) under CS-1448 design was established. This contract called for a design to construct a new rock tunnel at a higher elevation with Slurry Shield Tunnel Boring Machine (TBM). The design of the MOD DR0-2 was completed on December 2007 and the construction of the DR0-2 project under PC-771 was started on November 2008. Due to economic hardship during the fiscal year



# WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

	2008/2009, DWSD requested MDEQ to terminate this contract. After further discussion an agreement reached with GLWA (then DWSD) and MDEQ to allow termination of this Contract and look for feasible and cost effective solutions to meet the wet-weather discharge to Rouge River Outfall. Therefore, on April 2009, GLWA (then DWSD) terminated the PC-771, MOD DR0-2 Contract.
	The Rouge River Outfall No. 2 (RR0-2) proposal was first developed in 2009. The RR0-2 was to be a ground level conduit extending approximately 2,500 feet to the intersection of the Rouge River and the Rouge Shipping canal. The RR0-2 conduit was to be used during the wet-weather events and primary effluent to the river shall be disinfected by mixing of Chlorine and De-chlorination. The Basis of Design (BOD) for the RR0-2 project was issued on November 6, 2009. GLWA (then DWSD) performed a RR0-2 Segment- 1 contract to do the ancillary work such as modification of gates, stop logs and chlorine tank shut off valves at WRRF. In 2012/2013 the WRRF commissioned a study of the feasibility of alternative disinfection methods for meeting the requirements of the Rouge River Disinfection. The results of this study and a subsequent hydraulic study came to the conclusion that the existing conduits to the Rouge River had sufficient contact time to properly disinfect and dechlorinate the secondary effluent from the WRRF. If a method could be designed to shunt secondary flows to the Rouge River during wet weather and send primary effluent through the longer DRO, then a substantial savings would result from a new design approach. This approach was further explored and discussed with the MDEQ. The result is a NPDES permit modification allowing for the construction of the proposed Rouge River Outfall Disinfection project, keeping the April 2019 project completion date that had been in the NPDES permit.
	1. CS-1448, RR0-2 Segment 1-WRRF Modifications. 2. PC-786, RR0-2 Segment 1-WRRF Modifications.
	N/A - Under Procurement
Driver Explanation	N/A - Under Procurement



WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Phase not appl	icable				Contro	act N/	4		Status Clo	osed Out		
Title Prior Year	Actual Ex	penses										
Phase Budget	Wastewa	ater					Cost A	llocation C	TA			
Phase Status	Closed C	Dut			Funding Source							
Start Date					Fund							
End Date					Useful Life >20Yrs? No							
С	ost Estima	tion Informa	tion		Tot. Federal Loan Amount							
	1	Cost	Est. Class		Program/Allowance Task Information							
			Project Manager									
		Cost	Est. Source		CIP Number							
		Cost	Est. Prepare	ed By	By Description							
Cost Ty	pe	Fiscal Ye	ear E	xpense	Fringe Ber	nefitNor	Person	ne	Comme	nt		
n/a		FY19-		\$6,873				2021 CIP				
	Phase Total Expenses By FY (All figures are in \$1,000's)											
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total		
6,873	0	0	0	0	0		0	0	6,873	0		
Phase Task Da	tes											



WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Phase Construc [itle CS-1781 Rd		gement <sup>r</sup> Outfall (RR	20) Disinfe	ection (Al	ternc		act C	S-1781		Status A	ctive	
Phase Budget	Wastewa	ter						Cost A	llocation	CTA		
Phase Status	Active				Funding Source Federal Loan Programs							
Start Date			8/19/201	6	Fund Improvement & Extension Fu							
End Date	te 12/19/2016						ι	Jseful Lif	e >20Yrs?	Yes		
Co	ost Estimat	ion Informo	ition			То	t. Fede	eral Loai	n Amount			
	1	Cost	Est. Class				Pro	gram/A	llowance	Task Inform	ation	
7	/31/2019	Cost	Est. Date		P	roject Mar	ager					
Contract					CIP Number							
P. Kora		Cost	Est. Prepa	ared By	D	)escription						
Cost Ty	ре	Fiscal Ye	ear	Expense		Fringe Ber	nefitNc	nPerson	ine	Comme	ent	
Engineering Serv	vices	FY19-		\$1,	255				2021 CII	P		
Engineering Serv	vices	FY20		\$	355				2021 CII	P		
			Phase To	otal Expe	nses	s By FY (Al	figur	es are i	n \$1,000's	)		
Prior Yr Actual	FY20	FY21	FY22	FY23	3	FY24	F١	(25	FY26+	Total	5-Yr Total	
1,255	355	0		0	0	0		0	0	1,610	0	
Phase Task Da	les											
Phase Task Nan	ne Start I	Date En	d Date	Duration	า							
Project Executio	on 2/19	9/2016 6	/30/2020	15	593							



WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

<b>.</b>						<u> </u>				<b>A1 1</b>			
<b>hase</b> Design a	nd Build					Contro	act PC	-797		Status Ac	tive		
Title PC-797 Ro	uge River	Outfall	(RRO) Dis	infectio	on (Alterno	ative)							
Phase Budget	Wastewa	iter						Cost A	llocation (	CTA			
Phase Status	Active					Funding Source Federal Loan Programs							
Start Date		2/19/2016				Fund Improvement & Extension Fun							
End Date			12/31	/2019		Useful Life >20Yrs? Yes							
C	Cost Estimation Information					Tot. Federal Loan Amount							
	1	C	Cost Est. C	lass			Prog	ram/A	llowance T	ask Informa	ition		
7	7/31/2019 Cost Est. Date					Project Man	ager						
Contract	ontract Cost Est. Source				CIP Number								
РМА				l By	Description								
Cost Ty	ре	Fisc	al Year	Exp	pense	Fringe Ber	efilNon	Person	ne	Comme	nt		
Design-Build		FY19-			\$33,236				2021 CIP				
Design-Build		FY20			\$2,383				2021 CIP				
			Pha	se Total	l Expense	es By FY (All	figure	s are in	ו \$1 <i>,</i> 000's)				
Prior Yr Actual	FY20	FY21	FY	22	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total		
33,236	2,383		0	0	0	0		0	0	35,619	0		
Phase Task Da	les												
Phase Task Nan	ne Start	Date	End Da <sup>.</sup>	te Du	uration								
Project Executic	n 7/	1/2016	9/30/2	019	1186								
Project Closeou	t 10/	1/2019	6/30/2	020	273								



WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

<b>hase</b> GLWA Er	nployees Pi	roject man	agement		Contra	ict NA			Status Ac	tive		
itle GLWA Sal	aries											
Phase Budge	Wastewat	er					Cost Al	location C	CTA			
Phase Status	Active				Funding Source Federal Loan Programs							
Start Date					Fund Improvement & Extension F							
End Date	•				Useful Life >20Yrs? No							
C	ost Estimati	on Informa	tion		Tot	. Federo	al Loan	Amount			\$0	
	3	Cost	Est. Class			Progr	am/All	owance To	ask Informa	ation		
	7/31/2019 Cost Est. Date					Project Manager						
		Cost	Est. Source	2	CIP Number							
РМА		Cost	Est. Prepar	ed By	Description							
Cost Ty	/pe	Fiscal Ye	ear	Expense	Fringe Ben	efitNonf	Personn	ne	Comme	nt		
GLWA Salaries	WA Salaries CIP2021 FY19-					\$328 2021CI				CIP		
GLWA Salaries	WA Salaries CIP2021 FY20							2021 CIP				
Phase Total Expenses By FY (All figures are in \$1,000's)												
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY2	5	FY26+	Total	5-Yr Total		
	10	0	0	C	) 0		0	0	338	0		



212006 CIP#

### WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	41,692	2,748	0	0	0	0	0	0	44,440	0
2020	0	0	26,441	17,009	4,583	0	0	0	0	0	0	48,033	4,583
2019	0	6,873	20,619	15,817	4,157					0	0	47,466	19,974
2018	729	6,530	15,800	15,520	9,020				0	0	0	47,599	40,340

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIPCash flow projection is adjusted based on the actual progress of the work as of 7/1/18. \$248,569 inspectionChangescredit from CS-1781 is reflected in the cash flow projection.



# GLWA FY 2021-2025 CIP WRRF Rehabilitation of the Secondary Clarifiers

<ul> <li>Innovation</li> <li>Conceptual WW M</li> <li>Water MP Right Sizir</li> <li>Reliability/Redundation</li> <li>NEWTP Repurposing</li> </ul>	Incy CIP Type Project	Secondary Clarifi	ers
		Budget	Wastewater
	<b>iger</b> Beena Chackunkal	Class Lvl 1	Wastewater
_	<b>ctor</b> Dan Alford	Class Lvl 2	WRRF
	Dept WW Design Eng	Class Lvl 3	Secondary Treatment & Disinfection
-	Case Prepared 7/27/2016	Location	City of Detroit
Year Projec	t Added to CIP 2017	Fund and Cost Center	Wastewater - 5421-892211
	nis project will provide for inspection, study, d		in components such as the rake arms. refurbishing the secondary clarifiers. A
Scope of Work / Th Project Alternatives C B e	nis project will provide for inspection, study, d ey component will be the inspection of the c omponents is determined, alternatives will be onstructed. The scope will also include evalu Houses have energy intensive HVAC units. Th nergy efficient units.	lesign, and construction for concrete and the rake arms e evaluated and the select uating and designing isolation hese will be evaluated for p	refurbishing the secondary clarifiers. A . Once the condition of these ed alternative will be designed and on gates for the individual clarifiers. The potential payback with alternative,
Scope of Work / Project Alternatives C B Other Important Info ti ir P	nis project will provide for inspection, study, d ey component will be the inspection of the c omponents is determined, alternatives will be onstructed. The scope will also include evalu Houses have energy intensive HVAC units. Th	lesign, and construction for concrete and the rake arms e evaluated and the select uating and designing isolation hese will be evaluated for p ecause only one or two clari mabilitation for each clarifien	refurbishing the secondary clarifiers. A . Once the condition of these ed alternative will be designed and on gates for the individual clarifiers. The potential payback with alternative, fiers can be taken out of service at a r depending upon the results of the have been rehabilitated in the past for
Scope of Work / Project Alternatives C B Other Important Info Ti ir P O Related Project	his project will provide for inspection, study, d ey component will be the inspection of the c omponents is determined, alternatives will be onstructed. The scope will also include evalu Houses have energy intensive HVAC units. Th nergy efficient units. Challenges: This will be a long term project be me. Also, there may be different levels of reh aspection. roject History: There are 25 secondary clarifient ther components such as RAS pumps, trough	lesign, and construction for concrete and the rake arms e evaluated and the selecter uating and designing isolation hese will be evaluated for p ecause only one or two clari nabilitation for each clarifien rs at the GLWA WRRF. They as and weirs, and center drive	refurbishing the secondary clarifiers. A . Once the condition of these ed alternative will be designed and on gates for the individual clarifiers. The potential payback with alternative, fiers can be taken out of service at a r depending upon the results of the have been rehabilitated in the past for ves. It is time to refurbish some of the
Scope of Work / Project Alternatives C B Other Important Info Ti ir P O Related Project	his project will provide for inspection, study, d ey component will be the inspection of the c omponents is determined, alternatives will be onstructed. The scope will also include evalu Houses have energy intensive HVAC units. Th nergy efficient units. Challenges: This will be a long term project be me. Also, there may be different levels of reh aspection. roject History: There are 25 secondary clarifient ther components such as RAS pumps, trough ther key components. his project should be coordinated with the reference vere not previously upgraded.	lesign, and construction for concrete and the rake arms e evaluated and the selecter uating and designing isolation hese will be evaluated for p ecause only one or two clari nabilitation for each clarifien rs at the GLWA WRRF. They as and weirs, and center drive	refurbishing the secondary clarifiers. A . Once the condition of these ed alternative will be designed and on gates for the individual clarifiers. The potential payback with alternative, fiers can be taken out of service at a r depending upon the results of the have been rehabilitated in the past for ves. It is time to refurbish some of the



#### PM Weighted Score

58.4

Criteria	Score	Comment
Condition	4	Asset has <25% of its design service life remain
Performance (Service Level/Reliability)	3	Generally meets design needs, moderate risk
Regulatory (Environmental/Legal)	4	Moderate risk of causing regulatory violation
Operations and Maintenance	3	Moderate levels of O&M. Project will alleviate
Public Health and Safety	3	Failure not catastophic, moderate chance of
Public Benefit	3	Moderate savings for GLWA
Financial	1	Will generate savings
Efficiency and Innovation	1	Project will have a moderate impact on energ

# RC Weighted

Score

# 53.2

Criteria	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Public Health and Safety	1	
Public Benefit	4	
Financial	1	
Efficiency and Innovation	1	
T		



WRRF Rehabilitation of the Secondary Clarifiers

<b>hase</b> GLWA E <b>itle</b> GLWA Sc		roject man	agement		Contro	ict NA			Status F	uture Planne	d Start
Phase Budge	<b>Wastewat</b>	ter				C	ost Allo	ocation C	TA		
Phase Statu	s Future Pla	nned Start			Funding Source Bond Proceeds						
Start Dat	e							Fund C	Construct	ion Bond Fund	b
End Dat	e					Usefu	ul Life 🤅	>20Yrs? N	lo		
	Cost Estimat	ion Informa	ition		To	. Federal	Loan /	Amount			\$0
	4	Cost	Est. Class			Progra	m/Allo	wance To	ask Inforr	nation	
	10/1/2017	Cost	Est. Date		Project Man	ager					
		Cost	è	CIP Number							
Ali Khraizat		Cost	Est. Prepar	ed By	Description						
Cost <sup>-</sup>	уре	Fiscal Ye	ear	Expense	Fringe Ben	efilNonPe	ersonne	Э	Comn	nent	
GLWA Salaries	CIP2021	FY22		\$15				2021 CIP			
GLWA Salaries	CIP2021	FY23		\$86				2021 CIP			
GLWA Salaries	CIP2021	FY24		\$86				2021 CIP			
GLWA Salaries	CIP2021	FY25		\$90				2021 CIP			
GLWA Salaries	CIP2021	FY26+		\$395				2021 CIP			
			Phase To	tal Expense	s By FY (All	figures a	re in S	\$1,000's)			
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25		FY26+	Total	5-Yr Tota	
0	0	0	15	86	86		90	395	67	2 27	77



WRRF Rehabilitation of the Secondary Clarifiers

212007 CIP#

Phase Study and	l Design a	nd Co	nstructior	n Assist	tance	Contr	act N	IA		Status Fu	uture Planned S	tart
<b>Title</b> Rehabilitat	ion of the	Secon	ndary Cla	rifiers								
Phase Budget	Wastewat	er						Cost A	llocation	CTA		
Phase Status	Future Pla	nned S	Start					Funding	g Source	Bond Proce	eeds	
Start Date			2/7	/2020		Fund Construction Bond Fund						
End Date			3/15	/2025			ι	Jseful Life	e >20Yrs?	Yes		
Cc	st Estimati	ion Info	ormation			Тс	ot. Fede	eral Loan	Amount			
	4	C	Cost Est. C	lass			Pro	gram/Al	lowance 1	Task Inform	ation	
10	0/2/2017	C	Cost Est. D	ate		Project Mar	nager					
		C	Cost Est. S	ource		CIP Numbe	r					
Ali Khraizat			Cost Est. P			Description						
				repart	cuby							
Cost Typ	be	Fisc	al Year	E	Expense	Fringe Ber	nefilNc	nPersonr	ne	Comm	ent	
Engineering Serv	ices	FY23			\$34	1			2021 CIF	P		
Engineering Serv		FY24			\$79				2021 CIF			
Engineering Serv		FY25			\$36				2021 CIF			
Engineering Serv	ices	FY26+	ł		\$47	9	2021 CIP					
			Pha	se Tot	al Expen	ses By FY (Al	l figur	es are in	\$1,000's	)		
Prior Yr Actual	FY20	FY21	۱ F۱	′22	FY23	FY24	F	Y25	FY26+	Total	5-Yr Total	
0	0		0	0	34	1 793		361	479	1,974	4 1,495	
Phase Task Dat	es											
Phase Task Nam	e Start [	Date	End Da	te	Duration							
Pre-Procuremen	t 4/29	2022	6/28/2	2022	6	C						
Procurement	6/29	/2022	2/4/2	2023	22	C						
Project Executio	n 2/5	5/2023	10/8/2	2028	207	2						

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WRRF Rehabilitation of the Secondary Clarifiers

Phase Construct	tion				Contro	act NA		Status Fu	ture Planned S	Start
<b>Title</b> Rehabilitat	tion of the Se	econdary C	Clarifiers							
Phase Budget	Wastewater					Cos	t Allocation	CTA		
Phase Status	Future Planr	ned Start				eds				
Start Date		3/	31/2022				Fund	Constructio	n Bond Fund	
End Date		3/15/2025				Useful	Life >20Yrs?	Yes		
Co	Cost Estimation Information				То	t. Federal Lo	oan Amount			
	3 Cost Est. Class					Program	/Allowance	Task Informa	ation	
	Cost Est. Date				Project Man	ager				
	Cost Est. Source				CIP Number	r				
Engineer					Description					
			_							
Cost Typ Construction		Fiscal Yea Y25	r Exp	pense \$81	Fringe Ber	efilNonPers	Comme	ent		
Construction		Y26+		ەەر \$27,414			2021CII 2021CII			
	· · · · · · · · · · · · · · · · · · ·			-		<b>.</b>				
				-		-	e in \$1,000's	-		
Prior Yr Actual		FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
0	0	0	0	0	0	8	1 27,414	27,495	81	
Phase Task Dat	es									
Phase Task Nam	ne Start Da	te End [	Date Du	uration						
Procurement	11/26/2		4/2025	179						
Project Executio			8/2028	1171						
Project Closeout	t 8/9/2	2028 10/3	3/2028	60						



### WRRF Rehabilitation of the Secondary Clarifiers

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	15	427	879	532	28,288	30,141	1,853
2020	0	0		0	0	0	0	71	933	29,114	0	30,118	1,004
2019	0				859	1,374	3,680	9,216	19,676	0	0	34,805	15,129
2018			301	3,576	5,543	5,540	5,540	10,499	0	0	0	30,999	20,500

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Project schedule was adjusted to begin construction after we estimate PS No. 1 rack and grit improvements project to take place.



GLWA FY 2021-2025 CIP WRRF Aeration Improvements 1 and 2 212008 CIP#

Innovation	Project Status Future Planned	Intermediate Lift Pump	7
Conceptual WW MP	CIP Type Project	Station N.	2
<ul> <li>Water MP Right Sizing</li> <li>Reliability/Redundancy</li> <li>NEWTP Repurposing</li> </ul>	Project New To CIP		
		Budget	Wastewater
Project Engineer/Manager 🗄	Beena Chackunkal	Class Lvl 1	Wastewater
<b>Director</b>	Dan Alford	Class Lvl 2	WRRF
Managing Dept	WW Design Eng	Class Lvl 3	Secondary Treatment & Disinfection
Date Original Business Case	Prepared 9/14/2017	Location	City of Detroit
Year Project Add	led to CIP 2017	Fund and Cost Center	Wastewater - 5421-892211

Problem Statement The ILPs convey primary effluent to the secondary bioreactors (aeration decks). These pumps have reached their useful life and are in need of replacement. The pump selection is integrally connected to improvements in the aeration decks related to the conversion to biological phosphorus removal, implementation of step feed and overall improved hydraulic control in the aeration decks and flow control through the secondary system. Implementation of biological phosphorus removal will reduce oxygen and chemical use resulting in a more sustainable treatment system, and implementation of step feed will improve high flow management through the secondary system thus minimizing the volume of flow discharged without secondary system. Hydraulic improvements ease operations and minimize the operator attention on the numerous surface aerators.

Scope of Work / The work consists of evaluation, design and construction of the replacement of ILPs 1 & 2, conversion of aeration decks 1 & 2 to incoprorate biological phosphorus removal, including replacement of mixers in Bays 1, 2 and 3, relocation of the oxygen feed, and a new purge blower. Incorporation of step feed includes modification of the influent conditions to allow primary effluent to be directed to Bay 1, as well as two other locations down the length of the tank. Weir length will be increased to reduce the variation in the hydraulic grade line across the tank to maintain adequate submergence of mixer/aerators and reduce the frequency of mixer/aerators tripping out on surge. Replacement of Mixer/aerators in Decks 4 through 10 will be evaluated and could be included as an add-alternate to the contract.

Other Important Info Opportunity for a common header system to allow for any ILP to supply any bioreactor. If feasible provide ILPs that can meet the regulatory and dry weather needs without the need for speed control.



### WRRF Aeration Improvements 1 and 2

Challenges: Maintaining the required wet weather secondary capacity of 930 MGD while operating efficiently during dry weather flows.

Project History: ILP Station No. 1 houses ILP Nos. 1 and 2. The pumps are vertical turbine type each with a maximum capacity of 365 MGD and a motor size of 2,500 hp. The pumps are equipped with variable frequency drives (VFDs) to vary the pump speed. ILP Nos. 1 and 2 can feed Aeration Deck Nos. 1 and 2.

ILP Station No. 2 houses ILP Nos. 3, 4, and 7. The pumps are vertical turbine pumps with a maximum rated design capacity of 350 MGD each and a motor size of 2,500 hp. The pumps are also equipped with VFDs. ILP Nos. 3 and 4 feed Aeration Deck Nos. 3 and 4, while ILP No. 7 is a swing pump and can be used to transfer wastewater to Aeration Deck Nos. 2, 3, or 4.

**Related Project** PC-796: Aeration System Improvements, which is under construction.

**Primary Driver** 3 - Regulatory



## PM Weighted Score 74.6

Score	Comment
3	Project part of GLWA strategic plan
4	Asset has <25% of its design service life remain
4	Risk of Performance Failure
3	Moderate levels of O&M. Project will alleviate
3	Project will have a moderate impact on energ
4	Total financial consequence of \$1,000,000-\$5,
5	Significant fines for Compliance Failure
3	Failure not catastophic, moderate chance of
	3 4 4 3 3 4 5

# RC Weighted

# Score

### 67.8

Score	Comment
3	
3	
3	
3	
3	
4	
4	
4	Rebuilt greater than 10 years
	3 3 3 3 3 3 4 4

GLWA Great Lakes Water Authority				WA FY 202 RRF Aerat		CIP vements 1	and 2		212008 CI			
Phase GLWA Employees F Title GLWA Salaries	Project man	agement		Contro	ict NA		Status Fut	ure Planned St	art			
Phase Budget Wastewa	ter				Cost	Allocation	CTA					
Phase Status Future Pla	inned Start				Func	ling Source	Bond Proce	eds				
Start Date						_		n Bond Fund				
End Date					Useful I	.ife >20Yrs?						
				Tot					0			
Cost Estimat				Tot. Federal Loan Amount\$0								
3	Cost	Est. Class			-	Allowance T	ask Informa	ition				
10/1/2018	Cost	Est. Date	Project Manager									
	Cost	Est. Source	CIP Number									
	Cost	Est. Prepar	ed By	Description								
Cost Type	Fiscal Ye	ear	Expense	Fringe Ben	efilNonPerso	onne	Comme	nt				
GLWA Salaries CIP2021	FY20		\$86			2021 CIF	)					
GLWA Salaries CIP2021	FY21		\$86			2021 CIP						
GLWA Salaries CIP2021	FY22		\$86			2021 CIF	)					
GLWA Salaries CIP2021	FY23		\$115			2021 CIF						
GLWA Salaries CIP2021	FY24		\$120			2021CIF						
GLWA Salaries CIP2021	FY25		\$121			2021CIF						
GLWA Salaries CIP2021	FY26+		\$35			2021CIF						
		Phase To	tal Expense	s By FY (All	figures are	in \$1,000's)						
Prior Yr Actua FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total				
0 86	86	86	115	120	121	35	649	528				
Phase Task Dates												



WRRF Aeration Improvements 1 and 2

212008 CIP#

Phase Constructic	n					Contro	act N	A		Status Fu	uture Planned Sto	
Title WRRF Rehab	vilitation of	of Interr	mediate	Lift Pump	s (ILPs)							
Phase Budget W	'astewate	er			Cost Allocation CTA							
Phase Status Fu	uture Plar	nned St	tart		Funding Source Bond Proceeds							
Start Date			6/2/	2021	Fund Construction Bond							
End Date			5/17/	2024			U	seful Life	>20Yrs?	Yes		
Cost	t Estimati	on Info	rmation		Tot. Federal Loan Amount							
	1		ost Est. C	ass			Pro	aram/All	owance	Task Inform	ation	
	+ 2/2017					Project Man		9. MIII/ AIII				
	10/2/2017 Cost Est. Date						r					
	Cost Est. Source											
Ali Khraizat		C	ost Est. Pr	epared B	3y	Description						
Cost Type	<del>)</del>	Fisco	al Year	Expe	ense	Fringe Ben	nefilNo	nPersonn	ne	Comme	ent	
Construction		FY23			\$6,398				2021 CI	Ρ		
Construction		FY24			\$39,229	,229 2021CIP						
Construction		FY25			\$13,930	,930 2021 CIP						
Construction		FY26+			\$4,744				2021 CI	P		
			Phas	e Total E	xpense	s By FY (All	l figure	es are in	\$1,000's	)		
Prior Yr Actual 🛛 F	Y20	FY21	FY:	22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
0						39,229		13,930	4,744	64,301	59,557	
Phase Task Date:	S											
Phase Task Name	1	Date	End Dat	e Dur	ation							
Procurement		/2022	8/27/20		180							
Project Execution	8/28	/2022	8/13/20	025	1081							
Project Closeout	8/14	/2025	10/13/20	025	60							

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GLW Great Lakes Water	<b>Authority</b>			-	LWA FY 2021 VRRF Aeratio			and 2		212008 CIP		
Phase Study and	d Design a	and Constru	ction Assis	tance	Contrac	NA		Status Fut	ure Planned St	art		
Title WRRF Reh	abilitation	of Intermed	diate Lift Pu	umps (ILPs)								
Phase Budget	Wastewa <sup>-</sup>	ter				Cost A	llocation (	CTA				
Phase Status	Status     Funding Source     Bond Proceeds											
Start Date		9/3/2018 Fund Construction Bond Fund										
End Date												
C	ost Estimat	ion Informa	tion		Tot. I	ederal Loan	n Amount					
	4	Cost	Est. Class			Program/Al	llowance To	ask Informa	tion			
		Cost	Est. Date		Project Manag	ger						
		Cost	Est. Source		CIP Number							
Ali Khraizat Cost Est. Prepared By Description												
Cost Ty	•	Fiscal Ye	ear	Expense	Fringe Benef	ilNonPersoni		Comme	nt			
Engineering Serv		FY20		\$9			2021CIP					
Engineering Ser		FY21		\$4,52			2021CIP					
Engineering Serv		FY22		\$7,89			2021 CIP					
Engineering Serv		FY23		\$1,10			2021 CIP					
Engineering Serv		FY24		\$1,28			2021CIP					
Engineering Serv		FY25		\$1,28			2021CIP					
Engineering Serv	/ices	FY26+		\$37	J		2021 CIP					
			Phase To	tal Expens	es By FY (All fi	gures are in	n \$1,000's)					
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total			
0	97	4,526	7,891	1,100	6 1,289	1,285	370	16,564	16,097			
Phase Task Da	es											
Phase Task Nan	ne Start I	Date End	d Date	Duration								
Pre-Procuremen App B - Pa	nt 6/24 nge 99	4/2019 9,	/30/2019	98	8							

GLWA Great Lakes Water Author	ity			WA FY 2021-2025 CIP 212008 /RRF Aeration Improvements 1 and 2
Phase Task Name	Start Date	End Date	Duration	
Procurement	10/1/2019	5/8/2020	220	
Project Execution	5/9/2020	10/13/2025	1983	



# Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	183	4,612	7,977	7,619	40,638	15,336	5,149	81,514	76,182
2020	0	0			229	500	656	6,727	5,910	6,811	0	20,833	14,022
2019	0				230	1,141	6,569	5,767	6,809	0	0	20,516	13,707

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP Changes made to planned projected expenditures by year. Total project cost estimate went up by \$300K. Changes

GLWA Great Lakes Water Authority		FY 2021-2025 CIP Aeration Improvements 3	212009 CIP# 3 and 4
$\blacksquare$ Innovation	Project Status Future Planned		
Conceptual WW MP	CIP Type Project		
□ Water MP Right Sizing			
✓ Reliability/Redundancy	Project New To CIP		
NEWTP Repurposing			
		Budget	Wastewater
Project Engineer/Manager T	BD	Class Lvl 1	Wastewater
Director 🛛	Dan Alford	Class Lvl 2	WRRF
Managing Dept V	VW Design Eng	Class LvI 3	Secondary Treatment & Disinfection
Date Original Business Case	<b>Prepared</b> 8/7/2019	Location	City of Detroit
Year Project Add	ed to CIP 2019	Fund and Cost Center	

Problem Statement The ILPs convey primary effluent to the secondary bioreactors (aeration decks). These pumps have reached their useful life and are in need of replacement. The pump selection is integrally connected to improvements in the aeration decks related to the conversion to biological phosphorus removal, implementation of step feed and overall improved hydraulic control in the aeration decks and flow control through the secondary system. Implementation of biological phosphorus removal will reduce oxygen and chemical use resulting in a more sustainable treatment system, and implementation of step feed will improve high flow management through the secondary system thus minimizing the volume of flow discharged without secondary system. Hydraulic improvements will ease operations and minimize the operator attention on the numerous surface aerators.

Scope of Work / Project Alternatives aration decks 3 & 4 to incoprorate biological phosphorus removal, including replacement of mixers in Bays 1 and 2, relocation of the oxygen feed, and a new purge blower. Incorporation of step feed includes modification of the influent conditions to allow primary effluent to be directed to Bay 1, as well as two other locations down the length of the tank. An assessment of reconfiguring decks 3 and 4 to four independent decks will also be assessed. Weir length will be increased to reduce the variation in the hydraulic grade line across the tank to maintain adequate submergence of mixer/aerators and reduce the frequency of mixer/aerators tripping out on surge. Replacement of Mixer/aerators in Decks 3 through 8 will be evaluated and could be included as an addalternate to the contract or included as a separate contract.

Other Important Info Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.





PM Weighted Score		
74.6		
Criteria	Score	e Comment
Public Health and Safety		3
Condition		4
Regulatory (Environmental/Legal)		5
Operations and Maintenance		3
Efficiency and Innovation		3
Financial		4
Performance (Service Level/Reliability)		4
Public Benefit		3
RC Weighted		
Score		
67.8		
Criteria	Score	Comment
Public Health and Safety	3	
Efficiency and Innovation	4	
Condition	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Public Benefit	3	

3

3

Financial

Performance (Service Level/Reliability)

GLW Great Lakes Water A	<b>A</b> uthority					NA FY 2021 RF Aeratio			3 and 4		21200
hase GLWA Em	. ,	roject mar	nagemen	t		Contract	NA		Status Fu	uture Planned S	tart
itle GLWA Sala	ries										1
Phase Budget	Wastewat	er					Cost	Allocation	CTA		
Phase Status	Future Pla	nned Start					Fundi	ing Source	Bond Proce	eds	
Start Date								Fund	Constructio	on Bond Fund	
End Date							Useful Li	ife >20Yrs?	No		
Co	ost Estimati	on Informo	ation			Tot. F	ederal Loc	an Amount			\$0
		Cost	Est. Class	;			Program/	Allowance	Task Inform	ation	
		Cost	Est. Date		P	roject Manag	ger				
		Cost	Est. Sourc	e	C	CIP Number					
		Cost	Est. Prepo	ared By	D	<b>Description</b>					
Cost Typ	be	Fiscal Y	ear	Expense	•	Fringe Benef	ilNonPerso	nne	Comme	ent	
GLWA Salaries C	IP2021	FY25			\$14			2021 CI	Р		
GLWA Salaries C	IP2021	FY26+		\$	516			2021CI	Р		
			Phase T	otal Expe	enses	s By FY (All fig	gures are	in \$1,000's	)		
Prior Yr Actua	FY20	FY21	FY22	FY23	3	FY24	FY25	FY26+	Total	5-Yr Total	
0	0	0		0	0	0	14	516	5 530	14	

					GI	NA FY 20	21-20	25 CI	D			212009 CIP
GLWA Great Lakes Water Author	<b>A</b> ority					RF Aerat				3 and 4		212007 CIP
Phase Constructio	n					Contro	ict TB	D		Status Fut	ure Planned S	Start
Title WRRF Rehab	ilitation	of Inter	mediate L	ift Pump	os (ILPs) 3,	4 and 7						
Phase Budget W	astewat	ter						Cost A	llocation	CTA		
Phase Status Fu	iture Pla	nned S	tart					Fundir	ng Source	Bond Proce	eds	
Start Date									Fund	Constructior	n Bond Fund	
End Date							U	seful Lif	e >20Yrs?	Yes		
Cost	Estimati	ion Info	rmation			То	. Fede	ral Loa	n Amount			\$O
		С	ost Est. Cl	155			Prog	gram/A	llowance	Task Informc	ition	
		С	ost Est. Da	te	P	Project Man	ager					
		С	ost Est. So	urce	0	CIP Number	,					
		С	ost Est. Pre	pared I	By D	Description						
				-								
Cost Type	)	Fisco	al Year	Exp	ense	Fringe Ben	efitNor	Person	ine	Comme	nt	
Construction		FY26+			\$57,983				2021CI	P		
			Phase	e Total I	Expenses	s By FY (All	figure	es are i	n \$1,000's	)		
Prior Yr Actual F	Y20	FY21	FY2	2	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total	
0	0		0	0	0	0		0	57,983	57,983	0	
Phase Task Dates	5											
Phase Task Name	Start [	Date	End Date	Dur	ration							
Procurement	7/1	/2027	12/31/20	27	183							
Project Execution	1/1	/2028	12/31/20	30	1095							
Project Closeout	1/1	/2031	3/1/20	31	59							

	_												
GIWA				GL	WA FY 20	21-20	25 CI	P			212009 CIP		
Great Lakes Water Author	ity			W	<b>RRF</b> Aera	ion In	nprov	ements 3	3 and 4				
Phase Design & Co	onstruction As	sistance			Contro	act TB	D		Status Fut	ure Planned St	art		
Title WRRF Rehabi	litation of Inte	ermediate	.ift Pumps (	LPs) 3	3,4 and 7								
Phase Budget Wa	astewater						Cost A	Allocation (	CTA				
Phase Status Fut	ture Planned	Start					Fundir	ng Source E	Bond Procee	eds			
Start Date	Start Date Fund Construction Bond Fun												
End Date	End Date Useful Life >20Yrs? Yes												
Cost	Estimation Inf	ormation		1	То	t. Fede	r <b>al Loa</b> i	n Amount			\$0		
		Cost Est. C	ass	Program/Allowance Task Information									
		Cost Est. Do	ıte	Project Manager									
		Cost Est. Sc		CIP Number									
					Description								
		Cost Est. Pr	ерагеа ву		Description								
Cost Type	Fisc	cal Year	Expens	e	Fringe Ber	nefilNor	Person	nne	Commer	nt			
Engineering Service	es FY26	+	\$1	5,250				2021 CIP	)				
		Phas	e Total Exp	oense	es By FY (Al	l figure	s are i	n \$1,000's)					
Prior Yr Actual FY	′20 FY2	1 FY:	22 FY	23	FY24	FY	25	FY26+	Total	5-Yr Total			
0	0	0	0	0	0		0	15,250	15,250	0			
Phase Task Dates													
Phase Task Name	Start Date	End Dat	e Durati	on									
Pre-Procurement	5/1/2025	6/30/20	25	60									
Procurement	7/1/2025	12/31/20	25	183									
Project Execution	1/1/2026	3/1/20	31	1885									



### WRRF Aeration Improvements 3 and 4

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	0	0	0	14	73,749	73,763	14

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

Innovation	Project Status Future Planned							
Conceptual WW	_							
<ul> <li>Water MP Right Si</li> <li>Reliability/Redund</li> </ul>								
	ng	Budget Wastewater						
Project Engineer/Ma	nager TBD	Class Lvl 1 Wastewater						
Di	irector Dan Alford	Class Lvl 2 WRRF						
Managing	g Dept WW Design Eng	Class Lvl 3 Secondary Treatment & Disinfection						
Date Original Busines	ss Case Prepared 8/7/2019	Location City of Detroit						
Year Proje	ect Added to CIP 2019 Fu	und and Cost Center						
Problem Statement	primary effluent bypass with sodium bisulfite for dechl gaseous chlorine for disinfection of the secondary eff							
Scope of Work / Project Alternatives New of the new system to assess actual dosage required to achieve permit compliance and storage available with the existing system. The assessment will include preliminary design of modifications required to enable sodium hypochlorite feed to the secondary treatment effluent and an assessment of the storage requirements at varying sodium hypochlorite concentrations. The assessment will also include the appetite for a chemical manufacturer to own and operate a sodium hypochlorite generation facility in close proximity to the								

chemical manufacturer to own and operate a sodium hypochlorite generation facility in close proximity to facility that would allow piping of sodium hypochlorite to the site (in lieu of providing additional storage, if required, on-site).



PM Weighted Score		
69		
Criteria	Score	Comment
Public Benefit	5	
Condition	3	
Efficiency and Innovation	2	
Regulatory (Environmental/Legal)	4	
Public Health and Safety	5	
Operations and Maintenance	4	

2 2

Finar	

### **RC Weighted**

Performance (Service Level/Reliability)

Score

65

Criteria	Score	Comment
Operations and Maintenance	4	
Financial	2	
Public Benefit	4	
Public Health and Safety	5	
Efficiency and Innovation	2	
Condition	2	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	4	
T		

<b>GLWA</b> Great Lakes Water Authority
Great Lakes water Authority

## WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

Phase GLWA Employe Iitle GLWA Salaries	es Project ma	nagemen	t	Contro	act NA		Status Fut	ure Planned S	Start		
Phase Budget Waste	water			Cost Allocation CTA							
Phase Status Future	Planned Star	†		Funding Source Bond Proceeds							
Start Date						Fund	Constructior	n Bond Fund			
End Date					Useful Li	fe >20Yrs?	١o				
Cost Est	mation Inform	ation		Тс	ot. Federal Loa	in Amount			\$0		
	Cos	t Est. Class	;	Program/Allowance Task Information							
	Cos	t Est. Date		Project Manager							
	Cos	t Est. Sourc	e:	CIP Number							
	Cos	t Est. Prepo	ared By	d By Description							
Cost Type	Fiscal `	Year	Expense	Fringe Ber	nefilNonPersor	nne	Comme	nt			
GLWA Salaries CIP202	1 FY25		\$14	L		2021 CIP					
GLWA Salaries CIP202	1 FY26+		\$516			2021 CIP					
		Phase T	otal Expense	es By FY (Al	l figures are i	in \$1,000's)					
Prior Yr Actua FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total			
0	0 0		0 0	0	14	516	530	14			

GLW Great Lakes Water.	GLWA Great Lakes Water Authority WRRF Conversion				GLWA FY 2021-2025 CIP of Disinfection of all Flow to Sodium Hypochlorite and S								
Phase Construct	hase Construction				Contr	act TB	D		Status Fut	ure Planned S	itart		
Title WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite													
Phase Budget	Wastewa	ater			Cost Allocation CTA								
Phase Status	Future Pl	anned Sta	rt				Fundir	ng Source B	Bond Procee	eds			
Start Date								Fund C	Constructior	n Bond Fund			
End Date						U	seful Lif	e >20Yrs? Y	'es				
Co	ost Estimo	ition Inform	nation		Тс	t. Fede	ral Loa	n Amount			\$0		
		Cos	t Est. Class		Program/Allowance Task Information								
	Cost Est. Date					Project Manager							
		]	t Est. Sourc	`A	CIP Number								
			t Est. Prep										
		0.5		lied by									
Cost Ty	ре	Fiscal	Year	Expense	Fringe Ber	nefilNor	Persor	ne	Comment				
Construction		FY26+		\$4,5	09			2021 CIP					
			Phase T	otal Exper	nses By FY (Al	l figure	s are i	n \$1,000's)					
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total			
0	0	C	)	0	0 0		0	4,509	4,509	0			
Phase Task Da	es												
Phase Task Nan	ne Start	Date E	nd Date	Duration									
Procurement	7,	/1/2027 1	2/31/2027	18	33								
Project Executio			2/31/2030	109									
Project Closeou	t 1,	/1/2031	3/1/2031		59								

GLW Great Lakes Water Aut	A hority		onvers	sion of I		WA FY 20 ction of c			-	ypochlori	te and Sod	212010 cii lium Bisulfite
Phase Design & C	Construct	ion Assiste	ance			Contro	act TB	D		Status Fut	ure Planned S	Start
Title WRRF Conve	ersion of	Disinfecti	ion of al	I Flow to S	to Sodium Hypochlorite and Sodium Bisulfite							
Phase Budget V	Vastewa	ter			Cost Allocation CTA							
Phase Status F	uture Plo	inned Sta	art		Funding Source Bond Proceeds							
Start Date									Fund	Constructior	n Bond Fund	
End Date							U	seful Lif	e >20Yrs?	Yes		
	1 <b>F</b> alling and	ion Inforn				Το	t Fede	ralloa	n Amount			\$0
Cos	i Estimat					10						ΨΟ
	Cost Est. Class					Program/Allowance Task Information						
			st Est. Do		Project Manager							
		Cos	st Est. So	ource								
		Cos	st Est. Pro	epared B	ed By Description							
Cost Type	Э	Fiscal	Year	Expe	Expense Fringe BenefilNonPersonne Comment							
Engineering Servio	ces	FY26+			\$947 2021CIP							
			Phas	e Total E	xpense	s By FY (Al	l figure	s are i	n \$1,000's	)		
Prior Yr Actual	=Y20	FY21	FY2	22 I	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
0	0	(	0	0	0	0		0	947	947	0	
Phase Task Date	S											
Phase Task Name	e Start I	Date E	End Date	e Duro	ation							
Pre-Procurement	5/	1/2025	6/30/20	)25	60							
Procurement			12/31/20		183							
Project Execution	1/	1/2026	3/1/20	)31	1885							



WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	0	0	0	14	5,972	5,986	14

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



## GLWA FY 2021-2025 CIP WRRF Rehabilitation of Central Offload Facility

213002 CIP#

<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> <li>Reliability/Redundance</li> <li>NEWTP Repurposing</li> </ul>	Project Status Cancelled CIP Type Project Project New To CIP	Powdered lime discharges into the COF causing lime to discharge throughout the building making the scrubber system to fail						
Project Engineer/Manage Directo Managing Dep Date Original Business Co	or Philip Kora of WW Construction Eng	BudgetWastewaterClass Lvl 1WastewaterClass Lvl 2WRRFClass Lvl 3Residuals ManagementLocationCity of DetroitFund and Cost CenterWastewater - 5421-892211						
syste		uipment including sludge storage bins, conveyors, and lime offload nprove reliability and performance. This improvement will enable WRRF						
Scope of Work / The study, design and construction for the rehabilitation of the central offload facility includes bin activators,								

**Scope of Work / Project Alternatives** rotary feeder valves, knife gate valves, bottom hoppers, conveyors, and other associated items. The work also includes rehabilitation of HVAC system of the entire facility, lime offloading system, drainage system, elevator, and doors.

Other Important Info Challenges: Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.

Project History: The Central Offload Facility was built under PC-744 (DWP-1074) as a design build project in 2005. The project completion was delayed due to the lime sludge slide gates on the lime mixers which were continuously leaking whenever sludge head in storage bins was high. This problem was finally resolved after replacing the gates. Due to the nature of lime and sludge and continuous operation of this facility, the equipment started failing causing various operational and maintenance problems. Eventually, the facility needs a major rehabilitation.

Related Project PC - 757: Rehabilitation of Primary Clarifiers and Pipe Gallery Improvements.

Primary Driver 1 - Condition

**Driver Explanation** N/A - Under Procurement



## PM Weighted Score 78.4

Criteria	Score	Comment
Condition	5	Replacement or major rehab needed immed
Performance (Service Level/Reliability)	5	Will cause capacity problems
Regulatory (Environmental/Legal)	4	Regulatory Compliance failure will lead to fine
Operations and Maintenance	4	High levels of O&M
Public Health and Safety	3	Moderate impact on public Health & Safety
Public Benefit	3	Moderate savings for GLWA
Financial	3	Will generate savings
Efficiency and Innovation	4	Project will remove significant operational hur

# **RC Weighted**

# Score

## 76.2

Score	Comment
4	
4	
4	
4	
4	
4	
3	
3	
	Score 4 4 4 4 4 4 4 3 3 3



WRRF Rehabilitation of Central Offload Facility

213002 CIP#

GLWA Salaries						
Phase Budget Wastewate	r	Cost Allocation	СТА			
Phase Status Active		Funding Source	Federal Loan Programs			
Start Date		Fund Improvement & Exter				
End Date		Useful Life >20Yrs? No				
Cost Estimatio	n Information	Tot. Federal Loan Amount	\$0			
3	Cost Est. Class	Program/Allowance Task Information				
9/17/2018	Cost Est. Date	Project Manager				
	Cost Est. Source	CIP Number				
P. Kora	Cost Est. Prepared By	Description				

Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total
0	0	0	0	0	0	0	0	0	0

#### Phase Task Dates

ase not app	licable				Contre	act NA	4		Status	Clos	ed Out	
le Prior Year	Actual Exp	oenses										
Phase Budge	t Wastewa	ter			Cost Allocation CTA							
Phase Statu	s Closed O	ut			Funding Source							
Start Date	9							Fund				
End Date	9					Us	seful Lif	e >20Yrs?	10			
C	Cost Estimation Information					Tot. Federal Loan Amount						
Cost Est. Class		Program/Allowance Task Information										
	Cost Est. Date				Project Mar	-				-		
			Est. Source	CIP Number								
			Est. Prepare									
			Phase Toto	al Expens	es By FY (Al	l figure	s are i	n \$1,000's)				
rior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY2	25	FY26+	Total		5-Yr Total	
	0	0	0	С	) 0		0	0		0	0	

<b>e</b> CS-1701 R	ehabilitatic	on of Centr	al Offload F	acility							
Phase Budge	Wastewat	er			Cost Allocation CTA						
Phase Status	Active						Fundir	ng Source	Federal Loc	n Programs	
Start Date		1	0/17/2016		Fund Improvement & Extension Fur						
End Date			1/19/2021		Useful Life >20Yrs? Yes						
C	Cost Estimation Information				Tot. Federal Loan Amount\$1,170,123						
	1 Cost Est. Class					Prog	gram/A	llowance	Task Inform	ation	
	9/12/2018 Cost Est. Date				Project Manager						
Contract		Cost	Est. Source		CIP Number						
A. Khraizat		Cost	Est. Prepare	ed By	Description						
			Phase Tot	al Expen	ses By FY (A	l figure	es are i	n \$1,000's	)		
ior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
0	0	0	0		0 0		0	С	0	0	

GLW Great Lakes Water						21-2025 C Ition of Ce		oad Facili	ity	213002 CIP	
Phase Construc	tion				Contro	act CON-27	79	Status Ac	tive		
<b>Title</b> Rehabilita	tion of Cei	ntral Offloc	ıd Facility								
Construction wi	II start afte	er the desig	n is comple	te.							
Phase Budget	Wastewa <sup>.</sup>	ter				Cost	Allocation	CTA			
Phase Status	Active					Fund	ling Source	Bond Proce	eds		
Start Date			7/20/2018				Fund	Construction Bond Fund			
End Date			1/19/2021			Useful I	.ife >20Yrs?	Yes			
Co	Cost Estimation Information					t. Federal Lo	an Amount		\$14,347,C	000	
	1	Cost	Est. Class		Program/Allowance Task Information						
9	/12/2018	Cost	Est. Date		Project Man	ager					
Contract		Cost	Est. Source		CIP Number	,					
A. Khraizat/P.	Kora	Cost	Est. Prepare	ed By	By Description						
			Phase Tot	al Expense	s By FY (All	figures are	in \$1,000's	;)			
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total		
0	0	0	0	0	0	C	) (	0 0	0		
Phase Task Dat	es										



### WRRF Rehabilitation of Central Offload Facility

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	0	0	982	4,204	7,696	3,297	0	0	0	0	0	16,179	10,993
2019	0	202	665	6,447	7,520	4,579				0	0	19,413	18,546
2018		800	5,850	6,750	4,350				0	0	0	17,750	16,950

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

### Description of CIP

**Changes** This project was terminated by GLWA for its convenience



WRRF Complex I Incinerators Decommissioning and Reusability

213005 CIP#

<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> <li>Reliability/Redundancy</li> <li>NEWTP Repurposing</li> </ul>	Project Status Cancelled CIP Type Project Project New To CIP	Complex – I Incinerator Building at the WRRF
		Budget Wastewater
Project Engineer/Manager	Ravi Yelamanchi	Class Lvl 1 Wastewater
Director	Dan Alford	Class Lvl 2 WRRF
Managing Dept	WW Design Eng	Class Lvl 3 Residuals Management
Date Original Business Cas	<b>e Prepared</b> 8/15/2016	Location City of Detroit
Year Project Ac	Ided to CIP 2014	Fund and Cost Center Wastewater - 5421-892211
Problem Statement This p	roject will decommission the C-I Incir	nerators building and investigate the re-usability.
Project Alternatives existin cost CIP ir than	ng pass through utilities. Provide reco and construction assistance, and relo ncludes study, design and minimum re incinerations. The cost to demolish eq	nissioning of the Complex-I demolition and relocation drawings for commendation for future reusability plan for Complex I. The demolition ocation of utilities is not included in this budgeted CIP. The budgeted ehabilitation to install heating to continue utilizing the building other quipment and rehabilitate the existing building for reuse is very high and reuse need of this building is well defined.
Rese Proje cycle	arch & Innovation. ct History: Complex I was installed an e. The Bio-solids Alternatives Evaluatio	alternative sludge handling; keep aligned with Master Plan and d in operation since the 1940's and has completed its valuable life n at the WWTP evaluated several options for long-term dewatering pecifically, the Complex I Incinerator Facility. Most of the options

indicated that a long-term phasing out of Complex I especially due to its aged equipment and challenges of meet regularity requirements.

Challenges: Possible challenges with this project will include shutdowns of the secondary water system and abatement of asbestos and lead for this building built 1940's. Some utility service lines may be shared with adjoining Complex II Incinerator and Complex I Dewatering.

**Related Project** n/a

Primary Driver 3 - Regulatory



WRRF Complex I Incinerators Decommissioning and Reusability

**Driver Explanation** Due to new EPA regulations and cost issues this facility will need to be phased out.



WRRF Complex I Incinerators Decommissioning and Reusability

PM Weighted	
Score	
38.4	

Criteria	Score	Comment
Condition	2	Asset has <25% of its design service life remain
Performance (Service Level/Reliability)	3	Process is out of service
Regulatory (Environmental/Legal)	1	Moderate risk of causing regulatory violation
Operations and Maintenance	3	Moderate positive impact on O&M
Public Health and Safety	1	Likely to address minor hazard issues or conce
Public Benefit	1	Moderate savings for GLWA
Financial	2	Will generate savings
Efficiency and Innovation	3	Project will have a moderate impact on energ

## **RC Weighted**

### Score

### 38.4

Score	Comment
2	
3	
1	
3	
1	
1	
2	
3	
	Score 2 3 1 3 1 3 1 1 2 2 3



WRRF Complex I Incinerators Decommissioning and Reusability

213005 CIP#

nase Design &	Constructio	on Assistance	Contrac	t CS-228	Status C	Status Cancelled				
le Complex Ir	ncineratior	n Heating								
Phase Budget	Wastewate	er		Cost Alloc	ation CTA					
Phase Status	Phase Status Cancelled			Funding Source Bond Proceeds						
Start Date					Fund Construction	Construction Bond Fund				
End Date										
Co	ost Estimatio	on Information	Tot.	Federal Loan Am	ount	\$0				
	5	Cost Est. Class		Program/Allowo	ance Task Inform	nation				
9.	/12/2018	Cost Est. Date	Project Manag	ger						
Contract		Cost Est. Source	CIP Number							
Design Eng		Cost Est. Prepared By	Description							
			J							
		Phase Total Exp	oenses By FY (All fi	gures are in \$1,	000's)					
rior Yr Actual	FY20	FY21 FY22 FY	23 FY24	FY25 FY	26+ Total	5-Yr Total				

#### Phase Task Dates

<b>nase</b> GLWA Ei <b>fle</b> GLWA Sa	. ,	roject mana	agement		Contra	ict NA		Status C	ancelled	
Phase Budge		ter				Cost	Allocation	CTA		
Phase Status	Cancelle	d				Fund	ing Source	Bond Proce	eds	
Start Date	\$						Fund	Constructio	n Bond Fund	
End Date	\$					Useful L	ife >20Yrs?	No		
c	Cost Estimat	ion Informat	ion		Tot	. Federal Lo	an Amount			\$0
	5	Cost E	st. Class			Program/	Allowance	Task Inform	ation	
		Cost E	st. Date		Project Man	ager				
		Cost E	st. Source		CIP Number					
		Cost E	st. Prepare	d By	Description					
			Phone Tete			figures are	in \$1,000'			
rior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
	0	0	0	FTZ3	0 0	0	-			
hase Task Do	ates									

<b>hase</b> Study ar	0					act NA		Status C	ancelled				
			nissioning a	nd Reusab	ility at Waste		ment Plant (						
Phase Budge	t Wastewat	er				Cost	Allocation	CTA					
Phase Status	s Cancellec	1				Func	ling Source	Bond Proce	eds				
Start Date	2		1/8/2021		Fund Construction Bond Fund								
End Date	9		8/29/2023		Useful Life >20Yrs? Yes								
C	Cost Estimati	on Informa	tion		То	t. Federal Lo	an Amount						
	4	Cost	Est. Class			Program/	Allowance T	ask Inform	ation				
	10/2/2017	Cost	Est. Date		Project Man	ager							
	Cost Est. Source					CIP Number							
Ali Khraizat		Cost	Est. Prepare	ed By	Description								
			Phone Tet			figures gro	in \$1,000's)						
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total				
	0	0	0	0		F125		0					
Phase Task Do	ntes												

GLWA Great Lakes Water Authority
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hase Construc	ction				Contro	ict NA			Status	Car	ncelled	
itle Complex	I Incinerate	ors Decomn	nissioning a	nd Reusab	pility at Waste	water Tre	eatm	ent Plant (\	WRRF)			
Phase Budge	t Wastewa	ter				С	ost A	llocation (	CTA			
Phase Statu	s Cancelle	d			Funding Source Bond Proceeds							
Start Date	>		3/7/2022		Fund Construction Bond Fund							
End Date	9		8/29/2023		Useful Life >20Yrs? Yes							
C	Cost Estimat	ion Informa	tion		Tot. Federal Loan Amount							
	4	Cost I	Est. Class			Progra	m/Al	lowance T	ask Infor	mat	ion	
	10/2/2017 Cost Est. Date				Project Man	ager						
Cost Est. Source					CIP Number							
Ali Khraizat Cost Est. Prepared B					Description							
			Phase Toto	al Expense	es By FY (All	figures o	are ir	n \$1,000's)				
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25		FY26+	Total		5-Yr Total	
0	0	0	0	0	0		0	0		0	0	
Phase Task Do	ntes											

GLWA Great Lakes Water Authority		WRRF		WA FY 20 k l Inciner				oning ar	nd Reusa	bility	213005 CIP
Phase Construction				Contro	act CC	N-229		Status	Cancellec	k	
Title WRRF Complex I	Steam heaters	;									
Steam heat replacen	nent was neces	ssary to prot	ect vital a	ssets from fre	eezing.						
Phase Budget Waste	ewater					Cost A	llocation	CTA			
Phase Status Canc	elled					Fundir	ng Source	Bond Pro	ceeds		
Start Date							Fund	Construc	tion Bond I	Fund	
End Date					Us	eful Lif	e >20Yrs?	Yes			
Cost Esti	mation Informa	ition		То	t. Feder	al Loai	n Amount				\$0
	5 Cost	Est. Class		Program/Allowance Task Information							
9/12/20	018 Cost		Project Manager								
Contract	Cost	Est. Source		CIP Number	r [						
Eng	Cost	Est. Prepare	d By	Description							
		Phase Toto	al Expense	es By FY (Al	l figures	are i	n \$1,000's	5)			
Prior Yr Actual FY20	FY21	FY22	FY23	FY24	FY2	5	FY26+	Total	5-Yr T	otal	
0	0 0	0	0	0		0	(	)	0	0	
Phase Task Dates											



### WRRF Complex I Incinerators Decommissioning and Reusability

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	0	0	43	0	0	0	0	0	0	4,409	0	4,452	0
2019	0					161	1,221	2,352	1,171	0	0	4,905	3,734
2018			900	200					0	0	0	1,100	1,100

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP<br/>ChangesA contract was executed to provide necessary heat to complex I in order to protect vital assets from freezing<br/>conditions. The main project is deferred to 2025 and beyond.

Cancelled at Alignment Mtg



WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Innovation	Project Status Future Planned	Sludge Feed Pum	ps								
□ Conceptual WW MP	CIP Type Project										
<ul> <li>Water MP Right Sizing</li> <li>Reliability/Redundand</li> <li>NEWTP Repurposing</li> </ul>											
		Budget	Wastewater								
Project Engineer/Manag	<b>er</b> Ravi Yelamanchi	Class Lvl 1	Wastewater								
Direct	or Dan Alford	Class Lvl 2	WRRF								
Managing De	pt WW Design Eng	Class Lvl 3	Residuals Management								
Date Original Business C	ase Prepared	Location	City of Detroit								
Year Project	Added to CIP 2016	Fund and Cost Center	Wastewater - 5421-892211								
rec Scope of Work / The	drive and Hydraulic drive units for SFP 1 and 2 are located below grade and the area has flooded. A single recycle valve for SFP 3 and 4 puts the plant at a higher risk for system outages. The scope of work includes study, design, and construction for the replacement of sludge feed pumps SFP 1, 2, 3, 4, 5 and 6 and other modifications to the pumping system at the WRRF.										
Other Important Info	allenges: Maintaining Plant Operational C	apacity during construction.									
whi Typ fror Sto De <sup>v</sup> Und	ject History: Water Resource Recovery Fac ich feed sludge to the dewatering facilitie ically, sludge from Storage Tanks 1 & 2 sup m Storage Tanks 3 & 4 supplies the centrifu rage Tanks 5 & 6 supplies the belt filter pre watering Complex II basement allow sludg der Contract PC-792, Storage Tanks SST-3 & Facility.	s (i.e. belt filter presses comp oplies the centrifuges on dew ges on the lower level of Dev sses in Dewatering Complex ge from any storage tanks to	lexes and complex II centrifuges.) vatering complex II upper level; sludge watering Complex II; and sludge from I. However, control valves in the supply any Dewatering area.								
Related Project PC	- 791 and CON -197.										
Primary Driver 2 -	Performance										



WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

PM Weighted
Score
66.4

Criteria	Score	Comment
Public Benefit	3	Moderate savings for GLWA
Regulatory (Environmental/Legal)	4	Not Imminent risk
Efficiency and Innovation	4	Right sizing system will have significant operati
Operations and Maintenance	3	Moderate levels of O&M
Performance (Service Level/Reliability)	4	Expected performance failures under normal
Condition	3	Moderate renewal or rehab needed in short t
Public Health and Safety	3	Likely to address minor hazard issues or conce
Financial	2	Low Financial impact at this time

## **RC Weighted**

## Score

### 69.2

Criteria	Score	Comment
Financial	4	updated
Regulatory (Environmental/Legal)	4	
Performance (Service Level/Reliability)	3	updated
Public Benefit	2	
Efficiency and Innovation	4	
Condition	4	updated
Operations and Maintenance	5	
Public Health and Safety	2	



WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Title Improvements to Sludge Feed Pumps at Dewatering Facilities         Phase Budget Wastewater       Cost Allocation CTA         Phase Status Future Planned Start       Funding Source Bond Proceeds         Start Date       6/7/2021       Fund Construction Bond Fund         End Date       11/9/2022       Useful Life >20Yrs? Yes         Cost Estimation Information       Tot. Federal Loan Amount       Program/Allowance Task Information         10/2/2017       Cost Est. Date       CIP Number       Description         Cost Type       Fiscal Year       Expense       Fringe BenefitNonPersonne       Comment	Phase Construction	on						Contro	act 1	١A			Status F	uture Planned	Start
Phase Status       Future Planned Start       Funding Source       Bond Proceeds         Start Date       6/7/2021       Fund       Construction Bond Fund         End Date       11/9/2022       Useful Life >20Yrs?       Yes         Cost Estimation Information       Tot. Federal Loan Amount       Program/Allowance Task Information         4       Cost Est. Class       Project Manager         10/2/2017       Cost Est. Source       CIP Number         Ali Khraizat       Cost Est. Prepared By       Description	Title Improvemen	nts to Sluc	dge Fe	ed Pump	s at De	ewaterir	ng F	acilities							
Start Date       6/7/2021         End Date       11/9/2022         Cost Estimation Information       Useful Life >20Yrs? Yes         Cost Est. Class       Tot. Federal Loan Amount         10/2/2017       Cost Est. Date         Cost Est. Source       CIP Number         Ali Khraizat       Cost Est. Prepared By	Phase Budget V	Vastewate	er							Cost	Allo	cation C	TA		
End Date       11/9/2022       Useful Life >20Yrs?       Yes         Cost Estimation Information       Tot. Federal Loan Amount       Image: Cost Est. Class         4       Cost Est. Class       Program/Allowance Task Information         10/2/2017       Cost Est. Date       CiP Number         Ali Khraizat       Cost Est. Prepared By       Description	Phase Status F	uture Plar	nned S	itart			Funding Source Bond Proceeds								
Cost Estimation Information       Tot. Federal Loan Amount         4       Cost Est. Class         10/2/2017       Cost Est. Date         Cost Est. Source       Cip Number         Ali Khraizat       Cost Est. Prepared By	Start Date			6/7/	2021			Fund Construction Bond Fund							
Cost Estimation Information       Tot. Federal Loan Amount         4       Cost Est. Class         10/2/2017       Cost Est. Date         Cost Est. Source       CIP Number         Ali Khraizat       Cost Est. Prepared By	End Date			11/9/	2022		Useful Life >20Yrs? Yes								
4       Cost Est. Class       Program/Allowance Task Information         10/2/2017       Cost Est. Date       Project Manager         Cost Est. Source       CIP Number       Description															
10/2/2017       Cost Est. Date       Project Manager         Cost Est. Source       CIP Number         Ali Khraizat       Cost Est. Prepared By	Cos	t Estimatio						10							
Cost Est. Source     CIP Number       Ali Khraizat     Cost Est. Prepared By		4	C	Cost Est. C	lass					-	Allov	wance To	ask Inforn	nation	
Ali Khraizat     Cost Est. Prepared By     Description	10,	/2/2017	C	Cost Est. D	ate		I	Project Man	ager						
			C	Cost Est. So	ource		(	CIP Number	,						
Cost Type Fiscal Year Expense Fringe Benefit NonPersonne Comment	Ali Khraizat	ed By	I	Description											
costrypo riscurrou expense ringe beneficiente continent	Cost Type Fiscal Year Expense Fringe Be							Fringe Ben	efilN	onPerso	onne		Comm	nent	
Construction FY22 \$11 2021CIP			FY22			•									
						•	\$2,970 2021CIP								
Construction FY24 \$478 2021CIP	Construction	Construction FY24										2021 CIP			
Phase Total Expenses By FY (All figures are in \$1,000's)				Phas	se Toto	al Exper	nse	s By FY (All	figu	r <mark>es are</mark>	in \$	1,000's)			
Prior Yr Actual         FY20         FY21         FY22         FY23         FY24         FY25         FY26+         Total         5-Yr Total	Prior Yr Actua f	FY20	FY21	FY	22	FY23		FY24	F	Y25	F	Y26+	Total	5-Yr Total	
0 0 0 11 2,970 478 0 0 3,459 3,459	0	0		0	11	2,9	70	478		C	)	0	3,45	9 3,459	
Phase Task Dates	Phase Task Date	S													
Phase Task Name Start Date End Date Duration	Phase Task Name	e Start D	Date	End Dat	e D	Duration	1								
Procurement 12/15/2021 6/12/2022 179	Procurement	12/15	6/2021	6/12/2	022	17	79								
Project Execution 6/13/2022 12/4/2023 539	Project Execution	6/13	/2022	12/4/2	023	53	39								
Project Closeout 12/5/2023 2/2/2024 59	Project Closeout	12/5	/2023	2/2/2	024	1	59								

GLW Great Lakes Water Aud	<b>A</b> hority	N	WRRF Imp		WA FY 202 ents to Slu				l Dewater	ing Facilitie	213006 CI s	
Phase Study and	Design a	nd Construc	tion Assista	ince	Contra	ct NA	\		Status Fut	ure Planned St	art	
Title Improveme	nts to Slu	dge Feed Pu	imps at De	watering F	acilities							
Phase Budget V	Vastewat	er		Cost Allocation CTA								
Phase Status F	uture Pla	nned Start		Funding Source Bond Proceeds								
Start Date		4	/10/2020					Fund (	Constructior	n Bond Fund		
End Date		11	/29/2022			Us	eful Life	>20Yrs?	(es			
Cos	t Estimati	ion Informati	on		Tot	. Fede	al Loan	Amount				
	4	Cost Es	t. Class			Prog	ram/Al	lowance T	ask Informa	tion		
10	/2/2017	Cost Es	t. Date		Project Man	-	-					
	Cost Est. Source				CIP Number							
Ali Khraizat					Description							
				a by	•							
Cost Type	e	Fiscal Yea	ar Ex	pense	Fringe Ben	əfilNor	Personr	าย	Comme	nt		
Engineering Servio	ces	FY21		\$88	\$88 2021CIP							
Engineering Servio	ces	FY22		\$286				2021 CIP	)			
Engineering Servio	ces	FY23		\$280				2021 CIP	)			
Engineering Servio	ces	FY24		\$166				2021 CIP	)			
		P	hase Tota	l Expense	s By FY (All	figure	s are in	\$1,000's)				
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total		
0	0	88	286	280	166		0	0	820	820		
Phase Task Date	S											
Phase Task Name	e Start [	Date End	Date D	uration								
Pre-Procurement	7/1	/2020 8/1	1/2020	41								
Procurement	8/12	2/2020 3/1	9/2021	219								
Project Execution	3/20	)/2021 2/	2/2024	1049								

ase GLWA Er	nployees F	Project mar	nagemen <sup>.</sup>	ŀ		Contra	ct NA			Status Fut	ure Planned Sto
le GLWA Sal											
Phase Budget	Wastewa	iter						Cost A	Allocation C	CTA	
Phase Status	Future Pla	anned Start						Fundir	ig Source B	ond Proce	eds
Start Date	•								Fund C	Construction	n Bond Fund
End Date							Us	eful Lif	e >20Yrs?	10	
С	ost Estima	tion Informo	ation			Tot	Feder	al Loai	n Amount		(
	5		Est. Class				Prog	ram/A	llowance To	ask Informa	ition
		Cost	Est. Date		Pro	oject Man	-				
			Est. Sourc	<u>م</u>	CI	P Number					
			Est. Prepc	-	De	escription					
		0031	L3I. Hepc	пеа ву							
Cost Ty	vpe	Fiscal Y	ear	Expense	ə F	-ringe Ben	efitNon	Person	ine	Comme	nt
GLWA Salaries (	CIP2021	FY21			\$86				2021 CIP		
SLWA Salaries (	CIP2021	FY22			\$88				2021 CIP		
GLWA Salaries (	CIP2021	FY23			\$121				2021 CIP		
SLWA Salaries (	CIP2021	FY24			\$72				2021 CIP		
			Phase To	otal Expe	enses	By FY (All	figure	s are i	n \$1,000's)		
rior Yr Actua	FY20	FY21	FY22	FY2	23	FY24	FY2	25	FY26+	Total	5-Yr Total
0	0	86	8	8	121	72		0	0	367	367

GLWA Great Lakes Water Authority WRRF In		FY 2021-20 to Sludge		os at Dewo	atering Faciliti	213006 CIP# es		
Phase not applicable		Contract N	A	Status	Closed Out			
Title Prior Year Actual Expenses								
Phase Budget Wastewater			Cost Allocat	tion CTA				
Phase Status Closed Out			Funding Sou	rce				
Start Date			Fu	und				
End Date		U	seful Life >20	(rs? No				
Cost Estimation Information		Tot. Federal Loan Amount						
1 Cost Est. Class		Prog	gram/Allowar	nce Task Info	ormation			
Cost Est. Date	Proje	Project Manager						
Cost Est. Source		CIP Number						
Cost Est. Prepar	ed By Desc	d By Description						
Cost Type Fiscal Year	Expense Frin	ige BenefilNo	nPersonne	Con	nment			
n/a FY19-	\$5		202	21 CIP				
Phase To	tal Expenses By	FY (All figure	es are in \$1,0	00's)				
Prior Yr Actua FY20 FY21 FY22	FY23 F	Y24 FY	25 FY2	6+ Toto	al 5-Yr Total			
5 0 0 0	0	0	0	0	5 0			
Phase Task Dates								



### WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	5	0	174	385	3,371	716	0	0	4,651	4,646
2020	0	0	5	0		0	0	24	1,366	2,331	0	3,726	1,390
2019	0	4			57	275	2,391	1,130		0	0	3,857	3,853
2018		33	402	750					0	0	0	1,185	1,152

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Schedule was delayed by 3 years to accommodate funding for CIP No. 232002.

Changes



WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

<ul> <li>Innovation</li> <li>Conceptual WW N</li> <li>Water MP Right Siz</li> <li>Reliability/Redund</li> <li>NEWTP Repurposin</li> </ul>	ancy Project New To CIP	Picture from left to right Sludge Conveyer G Damaged by Fire and Conveyer B in the Complex – II Dewatering Building and Fire Damaged Conveyer H in Complex- II Incinerators Building	
Project Engineer/Man	•	Budget Wastewate Class Lvl 1 Wastewate	
Managing Date Original Busines	ector Philip Kora Dept WW Construction Eng s Case Prepared 7/27/2016 oct Added to CIP 2016	Class Lvl 2 WRRF Class Lvl 3 Residuals A Location City of Det Fund and Cost Center Wastewate	roit
		of sludge cake conveyance system improvincinerators building. The construction of thi dge feed to the incinerators.	
Project Alternatives		city, which was lost due to the fire damage g facility to the incinerators. Replacement n Incineration Complex II.	
	of these improvements, will be the most sig Project History: The C-II Incineration comply years in anticipation of an alternative Bioso major pieces of equipment that are nearing rehabilitation in order to be used as the pri PC-791 contract to rehabilitate some of the requirements. GLWA just completed the co dry tons per day. The BDF facility is currently	yance capacity to meet permit requirement inificant challenge on this project. ex is over 40 years old. Major rehabilitation olids disposal solution to handle all the solid ing the end of their useful life and require re mary long-term solids disposal method. GL e aging problem of the incineration and to construction of a Biosolids Dryer Facility (BDF) y in operation under an in-term agreement BDF to its capacity first, then send the add	had been deferred over the s. The Complex-II have many placement or major WA approved a PC-774 and meet the new air permit with a firm capacity of 316 t with NEFCO. The current
App B - Page 138			



## WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

	Incinerators and anything beyond that to the land fill. This Biosolids Disposal Plan requires investment in the
	Complex-II Incinerators to process the sludge loads on a regular basis for the daily and wet weather events to
	avoid the highest cost of land fill.
	The sludge from Dewatering Complex II travels through a series of conveyor belts (i.e., conveyors G, H and J)
	before it reaches Incineration Complex II. The sludge from Dewatering Complex II Lower Level was transported by
	Conveyor G to Conveyor H. In Incinerator Complex II, Conveyor H branches to Conveyors K and L then continue
	to various conveyors to feed incinerators. The sludge from Dewatering C-II Upper Level was transported by
	Conveyor J which branches to Conveyors M and N in Incineration C-II then continue to various Conveyors to feed
	incinerators. The conveyor belt structures in Incineration C-II are old, have been modified, rebuilt or repaired
	several times that might have altered the overall integrity of the structures. The existing "Dusseau" hopper
	oftentimes plugged resulting to sludge spillage. The existing feed system to the incinerator from the hoppers
	should be redesigned and replaced. New control systems, safeguards, provision of SFE water, run time meter or
	tie to ovation system and poor lighting system in the complex needs improvement.
	Drainage problems had historically existed within the basement of Complex II Incineration and C-II Dewatering
	having to do with both building drainage, and filtrate drainage. These problems led to excessive demands on
	operations and maintenance staff, shutdown of process-related equipment, and safety concerns for WWTP
	personnel. Improvements to the C-II Incinerators building drainage system were completed in 2003 under
	contract DWP-1028. However, the drainage problems were not completely eliminated and still continue to exist
	and further Improvements to the C-II Dewatering are in design for improvements. In order to have an effective sludge conveyer's wash system, a key requirement for safe operation of sludge conveyance system, the
	drainage improvements in the Complex-II Dewatering and Incinerators building are essential.
Related Project	The change order to Contract PC-791 was issued by GLWA to address the fire emergency and restore the
	operation of C-II Incineration.
Primary Driver	3 - Regulatory
<b>Driver Explanation</b>	The existing sludge conveyance system is very old and is critical to disposal of biosolids to meet permit
-	requirements (e.g. incinerator air permit requirements). The disposal of biosolids to meet allowable permitted

inventory of biosolids at the WRRF, s



PM Weighted Score	
92.4	
	Criteria

Criteria	Score	Comment
Condition	5	Immediate replacement required
Performance (Service Level/Reliability)	5	Causing Significant Capacity Problems
Regulatory (Environmental/Legal)	5	Significant fines for Compliance Failure
Operations and Maintenance	4	Significant Positive impact on O&M
Public Health and Safety	5	Project will have a major & measurable positiv
Public Benefit	4	Significant, noticeable impact on GLWA imag
Financial	4	Project will likely result in avoidance of fines
Efficiency and Innovation	4	Project will remove significant operational hur

# RC Weighted

# Score

### 87.2

Criteria	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	3	



WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Phase Construc	ction Assistc	ince			Contro	act C	S-291		Status Ac	tive		
<b>Title</b> Engineeri	ng services	for the rep	lacement	of MCC's a	nd EB-26							
This contract w	vas reallocc	ated from (	CIP No. 380	601								
Phase Budge	Wastewat	er			Cost Allocation CTA							
Phase Status	Active						Fundir	ng Source	Bond Proce	eds		
Start Date	•							Fund (	Constructior	n Bond Fund		
End Date	•					U	seful Lif	e >20Yrs?	ſes			
C	ost Estimati	on Inform	ation		То	t. Fede	eral Loa	n Amount			\$0	
	5	Cost	Est. Class			Pro	gram/A	llowance T	ask Informa	ition		
	7/31/2019	Cost Est. Date			Project Mar	nager						
Contract		Cost	Est. Source	è	CIP Number							
PMA		Cost	Est. Prepar	ed By	Description							
Cost Ty		Fiscal Y	ear	Expense	Fringe Ber	efitNo	nPerson	ne	Comme	nt		
Engineering Sei	•	FY19-		•	enseFringe BenefitNonPersonneComment\$252021CIP							
Engineering Sei		FY20		\$1C	· · · · · · · · · · · · · · · · · · ·							
Engineering Sei		FY21		•	\$6 2021CIP							
			Phase To	tal Expense	es By FY (Al	l figure	es are i	n \$1,000's)				
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total		
25	10	6	0	0	0		0	0	41	6		
Phase Task Do	ites											
Phase Task Na	me Start [	Date En	d Date	Duration								
Project Execution	on 4/2	2/2018 1	/31/2021	1035								

GLW Great Lakes Water 1	<b>A</b> Luthority		WRRF Mo			A FY 202 to Incine				l Syste	ms a	t Complex	213007 CIF -II
Phase Construct	ion					Contra	ct CC	DN-197		Status	S Act	tive	
Title CON-197 M	Aodificatio	on to Incin	erator Slud	ge Feed	Syste	ms at Com	plex -l						1
Phase Budget	Wastewa	ter						Cost /	Allocation	CTA			
Phase Status	Active				Funding Source Bond Proceeds								
Start Date			2/5/2018						Fund	l Constru	uctior	Bond Fund	
End Date			1/27/2020				Us	eful Lif	e >20Yrs?	Yes			
						Tot			n Amouni				
Сс	ost Estimat	ion Inform				101							
	1	Cost	Est. Class		_		-	ram/A	llowance	Task Inf	forma	tion	
7	/31/2019	Cost	Est. Date			oject Man	ager						
Contract		Cost	Est. Source	2	CIP Number								
РМА		Cost	Est. Prepar	red By	De	escription							
Cost Typ	се	Fiscal Y	(ear	Expense		Fringe Ben	əfilNor	Persor	ne	Со	mmer	nt	
Construction		FY19-		\$8,4	441				2021C	IP			
Construction		FY20		\$8,0					2021C				
Construction		FY21		\$2,0	)94				2021C	:IP			
			Phase To	tal Expe	nses	By FY (All	figure	s are i	n \$1,000'	s)			
Prior Yr Actua	FY20	FY21	FY22	FY23		FY24	FY2	25	FY26+	Tot	al	5-Yr Total	
8,441	8,097	2,094	0		0	0		0		0 18	3,632	2,094	
Phase Task Dat	es												
Phase Task Nam	ne Start I	Date Er	nd Date	Duratior	١								
Project Executio		2/2018	9/1/2020		83								
Project Closeout	9/2	2/2020	1/31/2021	1	51								

GLV Great Lakes Wat	<b>VA</b> ter Authority	,	WRRF Ma		WA FY 202 n to Incine				Systems o	at Complex	213007 CI -II
Phase Study a	nd Design c	and Constru	ction Assis	tance	Contro	i <b>ct</b> C	S-060		Status Ac	tive	
Title Study/De	sign of upg	raded slud	ge convey	ance syster	m and lightir	g impi	roveme	nt			1
CS-060 is fund	ed from this	CIP. Could	l not add i	t to the cho	ice list. Mov	e this p	phase to	213007			
Phase Budge	t Wastewa	ter					Cost A	llocation	CTA		
Phase Statu	s Active						Fundin	ig Source	Bond Proce	eds	
Start Date	e		8/22/2016					Fund	Construction	n Bond Fund	
End Date	9	1	0/31/2018			U	seful Life	e >20Yrs?	Yes		
					Tot	Eada	ralloar	n Amount			
(	Cost Estimat				10						
	5	Cost	Est. Class				gram/A	llowance	Task Informa	ition	
	7/31/2019	Cost	Est. Date		Project Manager						
Contract		Cost	Est. Source	è	CIP Number						
РМА		Cost	Est. Prepar	ed By	Description						
Cost T	уре	Fiscal Ye	ear	Expense	Fringe Ben	efitNor	nPerson	ne	Comme	nt	
Engineering Se	rvices	FY19-		\$655				2021C	P		
Engineering Se	rvices	FY20		\$108				2021C	P		
Engineering Se	rvices	FY21		\$87				2021C	P		
			Phase To	tal Expense	es By FY (All	figure	es are ir	n \$1,000's	3)		
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
655	108	87	0	0	0		0	(	850	87	
Phase Task Do	ates										
Phase Task Nc	ime Start	Date En	d Date	Duration							
Project Execut	on 8/2	2/2016 4	/21/2021	1703							

	<b>GLWA</b> Freat Lakes Water Authority
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213007 CIP#

WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Phase GLWA Er	. ,	roject mar	nagemer	n†		Contro	ict N/	4		Status Ac	tive	
Title GLWA Sal	aries											
Phase Budget	Wastewat	fer						Cost A	llocation	CTA		
Phase Status	Active				Funding Source Bond Proceeds							
Start Date					Fund Construction Bond Fund							
End Date					Useful Life >20Yrs? No							
С	ost Estimati	ion Informo	ation			Tot	l. Fede	ral Loar	n Amount			\$0
	3	Cost	Est. Clas	S			Prog	gram/A	llowance 1	ask Informa	ation	
7	7/31/2019	Cost	Est. Date		Р	roject Man	ager					
		ce	CIP Number									
PMA		Cost	Est. Prep	ared By	ed By Description							
Cost Ty	/pe	Fiscal Y	ear	Expens	е	Fringe Ben	efitNor	nPerson	ne	Comme	ent	
, GLWA Salaries (	•	FY19-		•	\$231	0			2021 CIF	)		
GLWA Salaries (	CIP2021	FY20			\$121				2021 CIF	)		
GLWA Salaries (	CIP2021	FY21			\$71				2021 CIF	)		
			Phase 1	otal Exp	enses	By FY (All	figure	es are in	ר\$1,000's)	)		
Prior Yr Actua	FY20	FY21	FY22	FY2	23	FY24	FY	25	FY26+	Total	5-Yr Total	
231	121	71		0	0	0		0	0	423	71	
Phase Task Da	tes											



WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	9,352	8,336	2,258	0	0	0	0	0	19,946	2,258
2020	0	0	871	7,159	8,711	3,308	0	0	0	0	0	20,049	12,019
2019	0		567	6,787	11,356	3,477				0	0	22,187	21,620
2018		1,500	9,600	7,822					0	0	0	18,922	17,422

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** CS-291 was reallocated from CIP No. 380601.

Changes



## GLWA FY 2021-2025 CIP WRRF Rehabilitation of the Ash Handling Systems

213008 CIP#

<ul> <li>Innovation</li> <li>Conceptual WW N</li> <li>Water MP Right Siz</li> <li>Reliability/Redunct</li> <li>NEWTP Repurposir</li> </ul>	ing ancy Project New To CIP	Ash crusher system was last rehabilitated 15 years ago and near the end of its useful life, due to Complex decommissioning dry ash system needs to be reconfigured and rehabilitated	A
	and Alfrede Lava	-	Wastewater
Project Engineer/Mar	ector Dan Alford	Class Lvl 1	
		Class Lvl 2	
	Dept WW Design Eng	Class Lvl 3	Residuals Management
Date Original Busines	s Case Prepared 7/27/2016	Location (	City of Detroit
Year Proje	ct Added to CIP 2017	Fund and Cost Center	Wastewater - 5421-892211
	The ash systems convey and store ash fo are not working.	or ultimate disposal. The incinerator	rs cannot be used if both the systems
Project Alternatives	The scope of work will include study, des systems. The scope will also include the miscellaneous silo repairs (concrete, acc (foot bridge, spalling concrete, etc.) at sluicing system at the wet ash system.	piping, valves, isolation gates, vac cess, etc.) site work and drainage,	uum pumps, air filters, HVAC, boilers, and miscellaneous structural repairs
-	*Innovation note: Due to only 10-15 yea Recom.	rs remaining useful life on Complex	I, reconsider recommissioning wet ash
	Project History: The C-I and C-II Incinera	tors have been the primary source	for processing Biosolids at the GLWA

Project History: The C-I and C-II Incinerators have been the primary source for processing Biosolids at the GLWA WRF since the plant was first built. The original ash handling system was a wet ash/sluicing process. The dry ash system was constructed in the 1960s and expanded with the construction of the C-II Incinerators in the 1970s. The wet ash system has not been in use for over five years and there is no backup if the dry ash system goes down. The C-I Incinerators are planned to be decommissioned in the next year or two and there is a potential to link the C-I ash handling system to the C-II system to provide extra storage.

Related Project This project should be coordinated with the decommissioning of the C-I Incinerators as well as any planned plant



## WRRF Rehabilitation of the Ash Handling Systems

wide pipe rehabilitation program.

**Primary Driver** 1 - Condition

Driver Explanation The wet ash system has been out of service for over five years and the dry ash system is nearing the end of its useful life.



PM Weighted	
Score	
66	
	Criteria

Criteria	Score	Comment
Condition	4	Asset has <25% of its design service life remain
Performance (Service Level/Reliability)	4	Expected performance failures under normal
Regulatory (Environmental/Legal)	3	Moderate risk of causing regulatory violation
Operations and Maintenance	4	Significant Positive impact on O&M
Public Health and Safety	3	Likely to address minor hazard issues or conce
Public Benefit	2	Additional Savings in O&M
Financial	3	Project will generate significant savings
Efficiency and Innovation	3	Project will have a moderate impact on energ

## **RC Weighted**

## Score

## 57.8

Criteria	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	1	
Financial	3	
Efficiency and Innovation	1	



WRRF Rehabilitation of the Ash Handling Systems

213008 CIP#

<b>Phase</b> GLWA Er <b>Iitle</b> GLWA Sa	. ,	roject mar	nagement		Contro	ict NA			<b>Status</b> Fu	iture Planned S	itart	
Phase Budge	t Wastewa	ter				Co	st Alloc	ation C	TA			
Phase Status	s Future Pla	nned Start			Funding Source Bond Proceeds							
Start Date	2				Fund Construction Bond Fund							
End Date	>					Useful	Life >2	0Yrs? N	lo			
C	Cost Estimat	ion Informo	ation		Tot. Federal Loan Amount\$0							
	5	Cost	Est. Class			Program	n/Allow	ance To	ask Informe	ation		
	10/1/2017	Cost	Est. Date		Project Man	ager						
		Cost	Est. Source	•	CIP Number							
Ali Khraizat		Cost	Est. Prepar	ed By	Description							
Cost Ty	ype	Fiscal Y	ear	Expense	pense Fringe BenefilNonPersonne					ent		
GLWA Salaries	CIP2021	FY20		\$86			2	021CIP				
GLWA Salaries	CIP2021	FY21		\$86			2	021CIP				
GLWA Salaries	CIP2021	FY22		\$94			2	021CIP				
GLWA Salaries	CIP2021	FY23		\$121			2	021CIP				
GLWA Salaries	CIP2021	FY24		\$116			2	021CIP				
			Phase To	tal Expense	s By FY (All	figures ar	<b>e in \$</b> 1,	,000's)				
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY	26+	Total	5-Yr Total		

Phase Task Dates



WRRF Rehabilitation of the Ash Handling Systems

Phase Design & C	onstructi	on Assis	stance			Contro	act TBD			<b>Status</b> Fu	ture Planned S	tart
Title Rehabilitatio	n of the	Ash Har	ndling Syst	tems								
Phase Budget W	astewat	er					С	ost Al	location C	TA		
Phase Status Fu	iture Plai	nned St	art		Funding Source Bond Proceeds							
Start Date					Fund Construction Bond Fund							
End Date					Useful Life >20Yrs? Yes							
Cost	Estimati	on Infor	mation		Tot. Federal Loan Amount							
	4	C	ost Est. Clo	155			Progra	m/All	owance Ta	isk Inform	ation	
9/1	2/2018	C	ost Est. Da	te	F	Project Man	ager					
		Co	ost Est. Sou	Jrce	CIP Number							
Ali Khraizat	pared By	ſ	Description									
Cost Type	;	Fisco	al Year	Expens	е	Fringe Ber	efilNonPe	ersonn	е	Comme	ent	
Engineering Servic	es	FY21		\$1	1,252				2021 CIP			
Engineering Servic	es	FY22			\$355		2021C					
Engineering Servic	es	FY23			\$180				2021 CIP			
Engineering Servic	es	FY24			\$173				2021 CIP			
			Phase	e Total Exp	ense	s By FY (All	figures o	are in	\$1,000's)			
Prior Yr Actual F	Y20	FY21	FY2	2 FY2	23	FY24	FY25		FY26+	Total	5-Yr Total	
0	0	1,23	52	355	180	173		0	0	1,960	1,960	
Phase Task Date:	5											
Phase Task Name	Start D	Date	End Date	Duratio	on							
Procurement	ocurement 4/17/2020 10/13/2020											
Project Execution	10/11/	/2020	6/16/202	24	1341							



WRRF Rehabilitation of the Ash Handling Systems

<b>Phase</b> Study <b>Title</b> Rehabilitatio	on of the As	sh Handlina	Systems		Contro	act NA	Λ		Status F	uture Planned S	itart		
Phase Budget W							Cost A	llocation	CTA				
Phase Status Fu	uture Plann	ned Start					Fundin	g Source	Bond Proceeds				
Start Date		11,	/8/2019			on Bond Fund							
End Date		12/	4/2014		Useful Life >20Yrs? Yes								
Cost	t Estimatior	n Informatio	n		Tot. Federal Loan Amount								
	5	Cost Est	Class			Prog	jram/A	llowance T	ask Inforn	nation			
9/1	2/2018	Cost Est	Date		Project Man	ager							
		Cost Est	Source	(	CIP Number								
Ali Khraizat		Cost Est	Prepare	d By	Description								
Cost Type	9	Fiscal Year	E>	xpense	Fringe Ber	efilNor	Person	ne	Comm	nent			
Engineering Servic	ces F	Y20		\$80				2021 CIF	)				
		Ph	ase Toto	al Expense	s By FY (Al	figure	s are iı	n \$1,000's)	)				
Prior Yr Actual F	Y20	FY21	FY22	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total			
0	80	0	0	0	0		0	0	8	0			
Phase Task Dates	S												
Phase Task Name	e Start Da	ite End D	ate D	Duration									
Procurement	3/31/2	2019 10/15	/2019	198									
Project Execution	10/16/2	2019 4/16	/2020	183									



WRRF Rehabilitation of the Ash Handling Systems

Phase Construct	ion				Contro	act N	IA		Status F	uture Planned S	tart	
Title Rehabilitat	ion of the Ash	Handling S	ystems									
Phase Budget	Wastewater						Cost A	llocation C	CTA			
Phase Status	Future Planne	d Start				ceeds						
Start Date		12/30	)/2021		Fund Construction Bond Fund							
End Date		12/14	1/2024		Useful Life >20Yrs? Yes							
Co	ost Estimation	nformation			Tot. Federal Loan Amount							
	4	Cost Est.	Class		Program/Allowance Task Information							
1	0/2/2017	1	Project Mar	nager								
	Cost Est. Source					r						
Ali Khraizat	y I	Description										
Cost Typ	be l	iscal Year	Expe	ense	Fringe Ber	nefilNo	nPerson	ine	Comm	nent		
Construction	FY	22		\$187	5187 2021CIP							
Construction	FY			\$10,760								
Construction	FY	24		\$5,053				2021 CIP				
		Pho	ise Total E	xpense	s By FY (Al	l figure	es are iı	n \$1,000's)				
Prior Yr Actual				-Y23 10,760	FY24	F١	Y25	FY26+	Total	5-Yr Total		
0					5,053		0	0	16,00	16,000		
Phase Task Dat	es											
Phase Task Nam	ne Start Date	e End Do	ate Durc	ation								
Procurement	10/14/20			179								
Project Execution				736								
Project Closeout	4/18/20	24 6/16/	2024	59								



#### WRRF Rehabilitation of the Ash Handling Systems

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	166	1,338	636	11,061	5,342	0	0	18,543	18,377
2020	0	0		0	111	1,111	5,525	9,574	2,184	0	0	18,505	18,505
2019	0				687	916	3,614	6,069	9,330	0	0	20,616	11,286
2018			530	1,045	6,225	5,725	4,791		0	0	0	18,316	18,316

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Study phase was added on its own to evaluate options prior to design. The schedule was delayed by 1 FY.

Changes



WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

#### Innovation

Conceptual WW MP

- □ Water MP Right Sizing
- ✓ Reliability/Redundancy
- □ NEWTP Repurposing

Project Status Active

CIP Type Project

□ Project New To CIP

Project Engineer/Manager Beena Chackunkal Director Dan Alford Managing Dept WW Design Eng

Date Original Business Case Prepared 10/12/2016

Year Project Added to CIP 2014

Old IWC and Analytical Lab; new one will be built at the location of the WRRF because of Gordie Howe International Bridge Project



214001 CIP#

Budget	Wastewater
Class Lvl 1	Wastewater
Class Lvl 2	WRRF
Class Lvl 3	Industrial Waste Control
Location	City of Detroit
Fund and Cost Center	Wastewater - 5421-892211

Problem Statement Laboratory Optimization, Continued operation of IWC and Lab, lease termination for analytical laboratory, and utilization of available space in WRRF NAB

Scope of Work / Relocate Industrial Waste Control Division and Analytical Lab to New Administration Building at WRRF. Consolidate Project Alternatives the existing Operations Lab with Analytical Lab.

Other Important Info Challenges: Maintaining the laboratory operations during relocation.

Project History: In accordance with the NPDES Permit, GLWA implements and enforces an Industrial Pretreatment Program (IPP), and regulates the discharge of wastewater from commercial and industrial sources throughout the service area. A key component of the IPP includes the performance of analytical testing on wastewater samples collected from industrial and commercial sources, in-system samples from the sewer system and other sources including groundwater and septage.

The Industrial Waste Control Division (IWC) is responsible for implementation of the IPP, and analytical services are obtained from the Analytical Laboratory located at the MCHT facility. IWC activities are housed at the Livernois Center Building (LCB) located at 303 S. Livernois, while the Analytical Laboratory leases space at the MCHT on Second Avenue.

The State of Michigan Department of Transportation and the Govt. of Canada have proposed to construct a new bridge crossing across the Detroit River, with a completion date of 2020. The Livernois Center Building lies within the area designated for the Bridge and support services and need to be relocated. It would be desirable to relocate the laboratory facilities at the same time to optimize the operations and make use of underutilized



WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

GLWA facilities rather than lease space from a 3rd party.

#### Related Project none

**Primary Driver** 3 - Regulatory

Driver Explanation Length and reorganization is yet established.



PM Weighted Score			
71.6			
	Criteria	Score	
		_	

Criteria	Score	Comment
Condition	3	Immediate replacement required
Performance (Service Level/Reliability)	4	Likelyhood of serious inconveniencies and bus
Regulatory (Environmental/Legal)	5	Project is part of a mandated or otherwise ent
Operations and Maintenance	2	Major,measurable positive impact on O&M
Public Health and Safety	3	Cancelling project will continue posing signific
Public Benefit	3	Supports neighborhood growth
Financial	3	securing of grants/external funds will cover pre
Efficiency and Innovation	5	Substantial operational efficiencies

## **RC Weighted**

## Score

#### 62.2

Criteria	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	2	
Public Health and Safety	2	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	5	

GLW Great Lakes Water	Authority	/RRF Re	locatio	on of Ir		LWA FY 20 al Waste C				Analytica	al Laboratoi	214001 CIP# Ty Operations
Phase Design & Title General E				ian of C	ON-280	<b>Contr</b> and Analytic	act CS-2		١	Status Ac	tive	
Phase Budget			5101 003	ign of c	011 200		,	0	llocation			
Phase Status										Bond Proce	ods	
Start Date								Jinain	-		n Bond Fund	
End Date							Use	UI LII	e >20Yrs?	Yes		
C	ost Estima	tion Infor	mation			Тс	t. Federa	Loar	n Amount			\$0
	1	Co	ost Est. C	lass			Progro	ım/A	llowance	Task Informo	ation	
9	2/12/2018	Co	ost Est. D	ate		Project Mar	nager					
Contract		Co	ost Est. S	ource		CIP Numbe	r					
		Co	ost Est. P	epared	Ву	Description						
Cost Ty	pe	Fisca	ll Year	Exp	ense	Fringe Ber	nefilNonPe	erson	ne	Comme	ent	
Engineering Ser	vices	FY19-			\$716	, )			2021CI	Р		
			Pha	e Total	Expens	es By FY (Al	l figures o	are ir	ר \$1 <i>,</i> 000's	;)		
Prior Yr Actua	FY20	FY21	FY	22	FY23	FY24	FY25		FY26+	Total	5-Yr Total	
716	0		0	0	С	0		0	(	716	0	
Phase Task Da	tes											
Phase Task Nar	ne Start	Date	End Dat	e Du	ration							
Project Execution	on 10/1	2/2016	5/22/2	021	1683							

	GLWA Great Lakes Water Authority	GLWA FY 2021-2025 CIP	214001 CIP#
	Great Lakes Water Authority	WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory	<b>Operations</b>

Phase not appl	icable				Contro	act NA	٩		Status C	losed Out		
Title Prior Year	Actual Ex	penses										
Phase Budget	Wastewa	ater					Cost A	Allocation C	CTA			
Phase Status	Closed C	Dut										
Start Date												
End Date						U	seful Lif	e >20Yrs? N	10			
С	ost Estima	tion Informo	ition		То	t. Fede	ral Loa	n Amount				
	1	Cost	Est. Class		Program/Allowance Task Information							
		Cost	Est. Date		Project Manager							
		Cost	Est. Source		CIP Number							
		Cost	Est. Prepare	ed By	Description							
Cost Ty	pe	Fiscal Ye	ear I	Expense	Fringe Ber	efitNor	Person	ine	Comme	ent		
n/a		FY19-		\$182				2021 CIP				
			Phase Tot	al Expense	es By FY (All	figure	s are i	n \$1,000's)				
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total		
182	0	0	0	0	0		0	0	182	0		

## Phase Task Dates

Great Lakes Water Author	ity WR	<b>RF Relo</b>	cation	of Indu	strial	Waste Co	ontro	ol Divisi	on and	Analy	ical	Laboratory	y Ope
hase Constructior	١					Contra	ct C	ON-280		Status	Clos	sed Out	
tle Relocation of	Industric	al Waste (	Control [	Division									
Phase Budget Wo	astewate	er						Cost A	llocation	IWC			
Phase Status Cla	osed Out	t						Funding	g Source	Bond Pro	cee	ds	
Start Date									Fund	Construc	ction	Bond Fund	
End Date							U	lseful Life	e >20Yrs?	Yes			
Cost	Estimatio	on Inform	ation			Tot	Fede	eral Loan	Amount				
	1		Est. Clas	is			Pro	aram/Al	lowance	Task Info	rmat	ion	
9/12	2/2018	Cost	Est. Date	2	F	Project Man							
Contract		Cost	Est. Soui	ce	(	CIP Number							
Engineer				ared By	[	Description							
Cost Type		Fiscal Y	ear	Expense	Э	Fringe Ben	efitNo	nPersonr	ne	Com	imen	t	
Construction		FY19-		\$1	,327				2021CI	IP			
			Phase	Total Exp	ense	s By FY (All	figure	es are in	\$1,000's	5)			
Prior Yr Actual FY	′20	FY21	FY22	FY2	3	FY24	FY	25	FY26+	Tota	I	5-Yr Total	
1,327	0	0		0	0	0		0	(	) 1,:	327	0	
Phase Task Dates													
Phase Task Name	Start De	ate En	d Date	Duratio	n								
Project Execution	6/25/	2018 2	2/28/2019	7	248								
Project Closeout	3/1/	2019 4	/21/2019	9	51								

Great Lakes Water A	W	RRF Relo	cation of		LWA FY 202 al Waste C			on and A	Analytica	Il Laboratory	214001 CIP# Operations
Phase GLWA Em	. ,	Project mar	agement		Contro	ct NA			Status Ac	tive	
Title GLWA Salc	iries										
Phase Budget	Wastewa	ter				(	Cost All	ocation C	TA		
Phase Status	Active					F	unding	Source B	ond Procee	eds	
Start Date								Fund C	Construction	n Bond Fund	
End Date						Use	eful Life	>20Yrs? N	0		
				_	Tol	Federa	lloan	Amount			\$0
Co	ost Estimat	ion Informo	ition		101	. Tedeld		Amooni			ΦΟ
	5	Cost	Est. Class			Progr	am/Allo	owance To	ask Informa	tion	
		Cost	Est. Date		Project Man	ager					
		Cost	Est. Source		<b>CIP Number</b>						
		Cost	Est. Prepar	ed By	Description						
			· ·	,							
Cost Typ	ре	Fiscal Y	ear l	Expense	Fringe Ben	efilNonP	ersonn	Э	Comme	nt	
GLWA Salaries C	IP2021	FY19-		\$76	)			2021 CIP			
GLWA Salaries C	IP2021	FY20		\$93	}			2021 CIP			
GLWA Salaries C	IP2021	FY21		\$108	}			2021 CIP			
			Phase To	al Expens	es By FY (All	figures	are in	\$1,000's)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	5	FY26+	Total	5-Yr Total	
76	93	108	0	C	0		0	0	277	108	

### Phase Task Dates

GLWA Great Lakes Water Authority WRRF Reloce	GLWA FY 2021-2025 CIP ation of Industrial Waste Control Division and	l Analy	tical Lab	214001 CIP# Operations
Phase Construction	Contract NA	Status	Active	
Title Relocation of Analytical Lab				
Phase Budget Wastewater	Cost Allocation	CTA		

Phase Budget	Wastewat	ter						Cost A	llocation	CTA		
Phase Status	Active							Fundir	ng Source	Bond Proce	eds	
Start Date									Fund	Construction Bond Fund		
End Date					Useful Life >20Yrs? Yes							
Co	ost Estimati	ion Inform	nation			То	t. Fed	leral Loai	n Amount			\$0
	3	Cos	st Est. Clas	S								
9	9/12/2018 Cost Est. Date					Project Man	ager					
Eng Est.	Cost Est. Source					CIP Number	-					
Ali Khraizat	Cost Est. Prepar				d By Description							
Cost Typ	се	Fiscal `	Year	Expens	Expense Fringe BenefilNonPersonne						nt	
Construction		FY20		\$10	\$10,276 2021CIP					Р		
Construction		FY21		\$1	\$1,223 2021CIP					Р		
			Phase	<b>Total Exp</b>	ense	es By FY (Al	figu	res are i	n \$1,000's	)		
Prior Yr Actua	FY20	FY21	FY22	FY2	23	FY24	F	Y25	FY26+	Total	5-Yr Total	
0	10,276	1,223	3	0	0	0		0	С	11,499	1,223	
Phase Task Dat	es											
Phase Task Nam	ne Start [	Date E	nd Date	Duratio	on							
Project Execution					365							
Project Closeout	9/24	4/2020	5/21/202		239							



# GLWA FY 2021-2025 CIP 214001 CIP#

# WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	2,301	10,369	1,331	0	0	0	0	0	14,001	1,331
2020	0	0	573	2,828	7,567	0	0	0	0	0	0	10,968	7,567
2019	0	182		4,001	7,764	1,000				0	0	12,947	12,765
2018			5,000	2,000					0	0	0	7,000	7,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP<br/>ChangesReallocated engineering services from CIP No. 380901 (contact was moved from as-needed to appropriate<br/>CIP). Separated IWC and Lab construction phases due to GHIB project schedule.



## GLWA FY 2021-2025 CIP Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

✓ Innovation	Project Status Active	The RAS-3 samplir station in the baseme					
Conceptual WW MP	CIP Iype Project	of Intermediate L	ift				
Water MP Right Sizing		Pump No. 2 (ILP No.					
Reliability/Redundar	ncy <b>Project New To CIP</b>	Building samples th return activated sludg					
□ NEWTP Repurposing		flows to Aeration Dec	ck				
		No	5.4				
		Budget	Wastewater				
Project Engineer/Manaç	ger Beena Chackunkal	Class Lvl 1	Wastewater				
	tor Dan Alford	Class Lvl 2	WRRF				
00	ept WW Design Eng	Class LvI 3	General Purpose				
•	Case Prepared 8/1/2016	Location	City of Detroit				
Year Project	Added to CIP 2010	Fund and Cost Center Wastewater - 5421-892211					
	he scope of work includes:	npiy with the Fermir.					
	mpling. This will help to submit an accu prove the phosphorous removal to cor						
Project Alternatives Re	placement of existing sampling equipr	•	mps, piping, housing and support				
	juipment such as I&C, HVAC, etc. at th e scope also include:	e various sampling sites.					
	placement of existing two steel Ferric (	Chloride tanks at PS#2 with four (	4) smaller tanks.				
	ovide new piping layout, gravity feed,						
	habilitate Ferric Chloride Unloading sto ovide Flow meters and new control stro						
	e CIP is for construction only.						
•		ernative online/real-time samplir	ng & analysis, as well as improved mixing				
	the ferric with primary influent.	"Pohabilitation of Crit and Sore	eening System at PS-2 and Rehabilitation				
	Sampling Sites at WWTP" included two						
Sa	mpling Stations. That construction budg	get for CIP-1223 amount \$11 M w	vas set aside in CIP. The design for Grit &				
SC App B - Page 163	reening System and Sampling Station v	vere complete under As Needeo	d Engineering Services Contract, CS-1481				



## GLWA FY 2021-2025 CIP 216004 CIP# Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

	Task 18. The construction for "Rehabilitation of Sampling Sites" will move forward and be bid out separately for construction without Grit & Bar Screening System. The Bar Rack System and Grit System designed under As Needed Engineering Services Contact CS-1481, Task 18 will not proceed for construction as designed. An engineering decision to have a fresh look and start a new study, design and construction project through CIP-1314 will proceed. The proposed CIP budget is for construction cost only. The original budget for CIP-1223 was \$11M and has been reduced to \$5M. The remaining \$6M budget has been transferred to CIP-1314 to complete study, design and construction of Grit and Screening System at PS#2.
	Challenges: Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.
	Project History: The Sampling sites are located at Oakwood, MPI-2, NEIA, PEAS1, 3 & 4, ML1 thru 4, and RAS1 thru 4, C2SE 3& 4. Sampling is performed to monitor permit compliance and process performance. Samples are also collected and analyzed on composite samples. The above sampling stations are required to be rehabilitated or replaced for meeting the permit sampling requirements. These sampling stations regularly fails to collect samples due to the clogging problem in the sample line. Replacement of existing sampling equipment, installing new samplers, pumps, HVAC, etc. were also proposed through Need Assessment 2010 – 2016 for these sampling stations. The WRRF sampling station rehabilitation design is completed under an As Needed Engineering Services. The WRRF PS# 2 Ferric Chloride rehabilitation design is completed under another As Needed Engineering Services Contact. These two projects are combined together for construction under the revised CIP #1223 in the 2018 CIP.
-	CIP 211008 also concerns Ferric Chloride system. PC-757: Rehabilitation of Primary Clarifiers, Drain Lines, Hot Water, and Scum Lines, PC 789 – Pump Station No. 1 Rack and Grit Building, MPI and JSS Improvements, PC 795 – Pump Station No. 2 Improvements.
Primary Driver	2 - Performance
•	Plant operations report on the failure of shear pins and accelerated wearing and tearing of the bar racks causing downtime for the maintenance and violation of the permit.



PM Weighted Score		
82.2		
Criteria	Score	Comment
Condition	5	Excessive Maintenance levels for the equipme
Performance (Service Level/Reliability)	5	Equipment obsolete/extremely difficult to mai
Regulatory (Environmental/Legal)	5	Compliance Failure will lead to significant fine
Operations and Maintenance	4	High levels of O&M
Public Health and Safety	3	Moderate positive impact on public H&S
Public Benefit	3	Moderate savings for GLWA
Financial	4	Project will likely result in avoidance of fines
Efficiency and Innovation	3	Process efficiency for a more robust system ar

## RC Weighted

# Score

## 82.2

Criteria	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	3	
n		

G	LWA
Great I	Lakes Water Authority

## Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

Phase Construction Assis	tance			Contrac	t CS	-301	:	Status Ac	tive			
Title Engineering Service	es for the Rehab	of Various Sc	ampling	g Stations								
Phase Budget Wastew	ater					Cost All	ocation C	TA				
Phase Status Active			Funding Source Bond						eds			
Start Date			Fund Construction Bond Fund						n Bond Fund			
End Date			Useful Life >20Yrs? Yes									
Cost Estime	ation Information		Tot. Federal Loan Amount							\$0		
1	Cost Est. (	Class			Prog	ram/Allo	owance Ta	ısk Informa	tion			
9/12/2018	P/12/2018 Cost Est. Date			roject Mana	ger							
Contract	Contract Cost Est. Source					CIP Number						
Eng	Prepared By	ed By Description										
Cost Type	Fiscal Year	Expen	Expense Fringe BenefilNo									
Engineering Services	FY19-		\$23			2021 CIP						
Engineering Services	FY20		\$62				2021 CIP					
Engineering Services	FY21		\$62				2021 CIP					
Engineering Services	FY22		\$7				2021 CIP					
	Phc	ise Total Exp	oenses	By FY (All f	igure	s are in	\$1,000's)					
Prior Yr Actual FY20	FY21 F	Y22 FY	23	FY24	FY2	25	FY26+	Total	5-Yr Total			
23 62	62	7	0	0		0	0	154	69			
Dhace Task Dates												
Phase Task Dates			Phase Task Name Start Date End Date Duration									
	Date End Do	ate Durat	ion									

	Great Lakes Water.	Authority	GLWA FY 2021-2025 CIP Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System c									
Phase	not appli	cable				Contro	act NA	Ą		Status Clo	osed Out	
Title	Prior Year	Actual Expe	enses									
Pho	ase Budget	Wastewate	er					Cost A	llocation (	CTA		
Ph	nase Status	Closed Ou	t		Funding Source							
	Start Date				Fund							
	End Date		Useful Life >20Yrs? No									
	Co	ost Estimatio	on Informati	ion	Tot. Federal Loan Amount							
		1	Cost E	st. Class			Prog	gram/Al	llowance T	ask Informa	ition	
			Cost E	st. Date	Project Manager							
			Cost E	st. Source	CIP Number							
			Cost E	st. Prepare	ed By	Description						
	Cost Ty	ре	Fiscal Ye	ar E	xpense	Fringe Ber	nefilNor	Person	ne	Comme	nt	
n/a			FY19-		\$435				2021 CIP	,		
	Phase Total Expenses By FY (All figures are in \$1,000's)											
Prior `	Yr Actual	FY20	FY21	FY22	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total	
	435	0	0	0	0	0		0	0	435	0	

### Phase Task Dates

GLA Great Lakes Wo	GLWA FY 2021-2025 CIP 2160 Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WR											
Phase Constru	iction				Contract NA					ure Planned S	tart	
Title Rehabilit	ation of Var	ious Sampl	ing Sites an	d PS#2 Ferri	c Chloride S	System	at WRR	?F				
Phase Budge	et Wastewa		Cost Allocation CTA									
Phase Statu	s Future Pla				Fundin	g Source	Bond Proce	əds				
Start Dat	e		4/2/2018					Fund	Constructior	n Bond Fund		
End Dat	e		9/24/2019			U	seful Life	e >20Yrs?	Yes			
	Cost Estimat	ion Informo	ation		То	t. Fede	ral Loar	n Amount				
	3	Cost	Est. Class			Prog	gram/A	llowance	Task Informa	tion		
	10/2/2017	Cost	Est. Date	F	Project Manager							
		Cost	Est. Source	(	CIP Number							
Ali Khraizat		Cost	Est. Prepare	ed By	Description							
Cost	Гуре	Fiscal Y	ear E		nse Fringe BenefilNonPersonne Comment							
Construction		FY19-		\$271				2021 CII	כ			
Construction		FY20		\$3,290				2021 CII				
Construction		FY21		\$1,097				2021CI				
Construction		FY22		\$98				2021CII				
			Phase Tot	al Expense	s By FY (All	figure	s are ir	n \$1,000's	)			
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total		
271	3,290	1,097	98	0	0		0	0	4,756	1,195		
Phase Task D	ates											
Phase Task No	ame Start [	Date En	d Date	Duration								
Project Execut			/21/2021	734								
Project Closec	out 2/22	2/2021 8	/10/2021	169								

GLWA FY 2021-2025 CIP 2160 Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WR											
Phase Construction Assistar	ice			Contra	ct CS	5-292		Status Act	tive		
Title Engineering Services f	or the Rehab o	f Ferric PS N	0.2								
Phase Budget Wastewate	er					Cost A	llocation C	TA			
Phase Status Active						Funding	g Source B	ond Procee	eds		
Start Date							Fund C	Construction	n Bond Fund		
End Date	End Date Useful Life >20Yrs? Yes										
Cost Estimation Information \$0											
Cost Estimatio			101.						\$0		
1	lass				gram/Al	lowance To	ask Informa	tion			
9/12/2018 Cost Est. Date			Project Manager								
Contract	Contract Cost Est. Source				CIP Number						
Eng	Cost Est. Pr	epared By	[	Description							
Cost Type	Fiscal Year	Expens	Expense Fringe BenefitNonPersonne Comment					nt			
Engineering Services	FY19-		\$60			2021 CIP					
Engineering Services	FY20		\$45				2021 CIP				
Engineering Services	FY21		\$45				2021 CIP				
Engineering Services	FY22		\$5				2021CIP				
	Phas	e Total Exp	oense	s By FY (All	figure	s are in	\$1,000's)				
Prior Yr Actual FY20	FY21 FY	22 FY	23	FY24	FY	25	FY26+	Total	5-Yr Total		
60 45	45	5	0	0		0	0	155	50		
Phase Task Dates											
Phase Task Name Start Do	ate End Dat	e Durati	on								
Project Execution 1/1/	2017 8/10/20	021	1682								

GLWA FY 2021-2025 CIP 21600 Creat Lakes Water Authority Creat Lakes Water Authority C										
Phase GLWA Employees Project manageme	ent	Contract NA	\$	Status Act	ive					
Title GLWA Salaries										
Phase Budget Wastewater		Cost A	Allocation C	TA						
Phase Status Active		Fundin	n <mark>g Source</mark> Bo	ond Procee	eds					
Start Date			Fund C	onstruction	Bond Fund					
End Date		Useful Life	e >20Yrs? No	0						
Cost Estimation Information		Tot. Federal Loar	n Amount			\$0				
5 Cost Est. Cla	SS	Program/Allowance Task Information								
Cost Est. Dat	e Projec	Project Manager								
Cost Est. Sou	rce CIP N	CIP Number								
Cost Est. Pre		ed By Description								
	ourcu by	•								
Cost Type Fiscal Year	Expense Fring	ge BenefilNonPerson	ine	Commer	nt					
GLWA Salaries CIP2021 FY19-	\$26		2021 CIP							
GLWA Salaries CIP2021 FY20	\$96		2021 CIP							
GLWA Salaries CIP2021 FY21	\$96		2021 CIP							
GLWA Salaries CIP2021 FY22	\$11		2021 CIP							
Phase Total Expenses By FY (All figures are in \$1,000's)										
Prior Yr Actual FY20 FY21 FY22	PY23 FY	/24 FY25	FY26+	Total	5-Yr Total					
26 96 96	11 0	0 0	0	229	107					
Phase Task Dates										



216004 CIP#

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	815	3,493	1,300	121	0	0	0	0	5,729	1,421
2020	0	0	439	609	3,921	607	0	0	0	0	0	5,576	4,528
2019	0	312	40	551	3,957	565				0	0	5,425	5,073
2018			2,500	2,500					0	0	0	5,000	5,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP Reallocated as-needed contracts from CIP No. 380901 (Sigma-Sampling Sta.) and CIP No. 380501 (Metco-Changes Ferric).



Assessment and Rehabilitation of WRRF yard piping and underground utilities

☑ Innovation	Project Status Active	GLWA WR	RRF						
Conceptual WW MP	CIP Type Project								
<ul> <li>Water MP Right Sizing</li> <li>Reliability/Redundar</li> <li>NEWTP Repurposing</li> </ul>									
		Budget	Wastewater						
Project Engineer/Manag	ger Charles Reinhart	Class Lvl 1	Wastewater						
Direc	tor Dan Alford	Class Lvl 2	WRRF						
Managing De	ept WW Design Eng	Class Lvl 3	General Purpose						
Date Original Business C	Case Prepared 7/27/2016	Location	City of Detroit						
Year Project	Added to CIP 2017	Fund and Cost Center	Wastewater - 5421-892211						
Scope of Work / Thi Project Alternatives un an dis	the yard piping is original to the plant and re is project will include the study, design, and o inderground utilities. This includes right sizing, o and underground utilities. It is possible that the stribution models for the water systems will als so be evaluated.	construction for the neede as-built confirmation and c secondary water system r	d improvements to yard piping and condition assessment of our yard piping may need to be relocated. The						
Other Important Info	eliable utility is a critical aspect of O&M for the	e facility and to avoid out	ages.						
Project History: Some of the pipe lines at the WRRF have been inexistence since the plant was built and have been found on record dating back to 1938. As the plant has grown, so have the systems. In general, the majority of the changes to the multiple systems occurred when the specific buildings or components to the plant were built or renovated. Therefore, an evaluation and necessary replacement of these pipelines are needed to make sure the integrity of these pipelines.									
Challenges: Maintaining the adequate supply of our water systems required for treatment processes during assessment and rehabilitation of underground utilities will be the most significant challenge on this project. Temporary power, air, water, natural gas system shutdowns may also be required to perform the work.									



#### Assessment and Rehabilitation of WRRF yard piping and underground utilities

**Related Project** There are currently no other specific projects for underground utilities, however many other projects require continuous service from these utilities and the ability to consistently supply the required quantities will need to be coordinated with these projects during construction of the improvements.

**Primary Driver** 1 - Condition

**Driver Explanation** Some of the underground utilities are original to the plant and are critical to the plant treatment processes (e.g. incinerator air permit requirements).



## PM Weighted

Score

80.8

Criteria	Score	Comment
Condition	5	Asset has exceeded its design service levels
Performance (Service Level/Reliability)	4	Expected performance failures under normal
Regulatory (Environmental/Legal)	4	Regulatory Compliance failure will lead to fine
Operations and Maintenance	4	Project will have significant impact on O&M
Public Health and Safety	4	Likely to address significant hazard issues or co
Public Benefit	3	Moderate additional savings
Financial	4	Project will likely result in avoidance of emerge
Efficiency and Innovation	4	Right sizing system will have significant operati

## **RC Weighted**

Score

#### 76.4

Criteria	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	



## Assessment and Rehabilitation of WRRF yard piping and underground utilities

	GLWA Employees Project management				Contra	ct NA		Status Fut	ture Planned S	tart
<b>Fitle</b> GLWA Sa	laries									
Phase Budge	t Wastewat	er			Cost Allocation CTA					
Phase Statu	s Future Pla	nned Start				Fundir	ng Source B	ond Proce	eds	
Start Date	9						Fund C	Construction	n Bond Fund	
End Date	9					Useful Lif	e >20Yrs?	10		
C	Cost Estimati	ion Informo	ation		Tot	Federal Loa	n Amount			\$0
	3 Cost Est. Class					Program/A	llowance To	ask Informa	ation	
	10/1/2017		Est. Date		Project Man					
	10/1/2017		Cost Est. Source		CIP Number					
Ali Khraizat		Cost Est. Source			Description					
		Cosi	csi. Fiepare	ea by						
Cost T	Cost Type Fiscal Year Exper				Fringe Bene	efilNonPersor	nne	Comme	nt	
GLWA Salaries	CIP2021	FY19-		\$3			2021 CIP			
GLWA Salaries	CIP2021	FY20		\$86			2021 CIP			
GLWA Salaries	CIP2021	FY21		\$94	\$94 2021Cl		2021 CIP			
GLWA Salaries	CIP2021	FY22		\$95	\$95 2021CI		2021 CIP			
GLWA Salaries	CIP2021	FY23		\$95	\$95 20210		2021 CIP	CIP		
GLWA Salaries	CIP2021	FY24		\$95	\$95 2021CI		2021 CIP	JIP		
GLWA Salaries	CIP2021	FY25		\$95	\$95 2021CI		2021 CIP	CIP		
GLWA Salaries	CIP2021	FY26+		\$2	\$2 2021CIP					
			Phase Tot	al Expense	s By FY (All	figures are i	n \$1,000's)			
				51/00	FY24	FY25	FY26+	Total	5-Yr Total	
Prior Yr Actual	FY20	FY21	FY22	FY23	1124	1120			e il rerai	

GLW Great Lakes Water	<b>Authority</b>	GLWA FY 2021-2025 CIP 216 Assessment and Rehabilitation of WRRF yard piping and underground utilities									216006 CIP utilities
Phase Design &	Construct	ion Assistar	ice		Contra	ict NA			Status F	uture Planned	Start
Title Assessment and Rehabilitation of WRFF yard piping and underground utilities											
Phase Budget	Wastewa	ter				(	Cost A	llocation (	CTA		
Phase Status	Future Plo	inned Start				F	unding	g Source E	Bond Proc	eeds	
Start Date			9/13/2019					Fund	Constructio	on Bond Fund	
End Date		]	0/19/2024			Use	ful Life	e >20Yrs?	<i>(es</i>		
C	Cost Estimation Information				Tot	. Federa	l Loan	Amount			
	5	Cost	Est. Class			Progre	am/Al	lowance T	ask Inform	ation	
9	2/12/2018	Cost	Est. Date	F	Project Man	ager					
Eng		Cost	Est. Source	(	CIP Number						
Ali Khraizat	Ali Khraizat Cost Est. Prepared By				Description						
Cost Ty	ре	Fiscal Y	ear E	xpense	nse Fringe BenefitNonPersonne Comment						
Engineering Ser	vices	FY20		\$184				2021 CIP	)		
Engineering Ser		FY21		\$443	· · · · · · · · · · · · · · · · · · ·						
Engineering Ser		FY22		\$443			2021 CIP				
Engineering Ser		FY23		\$443			2021 CIP				
Engineering Ser		FY24 FY25		\$444 \$443			2021CIP 2021CIP				
Engineering Service		FT23 FY26+		\$10			2021CIP				
			Phase Tot	al Expense	s By FY (All	figures	are in				
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25		FY26+	Total	5-Yr Total	
0	184	443	443	443	444		443	10	2,410	2,216	
Phase Task Da	tes										
Phase Task Nan Pre-Procuremer App B - Pa	nt 1/13		d Date //15/2019	Duration 212							



## GLWA FY 2021-2025 CIP 216006 CIP# Assessment and Rehabilitation of WRRF yard piping and underground utilities

Phase Task Name	Start Date	End Date	Duration
Procurement	8/16/2019	2/11/2020	179
Project Execution	2/12/2020	7/8/2025	1973

hase Construc	tion	A	:221116111	ana kena	Contrac		ara piping		lerground u ure Planned St	
		abilitation c	of WRFF yar	rd piping an	d undergrour			510103 101	ore i larinea si	an
Phase Budget			,		0		Allocation (	CTA		
Phase Status	Future Pla	nned Start				Fund	ling Source B	ond Procee	eds	
Start Date							Fund (	Constructior	n Bond Fund	
End Date						Useful	Life >20Yrs? Y	'es		
C	ost Estimat	ion Informa	tion		Tot. I	ederal Lo	an Amount			\$0
	Cost Est. Class					Program,	Allowance T	ask Informa	tion	
	Cost Est. Date				Project Manag	ger				
	Cost Est. Source				CIP Number					
	Cost Est. Prepared B				Description					
Cost Ty	Cost Type Fiscal Year Expe				se Fringe BenefitNonPersonne Comment				nt	
Construction		FY21		\$3,754	24		2021 CIP	2021 CIP		
Construction		FY22		\$4,216						
Construction		FY23		\$4,216						
Construction		FY24		\$4,228						
Construction		· · · · · · · · · · · · · · · · · · ·		\$4,862						
Construction		FY26+		\$261			2021 CIP			
			Phase Tot	al Expense	s By FY (All fi	gures are	in \$1,000's)			
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
				4,216	4,228	4,862	2 261	21,537	21,276	

# Phase Task NameStart DateEnd DateDurationProcurement5/12/20208/9/202089Project Execution<br/>App B - Page 1788/10/20205/9/20251733

GLWA Great Lakes Water Author	ity	Assessment		LWA FY 2021-2025 CIP216006 CIP#abilitation of WRRF yard piping and underground utilities
Phase Task Name	Start Date	End Date	Duration	
Project Closeout	5/10/2025	7/8/2025	59	



Assessment and Rehabilitation of WRRF yard piping and underground utilities

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	3	270	4,291	4,754	4,754	4,767	5,400	273	24,512	23,966
2020	0	0		0	323	5,258	3,849	4,500	3,500	7,423	0	24,853	17,430
2019	0				1,718	4,008	7,174	17,530	24,026	0	0	54,456	30,430
2018			1,700	2,000	12,000	15,600	16,279	4,141	0	0	0	51,720	47,579

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** This project was separated from of SFE PS rehabilitation and the schedule was advanced by 1 FY.

Changes



# GLWA FY 2021-2025 CIP DTE Primary Electric 3rd Feed Supply to WRRF

216007 CIP#

Innovation	Project Status Active	The new 3rd 120/13.8 k	
Conceptual WW MP	<b>CIP Type</b> Project	Transformer installe and owned by th	
Water MP Right Sizing		Great Lakes Wat	
Reliability/Redundancy	Project New To CIP	Authority waiting for th	A REAL PROPERTY OF A REAL PROPER
□ NEWTP Repurposing		3rd Primary Electr Feed Line to be installe	
		and energize	ed
		Budget	Wastewater
Project Engineer/Manager	Phillip Kora	Budget Class Lvl 1	Wastewater Wastewater
	Phillip Kora Philip Kora	-	
Director	•	Class Lvl 1 Class Lvl 2	Wastewater
Director	Philip Kora WW Construction Eng	Class Lvl 1 Class Lvl 2 Class Lvl 3	Wastewater WRRF

Scope of Work / Project Alternatives The scope of this design-build project includes design and construction of 3rd 120 kV primary electric supply transmission line owned by DTE tapping into the 120-kV Waterman-Zug line in the vicinity of Dearborn St. and Copland St right-of-way at Tower 1368. The design-build services also include securing the property right-of-way easements from the property owners, as well as the design and construction of power transmission supply line. This primary transmission power line will energize the already installed new 120-13.8 industrial substation owned by GLWA near EB-1.

Other Important Info Challenges: Negotiation with private property owners and testing of the automatic switch over will require coordination with operations.

Project History: The WRRF has been supplied primary electrical power through the DTE Maxwell Switching Station via two power supply lines Maxwell 1 and Maxwell 2. The two main electrical buildings at the WRRF which feed the primary and secondary facilities are Electrical Building 1 and 2 (EB-1 and EB2). EB2 supply electrical power to the pump station #1 and all the primary treatment facilities. EB1 supply power to pump station #2, secondary treatment facilities, dewatering, incineration and all other remaining facilities. The City of Detroit's Public Lighting Department (PLD) provided a redundant 24kV back-up electrical services to EB2 through the City of Detroit 24kV industrial substation. In the event of DTE power supply failure the PLD 24kV power supply line provided redundancy and reliability to EB2. The back-up power supply by PLD at EB-2 required a manual switch over in the



216007 CIP#

### DTE Primary Electric 3rd Feed Supply to WRRF

event of DTE power failure. The City of Detroit's PLD discontinued its power generation in the late 1980's. PLD also started curtailing electrical power supply distribution to its customers. The study by HRC in 1988 and later by Metcalf & Eddy in the early 90's during design and construction of Pump Station # 2 project identified the need for a 3rd primary electrical supply line. In order to provide reliable and redundant primary electric power supply to the WRRF after the September 8, 2011 power failure event, GLWA initiated a consulting services contract "CS-1449 Underground Electrical Duct Bank Repair and EB-1, EB-2 and EB-10 Primary Power Services Improvements at the WWTP". This CS-1449 scope required to study and design reliable and redundant primary electrical power system improvements. The study recommended to abandon PLD's 24kV back-up electric power supply to EB-2 and replace with a 3rd power supply feed line from DTE's Waterman substation. In addition to the 3rd power feed line, the study also recommended a new 120-13.8 kV transformer near EB-1 and a new 15kV power supply line to EB-2, to address power redundancy and reliability. Construction of the primary power services improvements design through CS-1449 were procured through contract PC-783. The contract PC-783 in the 1st guarter of 2016 abandoned and removed the 24kV power feed line and industrial substation owned by PLD. On May 29, 2012, GLWA signed a letter of agreement with DTE to provide a 3rd 120kV feed transmission line owned by DTE (paid by GLWA) to a new 120-13.8 kV industrial substation built and owned by GLWA. The DTE agreed to obtain all required property right-of-way and easements for the route with reasonable effort per the agreement with GLWA. The PC-783 contract allocated \$1.30 Million budget for DTE to execute these services. GLWA, through construction contract PC-783, has already installed a new 120-13.8 industrial substation near EB-1, a new 15kV power supply line from the new transformer to EB-2, and removed 24kV back-up electrical service line and industrial substation owned by PLD. However, DTE failed to get property right-of-way and easements for the route. DTE's original design route for transmission line was along the railroad tracks but the rail company declined to provide right-ofway for DTE's new transmission line. DTE later planned a longer transmission route to buy property from private owners, but a property owner increased the price sensing urgency for GLWA. The new cost estimate by DTE for this new transmission line is \$4.3 Million. GLWA's WRRF requires a reliable and redundant electrical power supply in order to be in compliance with NPDES permit requirements. The disconnection and removal of backup power supply from PLD leaves GLWA vulnerable for power failure and this urgent power supply line needs to be installed at the earliest. In order to speed design and construction GLWA is proposing a design-build project delivery method for the 3rd power supply line project. Presently there is no true redundant primary electrical service feed line to the WRRF, both the primary electric supply lines originate from the DTE Maxwell Switching Station. GLWA's General Counsel is currently working on utilizing the "Condemnation Process" to acquire easement from the private property owners for this route.

Related Project PC-783 project.

**Primary Driver** 3 - Regulatory

Driver Explanation GLWA's WWTP requires a reliable and redundant primary electrical power supply in order to be in compliance with its NPDES permit requirements. The disconnection and removal of backup power supply line and substation from PLD leaves GLWA very vulnerable in



# PM Weighted Score 89.8

Criteria	Score	Comment
Condition	5	Immediate replacement/rehabilitation require
Performance (Service Level/Reliability)	5	High Risk of Performance Failures
Regulatory (Environmental/Legal)	5	Imminent risk of causing permit violations
Operations and Maintenance	2	Repair of equipment will cost money in case c
Public Health and Safety	5	Catastrophic failure w/safety/health/environn
Public Benefit	5	Additional Savings for GLWA
Financial	5	Project will result in avoidance of fines
Efficiency and Innovation	3	Project will have a moderate impact on energ

# **RC Weighted**

# Score

#### 82.8

Criteria	Score	Comment
	30016	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	2	
Public Health and Safety	4	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	1	



DTE Primary Electric 3rd Feed Supply to WRRF

216007 CIP#

Phase Construction Title DTE Primary Electric 3rd Feed Supply to WRRF						Contro	nct N	IA		Status A	ctive	
<b>Title</b> DTE Prima	ry Electr	c 3rd Fee	ed Supply	to WRR	F							
Phase Budget	<b>W</b> astev	vater						Cost	Allocation	CTA		
Phase Status	Active					Funding Source Bond Proceeds						
Start Date	•		6/6/2018						Fund	Constructio	on Bond Fund	
End Date	•	6/6/2019					ι	Useful Lii	ie >20Yrs?	Yes		
Cost Estimation Information						То	t. Fed	eral Loa	n Amount			
						Pro	aram/A	llowance	Task Inform	ation		
				F	Project Man		, grann/ F					
· · · · · · · · · · · · · · · · · · ·	7/31/201					CIP Number	-					
			Cost Est. S									
РМА		(	Cost Est. P	repared	I By	Description						
Cost Ty	/pe	Fisc	al Year	Exp	oense	Fringe Ben	efitNc	onPersor	nne	Comm	ent	
Construction		FY19-	-		\$723	23 2021 CIF			Р			
Construction		FY20			\$2,869	69 2021C			2021 CI			
Construction		FY21			\$1,131				2021CI	Р		
Construction		FY22			\$654				2021CI	Р		
			Pha	se Total	Expense	s By FY (All	figur	es are i	n \$1,000's	)		
Prior Yr Actual	FY20	FY2	l FY	22	FY23	FY24	F١	Y25	FY26+	Total	5-Yr Total	
723	2,86	9 1,	131	654	0	0		0	0	5,377	7 1,785	
Phase Task Da	ites											
Phase Task Nar	me Sto	rt Date	End Da	te Du	uration							
Procurement		1/1/2019	5/6/2	019	125							
Project Executio	on	8/1/2019	6/30/2	021	699							
Project Closeou	Jt 🛛	7/1/2021	12/27/2	021	179							

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	/^			(	GLWA FY	2021.	2025 CI	P			216007 CIF	
Great Lakes Water.	Authority			DTE	DTE Primary Electric 3rd Feed Supply to WRRF							
Phase GLWA Em	nployees F	Project man	agement		Co	ntract	NA		Status Ac	tive		
Title GLWA Sala	aries											
Phase Budget	ase Budget Wastewater						Cost A	Allocation	CTA			
Phase Status	Active	tive					Fundir	ng Source	Bond Proce	eds		
Start Date								Fund	Constructior	n Bond Fund		
End Date							Useful Lif	e >20Yrs?	No			
Co	Cost Estimation Information				Tot. Federal Loan Amount							
	3	Cost	Est. Class		Program/Allowance Task Information							
7	/31/2019	Cost	Est. Date		Project <i>I</i>	۸anage	er					
		Cost	Est. Source	CIP Number								
РМА		Cost	Est. Prepar	red By	ed By Description							
Cost Ty	•	Fiscal Ye	ear	Expense		Benefit	NonPersor		Comme	nt		
GLWA Salaries C		FY20		•	69			2021CI				
GLWA Salaries C		FY21		•	75			2021CI				
GLWA Salaries C	JP2021	FY22		\$	37			2021 CI				
			Phase To	tal Exper	nses By FY	(All fig	ures are i	n \$1,000's]	)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24		FY25	FY26+	Total	5-Yr Total		
0	0 69 75 37				0	0	0	0	181	112		
Phase Task Dat	es											

GLW Great Lakes Water	Authority			GLWA FY 2021-2025 CIP DTE Primary Electric 3rd Feed Supply to WRRF							216007 CIP	
Phase not appli	cable				Contro	act NA	١		Status CI	osed Out		
Title Prior Year	Actual Exp	enses										
Phase Budget	Wastewat	er										
Phase Status	Closed Ou	Jt					Fundin	ig Source				
Start Date								Fund				
End Date						U	eful Lif	e >20Yrs?	No			
C	ost Estimati	ion	Tot. Federal Loan Amount									
	1	Cost Es	st. Class	Program/Allowance Task Information								
		Cost Es	st. Date	Project Manager								
		Cost Es	st. Source		CIP Numbe	r						
		Cost Es	st. Prepare	d By	Description							
			-									
Cost Ty	pe	Fiscal Yea	ar E	xpense	Fringe Ber	nefilNor	Person	ne	Comme	ent		
n/a		FY19-		\$15	5			2021CI	Р			
		P	hase Toto	al Expens	es By FY (Al	l figure	s are iı	n \$1,000's	)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY2	25	FY26+	Total	5-Yr Total		
15	0	0	0	0	0		0	C	15	0		

### Phase Task Dates



DTE Primary Electric 3rd Feed Supply to WRRF

Phase Design &	Construct			Contro	i <b>ct</b> TB	D		Status Ac	ctive			
Title DTE Prima	ry Electric	3rd Feed S	upply to	WRRF								
Phase Budget	Wastewa	ter			Cost Allocation CTA							
Phase Status	Active						Fundin	ng Source	Bond Proce	eds		
Start Date									Fund	Constructio	n Bond Fund	
End Date							U	seful Lif	e >20Yrs?	Yes		
С	ost Estimat	tion Inform	ation			Tot	. Fede	ral Loai	n Amount			\$0
	4	Cost	Est. Clas	S			Prog	gram/A	llowance	Task Inform	ation	
7	7/31/2019	Cost	Est. Date	è	F	Project Man	ager					
Estimate		Cost	Est. Sour	ce	CIP Number							
Engineering		Cost	Est. Prep	ared By	[	Description						
Cost Ty	'ne	Fiscal Y	'ear	Expens	е	Fringe Ben	efitNor	Person	ine	Comme	ent	
Engineering Ser	vices	FY20			\$124 2021CI			2021 CI				
Engineering Ser	vices	FY21			\$90				2021 CII	C		
Engineering Ser	vices	FY22			\$36				2021 CI	C		
			Phase	Total Exp	ense	s By FY (All	figure	s are i	n \$1,000's	)		
Prior Yr Actua	FY20	FY21	FY22	FY2	23	FY24	FY	25	FY26+	Total	5-Yr Total	
0	124	90		36	0	0		0	0	250	126	
Phase Task Da	tes											
Phase Task Nar	ne Start	Date Er	nd Date	Duratio	on							
Project Executio	roject Execution 8/1/2019 12/27/2021											



### DTE Primary Electric 3rd Feed Supply to WRRF

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	738	3,062	1,296	727	0	0	0	0	5,823	2,023
2020	0	0	584	2,108	1,381	3,374	0	0	0	0	0	7,447	4,755
2019	0	15		2,002	1,326	3,326				0	0	6,669	6,654
2018			3,500	3,500					0	0	0	7,000	7,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP The agreement between DTE and GLWA is signed and the kick off meeting will be scheduled in the month of August 2019



## GLWA FY 2021-2025 CIP Rehabilitation of Screened Final Effluent (SFE) Pump Station

✓ Innovation	Project Status Future Planned	
Conceptual WW MP	CIP Type Project	
<ul> <li>Water MP Right Sizing</li> <li>Reliability/Redundancy</li> <li>NEWTP Repurposing</li> </ul>	Project New To CIP	
		Budget Wastewater
Project Engineer/Manager	TBD	Class Lvl 1 Wastewater
Director	Dan Alford	Class Lvl 2 WRRF
Managing Dept	WW Design Eng	Class Lvl 3 General Purpose
Date Original Business Case	Prepared 6/21/2017	Location City of Detroit
Year Project Ad	ded to CIP 2018	Fund and Cost Center Wastewater - 5421-892211

Scope of Work / Project Alternatives Station. This includes required capacity, pumps, strainers, piping, controls, building improvements, and electrical supply. This will also include a study to evaluate the potential for replacing the secondary water utilization with SFE utilization where feasible and an alternative analysis to the existing carrier water at chlorination/dechlorination facility, seal water, recovery needs which may include additional SFE treatment such as chemical addition to accommodate process needs.

Other Important Info \*Innovation note: optimize of a valuable resource recovered for facility needs. Project History: The SFE pump station has eight pumps with a total capacity of approximately 135 MGD. Pumps 1,2,4, and 6 were installed in 1973, pumps 3 and 5 in 1980, and pumps 7 and 8 in 1998. The older pumps were rebuilt in 1998. Strainers have been reconditioned as necessary over time. Due to the critical nature of the SFE pump station and the elapsed time since a major rehabilitation (over 15 years), a significant upgrade/rehabilitation is required. In addition, the two 5 kV transformers that supply power from EB-3 are approximately 40 years old and are in need of replacement.

Challenges: Maintaining the adequate supply of SFE to the plant treatment processes during construction of the SFE improvements.

**Related Project** There are no other specific projects for the SFE pump station that need to be coordinated with, however many other projects require SFE to consistently supply the required quantities needed. This will need to be coordinated



#### Rehabilitation of Screened Final Effluent (SFE) Pump Station

with these projects during construction of the improvements.

Primary Driver 1 - Condition

**Driver Explanation** The SFE pump station is very old and is critical to other treatment processes meeting permit requirements (e.g. incinerator air permit requirements). The Secondary Water System is very corroded and needs to be rehabilitated or relocated.



## PM Weighted Score 55.8

Criteria	Score	Comment
Condition	5	Some components are passed their useful life
Operations and Maintenance	4	Significant O&M is required to keep the SFE in
Financial	4	Exposure to multiple fines for permit violations
Performance (Service Level/Reliability)	2	2Much of the equipment is out frequently out c
Regulatory (Environmental/Legal)	2	If the SFE pump station goes down, there is an
Efficiency and Innovation	4	Project will have a significant impact on efficie
Public Benefit	2	Public will benefit from improved air quality
Public Health and Safety	1	Permit violations would cause both air quality

# **RC Weighted**

### Score

## 55.8

Criteria	Score	Comment
Regulatory (Environmental/Legal)	2	
Efficiency and Innovation	4	
Condition	5	
Public Health and Safety	1	
Performance (Service Level/Reliability)	2	
Financial	4	
Operations and Maintenance	4	
Public Benefit	2	
E		



Rehabilitation of Screened Final Effluent (SFE) Pump Station

<b>Phase</b> GLWA E <b>Fitle</b> GLWA So	. ,	roject mar	nageme	nt		Contro	ict NA			Status	Futur	e Planned S	tart
Phase Budge	t Wastewa	ter					(	Cost A	llocation	CTA			
Phase Statu	s Future Plc	nned Start					F	undin	g Source	Bond Pro	ceed	ls	
Start Date	e								Fund	Construc	tion B	ond Fund	
End Date	9						Use	ful Life	e >20Yrs?	No			
(	Cost Estimat	ion Inform	ation			То	. Federo	ıl Loan	Amount				\$0
	3	Cost	Est. Clas	SS			Progr	am/Al	lowance 1	Task Infor	matic	on	
	10/1/2018	Cost	Est. Date	e	P	Project Man	ager						
		Cost	Est. Sou	rce	C	CIP Number							
		Cost	Est. Prep	bared By	۵	Description							
Cost T	уре	Fiscal Y	'ear	Expense	e	Fringe Ben	efitNonF	ersoni	ne	Com	ment		
GLWA Salaries	CIP2021	FY20			\$86				2021 CIF	D			
GLWA Salaries	CIP2021	FY21			\$86				2021 CIF	5			
GLWA Salaries	CIP2021	FY22			\$104				2021 CIF	5			
GLWA Salaries	CIP2021	FY23			\$121				2021 CIF	2			
GLWA Salaries	CIP2021	FY24			\$118				2021 CIF	D			
			Phase	Total Exp	enses	s By FY (All	figures	are in	\$1,000's	)			
Prior Yr Actua	FY20	FY21	FY22	FY2	23	FY24	FY25	5	FY26+	Total		5-Yr Total	



Rehabilitation of Screened Final Effluent (SFE) Pump Station

Phase Constructio	n						Contro	act	NA		Status	Futu	ure Planned S	tart
Title Rehabilitatio	n of Scre	ened	Final Efflu	uent (	SFE) Pur	np St	ation							
Phase Budget W	'astewate	er							Cost A	Allocation	CTA			
Phase Status Fu	uture Plar	nned S	Start						Funding Source Bond Proceeds					
Start Date										Fund	Construc	tion	Bond Fund	
End Date									Useful Lif	e >20Yrs?	Yes			
Cosi	Estimatio	on Info	ormation				То	t. Fec	leral Loa	n Amount				\$0
	5	C	Cost Est. C	Class				Pr	ogram/A	llowance	Task Infor	mat	lion	
9/1	2/2018	C	Cost Est. D	)ate		I	Project Mar	nager						
Eng		C	Cost Est. S	ource	e	(	CIP Numbe	r						
Ali Khraizat		C	Cost Est. P	repai	red By	I	Description							
Cost Type	)	Fisc	al Year		Expense	e	Fringe Ber	nefitN	onPersor	ine	Com	mer	nt	
Construction		FY22			\$1	,147				2021 CIF	C			
Construction		FY23			-	5,196				2021 CIF				
Construction		FY24			\$5	5,556				2021 CIF	5			
			Pha	se To	tal Exp	ense	s By FY (Al	l figu	res are i	n \$1,000's]	)			
Prior Yr Actual 🛛 F	Y20	FY21	F١	(22	FY2	23	FY24	F	Y25	FY26+	Total		5-Yr Total	
0	0		0	1,147	7 15	,196	5,556		0	0	21,8	99	21,899	
Phase Task Dates	5													
Phase Task Name	Start D	ate	End Da	te	Duratic	on								
Procurement	6/28,	/2021	12/24/2	2021		179								
Project Execution	12/25,		4/25/2			852								
Project Closeout	4/26,	/2024	6/24/2	2024		59								

GLW Great Lakes Water Aut	<b>A</b> hority		R	ehabilit		WA FY 202 <sup>°</sup> n of Screer				(SFE) Pumi	o Station	216008 CIF
Phase Study and	-					Contrac	t NA	A		Status Fut	ure Planned S <sup>.</sup>	tart
Title Rehabilitatio	on of Scre	eened Fin	al Effluent	t (SFE) Pur	np Sto	ation						
Phase Budget V	Vastewat	fer						Cost A	llocation	CTA		
Phase Status F	uture Pla	nned Star	+					Fundin	g Source	Bond Proce	əds	
Start Date									Fund	Constructior	n Bond Fund	
End Date							U	seful Life	e >20Yrs?	Yes		
Cos	t Estimat	ion Inform	ation			Tot.	Fede	r <mark>al Lo</mark> ar	n Amount			\$0
	4	Cos	t Est. Clas	s			Prog	ram/A	llowance	Task Informa	ition	
9/	12/2018	Cos	t Est. Date		F	Project Mana	ger					
Eng	-	Cos	t Est. Sour	ce	(	CIP Number						
Ali Khraizat			t Est. Prep		[	Description						
	_	Eine ed V						Demes		<u></u>		
Cost Type Engineering Servio		Fiscal ` FY20	rear	Expense	e \$504	Fringe Benet	ninor	Person	ne 2021CI	Comme P	nt	
Engineering Service		FY21			,276				2021CI 2021CI			
Engineering Service		FY22		•	\$256				2021CI			
Engineering Servio	ces	FY23			\$254				2021 CI	Р		
Engineering Servio	ces	FY24			\$250				2021 CI	Р		
			Phase 1	lotal Exp	ense	s By FY (All fi	gure	s are ir	ר\$1 <i>,</i> 000's ו	)		
Prior Yr Actual I	FY20	FY21	FY22	FY2	23	FY24	FY2	25	FY26+	Total	5-Yr Total	
0	504	1,276	2	56	254	250		0	С	2,540	2,036	
Phase Task Date	S											
Phase Task Name	e Start [	Date Er	nd Date	Duratio	on							
Pre-Procurement			8/29/2019		59							
Procurement			2/25/2020		179							
Project Execution App B - Page	2/28	6/2020	6/24/2024	1	580							



216008 CIP#

Rehabilitation of Screened Final Effluent (SFE) Pump Station

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	590	1,362	1,507	15,571	5,924	0	0	24,954	24,364
2020	0	0		51	1,091	991	9,475	7,805	5,535		0	24,948	24,897

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP This project is separated from 2019 CIP 216006 and will label as a new project Changes



Innovation	Proj	ect Status Activ	ve			
Conceptual WW MI	P	CIP Type Proje	ect			
<ul> <li>Water MP Right Sizir</li> <li>Reliability/Redundation</li> </ul>		Project New To				
NEWTP Repurposing	J					
Project Engineer/Mana				-	Wastewater Wastewater	
Dire	<b>ctor</b> Dan A	ford		Class Lvl 2	WRRF	
Managing D	•	0 0		Class Lvl 3	General Purpose	
Date Original Business	Case Prepo	<b>ired</b> 8/6/2019		Location	City of Detroit	
				Location		
Year Projec	t Added to	<b>CIP</b> 2019		Fund and Cost Center	,	
Problem Statement Th p c d	ne warehou hysical cor ondition wi etermine w	use buildings the dition of the exi th extensive roo hether it makes	isting buildings, spe of leaking and othe	Fund and Cost Center t and supplies for GLWA are crifically the McKinstry ware r issues. There is an assessm o continue to operate thes	,	se
Problem Statement p c d fc Scope of Work / Project Alternatives	ne warehou hysical cor ondition wi etermine w acilities car valuate the nprove the eating, ver odes and r	use buildings the dition of the exi th extensive roo hether it makes be downsized existing condit facility environr tilation, electric egulations.	isting buildings, spe of leaking and other s economic sense to into one central site ions of the warehou ment to store the as cal, and lighting sho	Fund and Cost Center t and supplies for GLWA are cifically the McKinstry ware r issues. There is an assessm o continue to operate thes e. use facilities throughout GL ssets safely and efficiently.	e located at different facilities. The ehouse (SSS), seems to be in poor nent of the L&M Facilities going on to se facilities at the existing sites or if th WA. Provide recommendations to The various building systems, includir ompliance with applicable building	
Problem Statement p c d fc Scope of Work / Project Alternatives	ne warehou hysical cor ondition wi etermine w acilities car valuate the nprove the eating, ver odes and r esign and	use buildings the dition of the exi th extensive roo hether it makes be downsized i existing condit facility environr tilation, electric egulations. Construction of	isting buildings, spe of leaking and other s economic sense to into one central site ions of the warehou ment to store the as cal, and lighting sho	Fund and Cost Center t and supplies for GLWA are cifically the McKinstry ware r issues. There is an assessm o continue to operate thes e. use facilities throughout GL ssets safely and efficiently. all be evaluated to be in co	e located at different facilities. The ehouse (SSS), seems to be in poor nent of the L&M Facilities going on to se facilities at the existing sites or if th WA. Provide recommendations to The various building systems, includir ompliance with applicable building	



#### PM Weighted

Score

64.6

Criteria	Score	Comment
Performance (Service Level/Reliability)	4	High Risk of Performance Failure
Efficiency and Innovation	5	
Condition	4	Replacement or major rehabilitation needed
Regulatory (Environmental/Legal)	2	Low risk of causing permit/regulatory violation
Operations and Maintenance	4	High levels of maintenance required to keep t
Public Health and Safety	2	There are no major staff or hazard issues or co
Public Benefit	2	Project mostly requires new infrastructure
Financial	4	Not implementing the project would have sign

# RC Weighted

Score

# 71.6

Criteria	Score	Comment
Public Benefit	2	
Public Health and Safety	4	
Efficiency and Innovation	5	
Condition	5	
Financial	4	
Regulatory (Environmental/Legal)	2	
Performance (Service Level/Reliability)	4	
Operations and Maintenance	3	



LM Facilities Assessment and Rehabilitation/Replacement

Phase Construct Title	tion						Contro	act	tbd		:	<b>Status</b> Fu	ture Planned S	tart
Phase Budget	Wastewa	ater							Cost		cation C	TA		
Phase Status	Future Pla	anned	Start						Fund	ling S	ource Bo	ond Proce	eds	
Start Date											Fund C	onstructio	n Bond Fund	
End Date									Useful L	.ife >:	20Yrs? Ye	es		
Co	ost Estima	tion Info	ormatio	n			То	t. Fea	deral Lo	an A	mount			\$0
		(	Cost Est.	Class				Pr	ogram/	Allov	vance Ta	sk Informe	ation	
		(	Cost Est.	Date		F	Project Man	agei	r					
		(	Cost Est.	Source	e	(	CIP Number	r						
		(	Cost Est.	Prepa	red By	ſ	Description							
Cost Ty	pe	Fisc	cal Year		Expense	Э	Fringe Ber	nefitN	onPerso	onne		Comme	ent	
Construction		FY22			\$1	,165					2021 CIP			
Construction		FY23				\$835					2021 CIP			
			Ph	ase To	tal Exp	ense	s By FY (Al	l figu	res are	in \$	1,000's)			
Prior Yr Actual	FY20	FY2	1	FY22	FY2	23	FY24	ł	-Y25	F	Y26+	Total	5-Yr Total	
0	0		0	1,165	5	835	0		C	)	0	2,000	2,000	
Phase Task Dat	es													
Phase Task Nam	ne Start	Date	End D	ate	Duratio	on								
Procurement	3/	1/2021	8/31	/2021		183								
Project Executio		1/2021		/2023		545								
Project Closeou	t 3/	1/2023	4/30	/2023		60								



LM Facilities Assessment and Rehabilitation/Replacement

216009 CIP#

<b>Phase</b> GLWA Er	mployees F	Project mar	nagement		Contro	ict NA			Status F	uture Planned S	Start
Title GLWA Sal	aries										
Phase Budge	Wastewa	ter				C	Cost A	Allocation (	CTA		
Phase Status	Future Plc	nned Start				F	undir	ng Source	Bond Proc	ceeds	
Start Date	•							Fund (	Construct	ion Bond Fund	
End Date	•					Use	ful Lif	e >20Yrs?	res		
С	ost Estimat	ion Informo	ation		To	. Federa	l Loai	n Amount			\$0
		Cost	Est. Class			Progra	am/A	llowance T	ask Inforr	nation	
		Cost	Est. Date		Project Man	ager					
		Cost	Est. Source	e	CIP Number						
		Cost	Est. Prepa	red By	Description						
Cost Ty	/pe	Fiscal Y	ear	Expense	Fringe Ben	efilNonP	erson	ne	Comn	nent	
GLWA Salaries (	CIP2021	FY20		\$77				2021 CIP	)		
GLWA Salaries (	CIP2021	FY21		\$86				2021 CIP	)		
GLWA Salaries (	CIP2021	FY22		\$115				2021 CIP	)		
GLWA Salaries (	CIP2021	FY23		\$100				2021 CIP	)		
			Phase To	otal Expense	s By FY (All	figures	are iı	n \$1,000's)			
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25		FY26+	Total	5-Yr Total	
										78 301	

#### Phase Task Dates



LM Facilities Assessment and Rehabilitation/Replacement

hase Study and D	esign c	ind Constr	ruction Assist	lance	Contro	act ⊺	BD		Status A	ctive	
itle											
Phase Budget W	astewa	ter					Cost A	llocation C	CTA		
Phase Status Ac	ctive						Fundin	g Source B	ond Proce	eeds	
Start Date								Fund C	Constructio	on Bond Fund	
End Date						I	Useful Life	e >20Yrs? Y	es		
Cost	Estimat	ion Inform	ation		То	t. Fed	eral Loar	n Amount			\$0
	1	Cos	t Est. Class			Pro	ogram/Al	llowance To	ask Inform	ation	
		Cos	t Est. Date		Project Mar	ager					
		Cos	t Est. Source		CIP Numbe	·					
		Cos	t Est. Prepar	ed By	Description						
Cost Type		Fiscal `	Year E	Expense	Fringe Ber	efitNo	onPerson		Comm	ent	
Engineering Servic		FY20		\$150				2021CIP			
Engineering Servic		FY21		\$167				2021 CIP			
Engineering Servic		FY22		\$38				2021 CIP			
Engineering Servic	es	FY23		\$35				2021 CIP			
			Phase Tot	al Expense	es By FY (Al	figur	es are ir	ר\$1,000's <mark>)</mark> ו			
Prior Yr Actual F	Y20	FY21	FY22	FY23	FY24	F	Y25	FY26+	Total	5-Yr Total	
0	150	167	38	35	0		0	0	390	240	
Phase Task Dates											
Phase Task Name	Start	Date Er	nd Date	Duration							
Pre-Procurement	8/12	2/2019	9/30/2019	49							
Procurement	10/	1/2019	3/31/2020	182							
Project Execution	4/	1/2020	4/30/2023	1124							



216009 CIP#

### LM Facilities Assessment and Rehabilitation/Replacement

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	227	253	1,318	970	0	0	0	2,768	2,541

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



<ul><li>Innovation</li><li>Conceptual WW MP</li></ul>	Project Status Future Planned		
<ul> <li>Water MP Right Sizing</li> <li>Reliability/Redundance</li> </ul>	V Project New To CIP		
□ NEWTP Repurposing		Budget	Wastewater
Project Engineer/Manage	er TBD	Class Lvl 1	Wastewater
Direct	or Dan Alford	Class Lvl 2	WRRF
Managing De	pt WW Design Eng	Class Lvl 3	General Purpose
Date Original Business Co	ase Prepared 8/7/2019	Location	City of Detroit
Year Project /	Added to CIP 2019	Fund and Cost Center	
pro out refle on ger	cess and non-process buildings with of the shadows and into the light o ects the pride and importance of th the softer side of the facility, create	n varying levels of use and practice f the public and elected officials it ne work that is done every day at th a visitor center focusing on public cientists and operators, and to bec	nis facility. As such, this project will work
Scope of Work / The	work consists of extending the eval	luation performed as a part of Mas	ter Planning to desian and construct sit

Scope of Work / Project Alternatives The work consists of extending the evaluation performed as a part of Master Planning to design and construct site modifications including but not limited to a new visitor center, demolition or repurposing of existing structures that are no longer used, consolidation and or reconfiguration of administration, operations and maintenence staff and spaces, vehicle and equipment storage spaces, shops, etc. The project also includes site modifications to include improved site circulation, parking and fencing, green infrastructure, improved landscaping, wallking paths around the site and site features, including but not limited to educational signage and benches.

Primary Driver 6 - Public Benefit



### PM Weighted

Score

63.6

Criteria	Score	Comment
Public Benefit	5	updated 9/16/16 per NM   Will provide for a k
Regulatory (Environmental/Legal)	1	
Efficiency and Innovation	4	updated 9/16/16 per NM
Condition	4	Existing Admin Building does not function as a
Public Health and Safety	4	updated 9/16/16 per NM
Operations and Maintenance	3	updated 9/16/16 per NM   Will provide improv
Performance (Service Level/Reliability)	3	updated 9/16/16 per NM   Existing Admin Buil
Financial	3	updated 9/16/16 per NM

# **RC Weighted**

Score

# 63.6

Criteria	Score	Comment
Public Health and Safety	4	
Public Benefit	5	
Financial	3	
Regulatory (Environmental/Legal)	1	
Condition	4	
Operations and Maintenance	3	
Performance (Service Level/Reliability)	3	
Efficiency and Innovation	4	

GLV Great Lakes Wate	<b>VA</b> er Authority				G	LWA FY 20 WRRF			P ptimizatio	on		<b>216010</b> c
Phase Construc						Contr	act TE	BD		Status Fut	ure Planned S	tart
Title WRRF Visit	tor Center	and Sit	te Bea	utificatio	n							
Phase Budge	Wastewa	ater						Cost /	Allocation	CTA		
Phase Status	Future Pla	anned	Start					Fundiı	ng Source	Bond Procee	eds	
Start Date	•								Fund	Constructior	n Bond Fund	
End Date	•						U	seful Lif	e >20Yrs?	Yes		
C	ost Estima	on		Тс	ot. Fede	eral Loa	n Amount			\$0		
		t. Class			Pro	gram/A	llowance	Task Informa	tion			
		t. Date		Project Ma	nager							
	Cost Est. Source					CIP Number						
	Cost Est. Prepared					Description						
Cost Ty	/ne	Fisc	cal Ye	ar	Expense	Fringe Be	nefilNo	nPersor	ne	Comme	nt	
Construction	,  0 0	FY23			\$65				2021CII			
Construction		FY24			\$7,71	2			2021 CII	P		
Construction		FY25			\$63	62			2021 CII	P		
			F	hase To	tal Expen	ses By FY (A	ll figure	es are i	n \$1,000's	)		
Prior Yr Actual	FY20	FY2	1	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
0	0		0	0	65	6 7,712		632	0	9,000	9,000	
Phase Task Do	ites											
Phase Task Na	me Start	Date	End	Date	Duration							
Procurement	9/	/3/2022	3,	1/2023	17	9						
Project Execution		/2/2023		/1/2024	48	_						
Project Closeou	Jt 7/	/2/2024	8/3	80/2024	5	9						

**?**#

GLWA Great Lakes Water Authority			GL	WA FY 202 WRRF I			mizatio	n		216010 c		
' <b>hase</b> GLWA Employe <b>itle</b> GLWA Salaries	es Project mar	nagement		Contra	ct NA		Status Fut	ture Planned St	art			
Phase Budget Waste	water				C	Cost All	ocation (	CTA				
Phase Status Future	Planned Start	•			F	unding	Source E	Bond Proce	eds			
Start Date							Fund (	Constructior	n Bond Fund			
End Date					Use	ful Life	>20Yrs?	10				
Cost Esti	mation Inform	ation		Tot.	Federa	l Loan	Amount			\$0		
	Cost	Est. Class		Program/Allowance Task Information								
	Cost	Est. Date		Project Mana	ager							
	Cost	Est. Source	(	CIP Number								
	Cost	Est. Prepare	ed By	Description								
Cost Type	Fiscal Y	'ear E	xpense	Fringe Bene	efitNonPe	ersonn	e	Comme	nt			
SLWA Salaries CIP202	FY21		\$14						CIP			
LWA Salaries CIP202			\$86				2021 CIP					
LWA Salaries CIP202			\$97				2021 CIP					
SLWA Salaries CIP202			\$120				2021 CIP					
LWA Salaries CIP202	FY25		\$21				2021 CIP					
		Phase Tot	al Expense	s By FY (All	figures	are in	\$1, <mark>000's)</mark>					
	FY21	FY22	FY23	FY24	FY25		FY26+	Total	5-Yr Total			
rior Yr Actual FY20	1121		97	120		21	0	338	338			

GLW Great Lakes Water A	<b>A</b> uthority				GL	WA FY 202 WRRF		25 CIP ty Opti	mizatio	on			216010 CIP
Phase Design &	Constructio	on Assista	nce			Contra	ct TB	D		Status	Futi	ure Planned St	art
Title WRRF Visitc	or Center a	nd Site Be	eautificatio	on									
Phase Budget	Wastewate	er						Cost All	ocation	CTA			
Phase Status	Future Plar	nned Star	ł					Funding	Source	Bond Pro	cee	eds	
Start Date									Fund	Construc	tion	Bond Fund	
End Date							U	seful Life	>20Yrs?	Yes			
Co	ost Estimatio	on Inform	ation			Tot	. Fede	ral Loan	Amount				\$O
		Cost				Proc	aram/Allo	owance	Task Infor	mai	tion		
		Cost		I	Project Man	-					-		
	Cost Est. Source												
	Cost Est. Source Cost Est. Prepared B					By Description							
		COSI	esi. riepo	пеа ву									
Cost Typ	be	Fiscal Y	'ear	Expense	<del>)</del>	Fringe Ben	əfitNor	Personn	е	Com	mer	nt	
Engineering Serv	ices	FY22		\$	571				2021 CI	Р			
Engineering Serv	ices	FY23		\$	5234				2021 CI	Р			
Engineering Serv	ices	FY24		\$	5167				2021CI	Р			
Engineering Serv	ices	FY25			\$28				2021 CI	Р			
			Phase To	otal Expe	ense	s By FY (All	figure	s are in	\$1,000's	)			
Prior Yr Actual	FY20	FY21	FY22	FY2	3	FY24	FY	25	FY26+	Total		5-Yr Total	
0	0	0	57	1	234	167		28	C	1,0	00	1,000	
Phase Task Dat	es												
Phase Task Nam	ne Start D	ate Er	nd Date	Duratio	n								
Pre-Procuremen	t 5/1	/2021 (	6/30/2021		60								
Procurement	7/1	/2021	1/1/2022		184								
Project Execution	n 1/2	/2022 8	3/30/2024	C	971								



# Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	14	657	987	7,999	681	0	10,338	10,338

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> <li>Reliability/Redundar</li> <li>NEWTP Repurposing</li> </ul>		Aerial photo, far left, Oakwood Sewer Distri- depicting previous designed relief sewer tributary to Oakwood Pump Station and CS Retention Treatme Basin. Part of the planned relief sewer and associate hydraulic structure were constructed	ct sly ers od O ont ne ers ed es ed
<b>.</b>		-	Wastewater
Project Engineer/Manag	-		Wastewater
	tor Biren Saparia		Field Services
Managing De	•	Class Lvl 3	Interceptor
-	Case Prepared 7/27/2016	Location	Multiple Counties
Year Project	Added to CIP 2014	Fund and Cost Center	Wastewater - 5421-892211
red Se ar	provements to the Oakwood District Sanit commended in report by Applied Science wers, 2) Analysis and improvement of Oak Id 4) NWI Diversion for CSO Control. Projec pject (GLWA CS-036).	es, Inc. Dated 2/26/16. Project wood PS/RTB operations, 3) S	s to include: 1) Clean & Inspect Trunk econd influent sewer to Oakwood PS,
Project Alternatives Int	e work includes basis of design (study) rep ercommunity Relief Sewer, diversion of sto emerging projects. Coordinate with DWSI	orm water flow, and construct	ion assistance during construction phase
·	fer to linked aerial photo of Oakwood Dis Instruction in the District for PCS-79, PCS-80 Instruction of Oakwood District shown above—	) and PC-755; map of Intercor	mmunity Collection System including
C۲ App B - Page 208	nallenges: Maintaining the wet weather co	ontract capacities and adequ	uate CSO treatment during extreme



#### Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

222001 CIP#

storm events and mitigate basement and street flooding in the District and intercommunity regional districts are the most significant challenges for the project to address. Other Important Info: The Oakwood District is located in the southwest portion of the City of Detroit covering an area of 1,520 acres. In general, it's bound within by a continuous stretch of the northerly and westerly bank of the Rouge River, thence stretches of the city limits of River Rouge and Ecorse to the south, thence a stretch of the city limits of Lincoln Park to the far lower west (abutting a stretch of Outer Drive near the adjacent watercourse of Ecorse Creek further west), thence a stretch of the city limits of Melvindale to the north near I-75 (between Outer Drive and Schaefer Hwy), thence a continued stretch of city limits of Melvindale to the upper west abutting Schaefer Hwy (between I-75 and the point of beginning along southerly embankment of the Rouge River adjacent Mellon Ave.

Much of the District was originally platted as Oakwood Village, later annexed to the City of Detroit. Some areas of the District are situated in relatively low-lying, flood prone topographies. Much of the combined sewer drainage system was originally designed and built since the 1930's with laterals and larger trunk and intercepting sewers tributary to the former (and present replacement) Oakwood Pumping Station situated near the intersection of Sanders and Liddesdale Street. In early years, combined sanitary and intercepted storm runoff flow drained to that pump station was coarsely screened, pumped (lifted) and, in turn, conveyed though two discharge conduits tributary to a segment of O'Brien Drain--a natural and man-made (modified) stream confluent to the Rouge River--without further treatment.

Whereas much of the remaining area of the District, predominantly that north of Fort Street and east of Schaefer highway (a/k/a Oakwood Heights), is situated on relatively higher terrain. Originally, good portions of this area4 connected to public sewers drained to other streams or outfalls tributary to the Rouge and otherwise drained to the original municipal wastewater treatment plant in Detroit via other lateral, trunk and intercepting sewers tributary to an original 24" siphon connection constructed beneath the Rouge River just south of the Fort Street bridge to the city's 12'-9" Oakwood Interceptor also constructed in the 1930's extending from the WWTP, largely paralleling the Rouge River to a point ending just north of Fort Street beneath Miller Road.

In the 1940's, a 3'-0" sewer was constructed from the original pump station's discharge channel which proceeded northerly beneath Sanders St and thence easterly beneath Fort St to a drop shaft hydraulic structure at below intersection at Bayside St in turn connected with a 24" siphoned sewer running easterly beneath the Rouge River and connecting with a downstream hydraulic connection to the City's 12'-9" Oakwood Interceptor (later renamed Oakwood Northwest Interceptor, or ONWI) tributary to the WWTP (originally built in the 30's and placed into operation in early 40's) to primarily convey pumped sanitary (dry weather) flow from the southerly portion of the District to the treatment plant. Continued sewer modifications in the District promoted the intercepting sewers constructed along Pleasant, Sanders and elsewhere connecting with the main Liddesdale Interceptor—the primary influent sewer to pump station.

In the 1950's, to meet increased service needs in the far western sewer districts of the City of Detroit and neighboring communities of Wayne County and otherwise mitigate increased public health risks, the county (with endorsements from a coalition of these municipalities) commissioned construction of the 10'-0" cylinder



### Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

222001 CIP#

Northwest Interceptor (NWI). The NWI was constructed in segments, phased over 10 years. Its alignment generally extends 15 miles northwest from its terminus near Fort and Bayside within the Oakwood District --largely following the original watercourse of main trunk of the Rouge thence northerly beneath the Southfield Freeway (M-39) to a connection with the tributary 7'-6" cylindrical Ford Road intercepting sewer—which transports upstream drainage from Detroit's Rouge River District as well as drainage from several hydraulically-connected suburban communities. The NWI's transport capacity, although initially sized to convey wet weather flows resulting up to the typical 10-year uniform rainstorm simulated across the collection system, contributes to ¼ or more of all annual tributary influent flows to the WRRF, on average—depending on prevailing transport capacities along its extensive run as well as limited transport capacities within the downstream ONWI.

It should be recognized that the sole hydraulic-connection from the Oakwood Sewer District for drainage to the NWI is via a drop manhole connection of the aforementioned 36" sanitary discharge main leading from the new (replacement) Oakwood pump station and integral CSO retention treatment basin built in 2011 (PC-755). This connection, which is located beneath Fort St just upstream of the above-mentioned 1950's hydraulic drop shaft structure located at Fort at Bayside with a connected 6'-3" siphon to the ONWI. For more information on Oakwood District refer to Section 2.4 of the linked Description of Sewer Service Districts from the 2003 Wastewater Master Plan, some subject to revisions, since the Oakwood Pump Station and CSO Control Facility was constructed in 2011. Also for further reference, refer to linked Oakwood District Sewer Maps.

Prior Drainage Plans; Continued Interim Plans As part of overall renovation, larger, deeper intercepting sewers and relief sewers were proposed to Oakwood District to alleviate the surcharging and flooding of basement. Contact PCS-79 (2011) implemented sewer modifications designed in the Oakwood Heights area as well as Junction Chamber No. 1 at the headworks (influent channels) to the new Oakwood pump station/CSO RTB just east of Pleasant Ave; PCS-80 (2012) implemented select designed relief and replacement sewers in tributary area to the existing 9'-0"- Liddesdale intercepting sewer. In addition, the proposed system also consisted of a replacement of the existing sewer systems through the district area. The existing sewer system generally consists of sewer line located behind homes, which is connecting sanitary flows from homes and storm flows from the catch basins located in the street.

Previously, GLWA authorized a new task to Applied Science, Inc. (ASI) under CS-1482 to perform the baseline hydraulic and hydrologic analysis for the impacted areas of the Oakwood District based on the recent condition of the site, such as conversion of the green space by the Marathon Oil Company, current hydrologic factors given the current land use, and assessment of other land and abandoned properties.

Moreover, extended efforts have been undertaken by ASI, as engineering representative of Wayne County, and GLWA to address wet weather capacity needs for the intercommunity districts tributary to GLWA's NWI and the county's Rouge Valley Interceptor (1965) illustrated on above map)--which are hydraulically-connected with a passive structure (B-097) built in the 1960's at their crossing (i.e., double 6'-6'' siphons of the RVI beneath the NWI's alignment) in proximity of Pleasant Ave and Oakwood Ave intersection.

**Related Project** CS-1482, Oakwood District Analysis (ongoing) ; CS-1522 (DWSD), Green Infrastructure; Wastewater Master Plan (GLWA CS-036) ; CS-1525, Regulatory Assistance



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Primary Driver 2 - Performance

Driver Explanation Preferred alternative wet weather relief sewer modifications to mitigate historical basement and street flooding in impacted districts and otherwise provide increased flow transport and treatment for economic, ecologic and societal benefit of customers in



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

PM Weighted Score			
51.8			
Criteria	Score	)	Comment
Condition		1	
Performance (Service Level/Reliability)		4	
Regulatory (Environmental/Legal)		2	
Operations and Maintenance		1	
Public Health and Safety		3	
Public Benefit		4	
Financial		3	
Efficiency and Innovation		3	
RC Weighted Score 53.6			
Criteria	Score	Comment	
Condition	1		
Performance (Service Level/Reliability)	4		
Regulatory (Environmental/Legal)	2		
Operations and Maintenance	1		
Public Health and Safety	3		
Public Benefit	4		
Financial			
Efficiency and Innovation	3	odated	



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase Construct						Contro				<b>Status</b> Fut	ure Planned St	tart
Title Oakwood	District Int	ercom	munity Rel	iet Sewer	Modific	cation at Oc	kwoo	d Distric	t			
Phase Budget	Wastewa	ter			Cost Allocation CTA							
Phase Status	Future Plc	anned S	start					Fundin	g Source B	ond Procee	eds	
Start Date			8/1/2	2021					Fund C	onstructior	n Bond Fund	
End Date			6/16/2	2024			U	seful Life	e >20Yrs? Y	es		
C.	at Eatimad	tion Info	rmation			То	. Fede	eral Loar	n Amount			
5     Cost Est. Class     Program/Allowance Task Information       Cost Est. Date       Project Manager       Mini Panicker												
		C	Cost Est. Do	ate			-	MINI PC	nicker			
		ource	(	CIP Number								
		C	Cost Est. Pr	epared By	By Description							
				_	_		<b>61</b> 1.	_				
Cost Typ	oe	Fisc FY23	al Year	Exper								
Construction Construction		FY23			\$2,589 10,827							
Construction		FY25		•	13,032							
Construction		FY26+	-	•	20,552							
		1.120					£*					
	5)(00					s By FY (All	-			<b>T</b> 1 1		
Prior Yr Actual	FY20	FY21			Y23	FY24		25	FY26+	Total	5-Yr Total	
0	0		0	0	2,589	10,827		13,032	20,552	47,000	26,448	
Phase Task Dat	es											
Phase Task Nam	ne Start	Date	End Date	e Dura	tion							
Procurement	8/1	0/2022	2/5/20	)23	179							
Project Executio		6/2023	5/1/20		1545							
Project Closeout	t .5/	2/2027	6/30/20	)27	59							

GLW Great Lakes Water	Authority	Oakw	ood Dist		WA FY 202 community			fication a	ıt Oakwood	222001 CIF District			
Phase Study and	-				Contra			Status Fut	ure Planned St	art			
Title Oakwood	District Int	ercommun	ity Relief Se	ewer Modifi	cation at Oa	kwood Distric	:†						
Phase Budget	Wastewa	ter				Cost	Allocation (	CTA					
Phase Status	Future Plc	nned Start				Fundi	ng Source B	ond Procee	eds				
Start Date			11/6/2019				Fund (	Constructior	n Bond Fund				
End Date			6/12/2024			Useful Li	e >20Yrs? Y	'es					
C	ost Estimat	ion Informa	tion		Tot	. Federal Loa	n Amount						
	5	Cost	Est. Class			Program/A	llowance T	ask Informa	tion				
		Cost	Est. Date		Project Man	ager Mini P	anicker						
		Cost	Est. Source	•	CIP Number								
			Est. Prepar		Description								
				ca by	-								
Cost Ty	ре	Fiscal Ye	ear	Expense	Fringe Ben	efitNonPersor	nne	Comme	nt				
Engineering Serv	vices	FY21		\$889	\$889 2021CIP								
Engineering Serv	vices	FY22		\$3,042			2021 CIP						
Engineering Serv	vices	FY23		\$704			2021 CIP						
Engineering Serv	vices	FY24		\$342			2021 CIP						
Engineering Serv	vices	FY25		\$341			2021 CIP						
Engineering Serv	vices	FY26+		\$682			2021 CIP						
			Phase To	tal Expense	es By FY (All	figures are i	n \$1,000's)						
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total				
0	0	889	3,042	704	342	341	682	6,000	5,318				
Phase Task Da	les												
Phase Task Nan	ne Start	Date End	d Date	Duration									
Pre-Procuremer	nt 7/	1/2020 9,	/28/2020	89									

 Pre-Procurement
 7/1/2020
 9/28/2020

 Procurement
 9/29/2020
 3/27/2021

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 3/27/2021

GLWA Great Lakes Water Authority	wood Dis		WA FY 202 community			er Modif	fication	at Oakwood	222001 CI District
Phase Task Name Start Date I	End Date	Duration							
Project Execution 3/28/2021	6/30/2027	2285							
Phase GLWA Employees Project m	anagement		Contra	ct NA			Status Fu	uture Planned S	tart
Title GLWA Salaries									
Phase Budget Wastewater				Co	ost Allo	ocation C	CTA		
Phase Status Future Planned Sto	art			Fu	nding	Source B	ond Proce	eeds	
Start Date						Fund C	Constructio	on Bond Fund	
End Date				Usefu	l Life	>20Yrs? Ւ	10		
Cost Estimation Inform	nation		Tot	. Federal	loan /	Amount			\$0
	st Est. Class						ask Inform	ation	T -
			Project Man						
	st Est. Date		CIP Number						
	st Est. Sourc								
Со	st Est. Prepa	red By	Description						
Cost Type Fiscal	Year	Expense	Fringe Bene	efilNonPe	rsonne	Э	Comm	ent	
GLWA Salaries CIP2021 FY21		\$86				2021 CIP			
GLWA Salaries CIP2021 FY22		\$86				2021 CIP			
GLWA Salaries CIP2021 FY23		\$78				2021 CIP			
GLWA Salaries CIP2021 FY24		\$65				2021 CIP			
GLWA Salaries CIP2021 FY25 GLWA Salaries CIP2021 FY26+		\$66 \$131				2021CIP 2021CIP			
				<u>.</u>					
		otal Expense							
Prior Yr Actual FY20 FY21	FY22	FY23	FY24	FY25		FY26+	Total	5-Yr Total	
0 0 8	6 80	5 78	65		66	131	512	2 381	
Phase Task Dates									

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Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	975	3,128	3,371	11,234	13,439	21,365	53,512	32,147
2020	0	0		0	0	0	3,800	10,077	10,077	14,077	0	38,031	23,954
2019	0				10	1,372	5,961	10,292	20,365	0	0	38,000	17,635
2018				550	2,750	5,500	2,200		0	0	0	11,000	11,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Project schedule has been changed.

Changes



### GLWA FY 2021-2025 CIP Detroit River Interceptor (DRI) Evaluation and Rehabilitation

<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> <li>Reliability/Redundar</li> <li>NEWTP Repurposing</li> </ul>		Visual inspection of large sew	
		Budget	Wastewater
Project Engineer/Manag	<b>ger</b> Mini Panicker	Class LvI 1	Wastewater
Direc	tor Biren Saparia	Class LvI 2	Field Services
Managing De	ept SCC	Class LvI 3	Interceptor
Date Original Business C	Case Prepared 10/11/2016	Location	City of Detroit
Year Project	Added to CIP 2016	Fund and Cost Center	Wastewater - 5421-892211
Scope of Work / Pre Project Alternatives co	aluation of the existing condition of the rtions based on the evaluation results of lection system and to increase its servi eliminary Scope of Work of the Project i nditions , provide the necessary clean llection system and to minimize the in	are essential to optimize the trans ice life. s as follows: Review the existing r ing/rehabilitation/replacement t	sportation capacity of the GLWA ecords, investigate the existing to optimize the design capacity of the
the Pro va De wit	nallenges: DRI may have flow control c ese inspections may reveal further need oject History: The installation of some of rious contracts. Petroit River Interceptor inspection was c th visible surface aggregates, attached dge deposition with reduced transport	d for cleaning, rehabilitation or re the GLWA interceptors and sew completed in 5 different phases c d encrustation and infiltration. So	rers are dated back to 1912 under and there were portions deteriorated
Related Project CC	DN-183 and DB-226		
Primary Driver 1 -	Condition		
Driver Explanation Re	cent inspections revealed portions with	n encrustation and deterioration	•



PM	Weighted Score
	73.2

Score	Comment
5	
4	
4	
3	
3	
4	
4	
2	
	Score 5 4 4 3 3 4 4 4 2

## **RC Weighted**

Score

### 65.4

Score	Comment
5	
4	
3	
1	
3	
4	
5	
1	
	Score 5 4 3 1 3 4 5 1



Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase Construction							on-183		Status A	ctive	
	oit River Interc	ceptor (DF	RI) EVAIUATIO	n ana	Renabilitat	ion			07.4		
Phase Budget Wa								llocation			
Phase Status Ac	tive			Funding Source Bond Proceeds							
Start Date		10/1,	/2017	Fund Construction Bond Fund							
End Date		6/30/	/2020	Useful Life >20Yrs? Yes							
Cost	Estimation Info	ormation		Tot. Federal Loan Amount							
	4	Cost Est. C	lass			Prog	gram/A	llowance 1	ask Inforn	ation	
8/31	/2017	Cost Est. D	ate	Project Manager Mini Panicker							
Engineering	(	ource	CIP Number								
Biren Saparia					<b>Description</b> Emegency repair of Detroit River Interesting the downtown area					River Intercept	or in
Cost Type	Fisc	al Year	Expen	pense Fringe BenefitNonPersonne Comment							
Construction	FY19-			5,227	5,227			2021 CIF	)		
Construction	FY20			\$613 2021CIP							
		Pha	se Total Ex	oense	s By FY (All	figure	es are i	n \$1,000's)			
Prior Yr Actual FY	(20 FY2)	I FY	′22 FY	23	FY24	FY	25	FY26+	Total	5-Yr Total	
5,227	613	0	0	0	0		0	0	5,84	0 0	
5,227 Phase Task Dates		0	0	0	0		0	0	5,84	0	
		0 End Dat			0		0	0	5,84	0 0	
Phase Task Dates			te Durat		0		0	0	5,84	0 0	
Phase Task Dates Phase Task Name	Start Date	End Dat	te Durat 017	ion	0		0	0	5,84	0 0	
Phase Task Dates Phase Task Name Pre-Procurement	Start Date 7/1/2017	End Dat 12/31/2 6/30/2	te Durat 017 018	ion 183	0		0	0	5,84	0 0	

GLV Great Lakes Wate	<b>VA</b> <i>r</i> Authority		Detroit I		NA FY 202 ntercepto		CIP Evaluatior	n and Re	ehat	oilitation	222002 CIP
Phase not appl	icable				Contra	ct NA		Status	Clo	sed Out	
Title Prior Year	Actual Exp	enses									
Phase Budge	Wastewat	er				Co	ost Allocatio	n CTA			
Phase Status	Closed Ou	t				Fu	nding Source	e			
Start Date	•						Fund	d			
End Date	•					Usefu	Life >20Yrs ار	? No			
С	ost Estimati	ion Information		٦	Tot	. Federal	Loan Amoun	it			
	1	Cost Est. C	lass			Progra	m/Allowance	e Task Info	orma	lion	
		Cost Est. D	ate	F	Project Man	ager					
		Cost Est. S	ource	C	CIP Number						
		Cost Est. P	repared By	. [	Description						
			,								
Cost Ty	/pe	Fiscal Year	Exper	nse	Fringe Bene	efilNonPe	rsonne	Cor	nmer	nt	
n/a		FY19-		\$5			20210	CIP			
		Pha	se Total Ex	pense	s By FY (All	figures a	re in \$1,000	's)			
Prior Yr Actua	FY20	FY21 FY	′22 F`	Y23	FY24	FY25	FY26+	Toto	al	5-Yr Total	
5	0	0	0	0	0		0	0	5	0	

GLWA				WA FY 202						222002	
Great Lakes Water Authority		Detroit	River I	Intercepto	or (D	RI) Eva	luation of	and Reha	bilitation		
nase Design and Build				Contro	nct D	B-226		Status Ac	tive		
le Repair/Rehab of D	RI from Alter Rd	to WRRF									
Pool for future projects							Г				
Phase Budget Wastew	ater					Cost A	llocation	CTA			
Phase Status Active			Funding Source Bond Proceeds								
Start Date							Fund	Constructior	n Bond Fund		
End Date					ι	Jseful Lif	e >20Yrs?	Yes			
Cost Estim	ation Informatio	n		To	t. Fede	eral Loai	n Amount				
1	Cost Est.	Class			Pro	gram/A	llowance 1	ask Informa	tion		
8/31/2017	Cost Est.	Date		Project Man	ager	Mini Po	anicker				
Contractor	Cost Est.	Source	<b>CIP Number</b> 222002			<u>)</u>					
Biren Saparia	Cost Est.	Prepared By		Description		Alter R	•	the repair/re . It involves fl	ehab of DRI fro low control	m	
Cost Type	Fiscal Year	Exper	nse	Fringe Ben	efilNo	nPerson	ne	Comme	nt		
esign-Build	FY19-		\$5,328				2021 CIF	)			
esign-Build	FY20	\$	15,465				2021 CIF	)			
esign-Build	FY21	\$	23,513				2021 CIF				
esign-Build	FY22		\$9,665				2021CIF				
esign-Build	FY23		\$1,357				2021 CIF	)			
	Ph	ase Total Ex	pense	s By FY (All	figur	es are iı	n \$1,000's)				
rior Yr Actual FY20			Y23	FY24	F١	(25	FY26+	Total	5-Yr Total		
5,328 15,465	23,513	9,665	1,357	0		0	0	55,328	34,535		
hase Task Dates											
Phase Task Name Star	t Date End D	ate Dura	tion								
re-Procurement 1(	)/1/2017 12/31	/2017	91								



## Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase Task Name	Start Date	End Date	Duration
Procurement	1/1/2018	7/30/2018	210
Project Execution	5/21/2018	3/25/2023	1769
Project Closeout	3/26/2023	5/24/2023	59



Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase To Be De	termined					Contro	act N/	Ą		Status	Future	Planned S <sup>.</sup>	tart
<b>Title</b> Future Co	ndition Ass	essment/R	ehab										
This is for the co	ondition as	sessment o	f DRI.										
Phase Budget	Wastewa	ter						Cost A	llocation	CTA			
Phase Status	Future Pla	nned Start			Funding Source Bond Proceeds								
Start Date	Start Date						Fund Construction Bond Fund						
End Date				U	seful Lif	e >20Yrs?	Yes						
С	Cost Estimation Information						Tot. Federal Loan Amount						\$0
	4	S		Program/Allowance Task Information									
		Cost	Est. Date	•	F	Project Man	nager	Mini Po	anicker				
Engineering		Cost	Est. Sour	ce	C	CIP Number	r						
Mini Panickei	ſ	Cost	Est. Prep	ared By	[	Description		Inspec	tion and re	ehabilitat	ion/rep	pair if nece	essary
Cost Ty	rpe	Fiscal Y	ear	Expens	е	Fringe Ber	nefitNor	nPerson	ne	Comr	nent		
Unknown		FY24		\$10	0,014				2021 CIF	)			
Unknown		FY25		\$9	9,986				2021 CIF	)			
			Phase 1	Total Exp	ense	s By FY (Al	l figure	es are i	n \$1,000's)				
Prior Yr Actual	FY20	FY21	FY22	FY2	23	FY24	FY	25	FY26+	Total	5-	Yr Total	
0	0	0		0	0	10,014		9,986	0	20,0	00	20,000	
Phase Task Da	tes												
Phase Task Nar	ne Start I	Date En	d Date	Duratio	on								
Project Executio	on 7/1	/2023 6	/30/2025	5	730								

GLWA Great Lakes Water Authority		Detroit Riv	GLWA FY 2 ver Intercep			uation c	ınd Rehal	oilitation	222002 CIP
Phase GLWA Employees I	Project manage	ment	Con	ract NA			Status Ac	tive	
Title GLWA Salaries									
Phase Budget Wastewa	ater			(	Cost Allo	ocation (	CTA		
Phase Status Active				F	unding	Source B	ond Procee	eds	
Start Date						Fund (	Constructior	Bond Fund	
End Date				Use	eful Life >	>20Yrs? Y	'es		
			т	ot. Federc	lloan A				\$0
	tion Information		1						40
5	Cost Est. C		D 1 144	-	am/Allo	wance T	ask Informa	tion	
	Cost Est. D	ate	Project Mo						
	Cost Est. S	ource	CIP Numb						
	Cost Est. P	repared By	Descriptio	n					
Cost Type	Fiscal Year	Expense	e Fringe Be	enefilNonF	ersonne	e	Comme	nt	
GLWA Salaries CIP2021	FY19-		\$32			2021 CIP			
GLWA Salaries CIP2021	FY20	4	\$121			2021 CIP			
GLWA Salaries CIP2021	FY21		\$121			2021 CIP			
GLWA Salaries CIP2021	FY22		\$121			2021 CIP			
GLWA Salaries CIP2021	FY23		\$108			2021 CIP			
	Pha	se Total Expe	enses By FY (A	Il figures	are in \$	\$1,000's)			
Prior Yr Actual FY20	FY21 FY	′22 FY2	3 FY24	FY25	5	FY26+	Total	5-Yr Total	
32 121	121	121	108 (	)	0	0	503	350	
Phase Task Dates									



222002 CIP#

Detroit River Interceptor (DRI) Evaluation and Rehabilitation

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	10,592	16,199	23,634	9,786	1,465	10,014	9,986	0	81,676	54,885
2020	0	0	2,647	9,424	10,000	10,000	10,000	1,000	1,000	5,000	0	49,071	32,000
2019	0	5	2,232	1,084	8,052	10,187	10,187	10,187	2,491	0	0	44,425	39,697
2018		321	10,000	5,000	5,000				0	0	0	20,321	20,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Funds increased due to anticipated DB-226 scope increase.

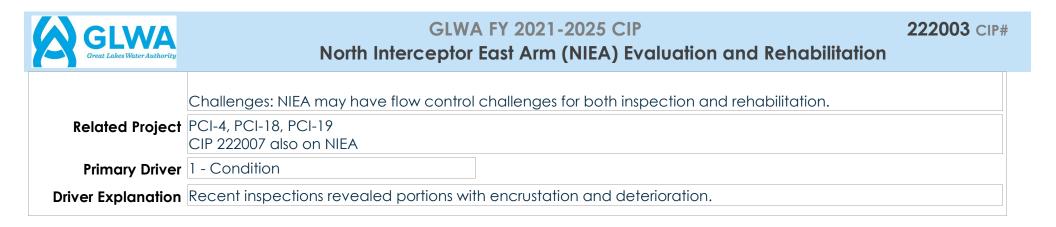
Changes



### 222003 CIP#

North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> <li>Reliability/Redundance</li> <li>NEWTP Repurposing</li> </ul>	Project Status Cancelled CIP Type Project Project New To CIP	Elevation profile of pa of the NIE	EA
Project Engineer/Manage	er Todd King	-	Wastewater Wastewater
	or Todd King		Field Services
Managing De	of Field Services		Interceptor
Date Original Business Co	ase Prepared 3/3/2017		Multiple Counties
Year Project A	Added to CIP 2016	Fund and Cost Center	Wastewater - 5421-892211
Scope of Work / Rev Project Alternatives the opt syst clea infilt	ch. The report also recommends 1500 existing conditions, develop a data g mize the design capacity of the colle em, and extend the service life, evalu aning/rehabilitation/replace to optimi ration into the collection system, and	ce life TH 2015) which recommends ad lineal feet of potential slip lining ap analysis and provide the nec ction system, minimize the inflow ate the existing conditions, and p ze the design capacity of the co to extend the service life.	ditional work along the 33,900 lineal feet . This SOW includes further evaluation of cessary cleaning/rehabilitation to and infiltration into the collection
Proj vari NIE/ insp atto tran eve	sportation capacity. Inspections of se	the GLWA interceptors and sewe structural deficiencies and sludg here were portions deteriorated me trunk sewer inspection also re wers to reveal the existing condi	ge deposits. Detroit River Interceptor





North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

Score		
73.2		
Criteria	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	2	
RC Weighted		
RC Weighted Score		
Score	Score	Comment
Score 65.4	Score 5	Comment
Score 65.4 Criteria Condition		Comment
Score 65.4 Criteria Condition Performance (Service Level/Reliability)	5	Comment
Score 65.4 Criteria Condition Performance (Service Level/Reliability) Regulatory (Environmental/Legal)	5 4	Comment
Score65.4CriteriaConditionPerformance (Service Level/Reliability)Regulatory (Environmental/Legal)Operations and Maintenance	5 4	Comment
Score 65.4 Criteria Condition Performance (Service Level/Reliability) Regulatory (Environmental/Legal) Operations and Maintenance Public Health and Safety	5 4 3 1	Comment
Score 65.4 Criteria	5 4 3 1 3 3 3	Comment



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

222003 CIP#

Phase To Be De	termined		Contract NA	Status Cancelled			
Title North Inte	rceptor East /	Arm (NIEA) Evaluation and	Rehabilitation				
Phase Budget	Wastewater		Cost Alloc	ation OMID			
Phase Status	Cancelled		Funding So	ource Contribution in Aid of Constru			
Start Date	•			Fund Construction Bond Fund			
End Date			Useful Life >20	OYrs? Yes			
С	ost Estimatior	n Information	Tot. Federal Loan Am	nount			
	5	Cost Est. Class	Program/Allowance Task Information				
		Cost Est. Date	Project Manager				
		Cost Est. Source	CIP Number				
		Cost Est. Prepared By	Description				

Phase Total Expenses By FY (All figures are in \$1,000's)

GLW Great Lakes Water.	<b>XA</b> Authority	North Interc	GLWA FY 2021-2025 CIP ceptor East Arm (NIEA) Evaluati		222003 CIP#
Phase Design			Contract TBD	Status Cancelled	
Title North Inter	rceptor East A	rm (NIEA) Evaluation and	Rehabilitation		
Phase Budget	Wastewater		Cost Allocation	n OMID	
Phase Status	Cancelled		Funding Source	e Contribution in Aid of Constr	Ü
Start Date			Fund	d Construction Bond Fund	
End Date			Useful Life >20Yrs	? Yes	
Co	ost Estimation	Information	Tot. Federal Loan Amour	ıt	
	5	Cost Est. Class	Program/Allowance	e Task Information	
		Cost Est. Date	Project Manager		
		Cost Est. Source	CIP Number		
		Cost Est. Prepared By	Description		

## Phase Total Expenses By FY (All figures are in \$1,000's)

Phase Budget Wastewater   Phase Status Cancelled   Start Date Funding Source   End Date Improvement & Extension   Cost Estimation Information Useful Life >20Yrs?   Source No   Cost Est. Class Program/Allowance Task Information   Source CiP Number   Cost Est. Prepared By Description	GLWA Emp GLWA Salari	ployees Proj ries	ject mai	nagement		Contrac	t na		<b>Status</b> Co	ancelled	
Start Date Fund   End Date Useful Life >20Yrs?   Cost Estimation Information Tot. Federal Loan Amount   5 Cost Est. Class   6 Cost Est. Date   7 Cost Est. Date   7 Cost Est. Source   7 Cost Est. Source	se Budget 🕅	Vastewater	<b>.</b>					Cost Allocation	OMID		
End Date       Useful Life >20Yrs?       No         Cost Estimation Information       Tot. Federal Loan Amount         5       Cost Est. Class       Program/Allowance Task Information         Cost Est. Date       Project Manager         Cost Est. Source       CIP Number	ase Status C	Cancelled						Funding Source	Contribution	n in Aid of Cons	tru
Cost Estimation Information       Tot. Federal Loan Amount         5       Cost Est. Class         Cost Est. Date       Project Manager         Cost Est. Source       CIP Number	Start Date							Fund	Improveme	nt & Extension F	un
Source     Program/Allowance Task Information       Cost Est. Class     Project Manager       Cost Est. Source     CIP Number	End Date						Use	eful Life >20Yrs?	No		
Cost Est. Date     Project Manager       Cost Est. Source     CIP Number					Tot. Federal Loan Amount				\$0		
Cost Est. Source     CIP Number		5	Cost	Est. Class			Prog	am/Allowance	Task Informa	ation	
	Cost Est. Date				Project Mana	ger					
Cost Est. Prepared By Description	Cost Est. Source			CIP Number							
			Cost	Est. Prepare	ed By	Description					
Phase Total Expenses By FY (All figures are in \$1,000's)				Phase Tot	al Expen	ses By FY (All fi	gures	are in \$1,000's	5)		
ior Yr Actua FY20 FY21 FY22 FY23 FY24 FY25 FY26+ Total 5-Yr Total	r Actual F	FY20	FY21	FY22	FY23	FY24	FY2	5 FY26+	Total	5-Yr Total	
0 0 0		0							0	0	

iase Study		Contract NA		Status Cancelled	
itle North Interceptor East	Arm (NIEA) Evaluation and I	Rehabilitation			
Phase Budget Wastewater			Cost Allocation	OMID	
Phase Status Cancelled			Funding Source	Contribution in Aid of Const	
Start Date			Fund	Improvement & Extension Fu	
End Date		Use	eful Life >20Yrs?	No	
Cost Estimation	n Information	Tot. Feder	al Loan Amount		
5	Cost Est. Class	ost Est. Class Program/Allowance			
	Cost Est. Date	Project Manager			
	Cost Est. Source	CIP Number			
	Cost Est. Prepared By	Description			



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0		0							0	0
2020	0	0		500	15,000	14,500	0	0	0	0	0	30,000	29,500
2019	0					11,000	12,000	3,000		0	0	26,000	26,000
2018			11,000	12,000	3,000				0	0	0	26,000	26,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Project Cancelled

Changes



Sewer System Infrastructure and Pumping Stations Improvements

<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> <li>Reliability/Redundanc</li> <li>NEWTP Repurposing</li> </ul>	Project Status Active CIP Type Program Project New To CIP	Example of a Valv Remote at Conn Pump Stati	er
		Budget	Wastewater
Project Engineer/Manage		Class Lvl 1	Wastewater
	r Biren Saparia	Class Lvl 2	Field Services
Managing Dep		Class LvI 3	Interceptor
Date Original Business Ca	•	Location	Multiple Counties
Year Project A	dded to CIP 2017	Fund and Cost Center	Wastewater - 5421-892211
the u life e Scope of Work / Eval	Gates, ISDs, and backwater gates are oper untreated overflows and maximizing the flo expectancy and needs rehabilitation. Uate the existing conditions of the VR-Gate essary design and the Construction Assistan	ows to the WRRF and CSO o es, ISDs, Backwater Gates o	control facilities. They have reached their and Access Hatches, provide the
Proje cove gate throu Thes pern	gle map of VR-3 and VR-9 are included. Vi ect History: GLWA interceptors and sewers ers secure operations and maintenance ac es, ISD, and VR. The backwater gates, ISD, ughout the system. Most of them have read e structures play vital roles in controlling th nits.	were constructed in the ed ccess points throughout the and VR are all critical elem ched their life expectancy he flow, increasing the store	arly 1900s. The hatches and access e system for items such as the backwater nents that control and divert flows and are hard to operate properly. age capacity, and in meeting the NPDES
Related Project SCP-	-	,	<u> </u>
Primary Driver 1 - C			
-	e structures have reached their life expect	anal and some of the one	arating to chool any is outdated



Sewer System Infrastructure and Pumping Stations Improvements

PM Weighted Score 72.6		
Criteria	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	4	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	
RC Weighted Score 68.2		
Criteria	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	5	
Public Health and Safety	3	
Public Benefit	2	
Financial	3	



222004 CIP#

Sewer System Infrastructure and Pumping Stations Improvements

Phase Construc	tion						Contro	ict NA	4		Status Fu	ture Planned S
Title Backwate	er Gates, In	-Syste	ms Sto	rage De	evices, Re	egula	tors, and Vo	alve Re	motes l	Rehabilita	Ition	
Phase Budget	Wastewa	ter				Cost Allocation CTA						
Phase Status	Future Plc	nned	Start			Funding Source Bond Proceeds						
Start Date		1/1/2019				Fund Construction Bond Func						n Bond Fund
End Date	6/30/2020			20	Useful Life >20Yrs? Yes							
C	ost Estimat	ion In	format	ion			To	l. Fede	ral Loar	n Amount		
	2 Cost Est. Class				5	Program/Allowance Task Information						
8	8/31/2017 Cost Est. Date				1	Project Man	ager	Mini Pc	nicker			
Contractor	Contractor Cost Est. Source			ce	(	CIP Number	,					
Biren Saparia Cost Est. Prepa			ared By	I	Description					ilitation of the Ds, Regulators,		
Cost Ty	'ne	Fis	cal Ye	ar	Expens	e	Fringe Ben	efitNor		ne	Comme	ent
Construction	20	FY22				\$1,605		2021CIF				
Construction		FY23	3		\$11	\$11,122 2021CIP			Р			
Construction		FY24	1		\$3	\$3,543 2021CIP						
Construction		FY25	5		\$1	1,230				2021CI	Р	
				Phase T	otal Exp	ense	s By FY (All	figure	s are ir	ר\$1 <i>,</i> 000's ו	; <b>)</b>	
Prior Yr Actual	FY20	FY2	21	FY22	FY2	23	FY24	FY	25	FY26+	Total	5-Yr Total
0	0		0	1,60	05 11	,122	3,543		1,230	C	17,500	17,500
Phase Task Da	tes											
Phase Task Nar		Date	End	Date	Duratio	on						
Procurement	4/	1/2021	9/2	27/2021		179						

1009

Project Execution 9/28/2021 7/3/2024 App B - Page 236

GLWA FY 2021-2025 CIP Sewer System Infrastructure and Pumping Stations Improv	222004 CIP# /ements
Phase Task Name Start Date End Date Duration	
Project Closeout 7/4/2024 9/1/2024 59	
Phase To Be Determined     Contract TBD     Status     Future PI	lanned Start
Title         Future Conveyance System infrastructure Improvements	
For next version of Req/Contract 1803709 plus assoicated construction	
Phase Budget   Wastewater   Cost Allocation   CTA	
Phase Status         Future Planned Start         Funding Source         Bond Proceeds	
Start Date Fund Construction Bond	d Fund
End Date     Useful Life >20Yrs?	
Cost Estimation Information Tot. Federal Loan Amount	\$0
Cost Est. Class Program/Allowance Task Information	
Cost Est. Date         Project Manager         Mini Panicker	
Cost Est. Source CIP Number	
Cost Est. Prepared By       Description         For the future improvement needs infrastructure elements	; of the
Cost Type Fiscal Year Expense Fringe BenefilNonPersonne Comment	
Unknown FY24 \$1,002 2021CIP	
Unknown FY25 \$999 2021CIP	
Unknown FY26+ \$999 2021CIP	
Phase Total Expenses By FY (All figures are in \$1,000's)	
Prior Yr Actual FY20 FY21 FY22 FY23 FY24 FY25 FY26+ Total 5-Yr	′r Total
0 0 0 0 0 0 1,002 999 999 3,000	2,001
Phase Task Dates	
Phase Task Name Start Date End Date Duration	
Project Execution 7/1/2023 6/30/2026 1095	

GLWA Great Lakes Water Authority	Se	wer Syster		WA FY 2021- frastructure		ping St	tations Im	provemen	222004 CI
hase Study and Design a	and Constructior	n Assistance		Contract	1803709		<b>Status</b> Un	ider Procuren	nent
le Conveyance System	n InfrastructureIn	nprovements	5						
This contract is to provide the GLWA Conveyance throughout the system, re gates and remote gate o	System Sewers. Nehabilitation/ rep	Work will inclu placement of	ude re inflat	ehabilitation/ re table storage d	placement ams, rehabil	of cham	iber hatche	s and access	covers
Phase Budget Wastewa	iter				Cost Allo	ocation	CTA		
Phase Status Under Pro	ocurement				Funding	Source	Bond Proce	eds	
Start Date						Fund	Constructio	n Bond Fund	
End Date					Useful Life >	L			
Cost Estima	tion Information			Tot. Fe	deral Loan A	Amount			
4	Class		F	Program/Allo	wance	ask Inform	ation		
8/31/2017	Cost Est. D	ate	I	Project Manage	er Mini Pani	icker			
Engineering	Cost Est. S	ource	ce CIP Number						
Biren Saparia	Cost Est. P	repared By	I	Description	access c provide 1	covers, IS the nece e set of 3	D, outfall ge essary desin	ement of hate ates and VR g g and prepar construction	gates,
Cost Type	Fiscal Year	Expense		Fringe Benefill	NonPersonne		Comme	ent	
ngineering Services	FY20		,373			2021CIF			
ngineering Services	FY21 FY22		,946 \$408			2021 CIF 2021 CIF			
ngineering Services	FY23		\$390			2021CIF			
gineering Services	FY24		\$391			2021 CII			
ngineering Services	FY25		\$67			2021 CIF			
	Pha	se Total Exp	ense	s By FY (All fig	ures are in S	51,000's	)		
rior Yr Actual Page 330		′22 FY2		FY24		FY26+	Total	5-Yr Total	



## Sewer System Infrastructure and Pumping Stations Improvements

Pł	hase Task Name	Start Date	End Date	Duration
Pro	ocurement	10/1/2018	9/30/2019	364
Pro	oject Execution	10/1/2019	9/1/2024	1797

GLAN GLAN			Sewe	r Syster		WA FY 2021 frastructure			ina Sta	ations Im	provements	222004 c
Phase To Be Det	ermined			l by sici		Contract		Tomp		Status Ac		
Title Pumping S	tation Allo <sup>,</sup>	wances										
This is to be used	d for sewer	pumping	station in	nprovem	ents							
Phase Budget	Wastewat	er			Cost Allocation CTA							
Phase Status	Phase Status Active				Funding Source Bond Proceeds							
Start Date	Start Date								Fund C	onstructior	n Bond Fund	
End Date						Usefu	ul Life >2	OYrs? Ye	es			
Co	Cost Estimation Information					Tot. F	ederal I	Loan An	nount			\$0
	5	Cost	Est. Class	;			Program	n/Allow	ance To	ısk Informa	ition	
	8/6/2019	Cost	ost Est. Date			Project Manager Mini Panicker			ker			
Engineers		Cost	Est. Sourc									
Biren Saparia		Cost	Est. Prepo	ared By	<b>Description</b> This is to be used for sewer pumping s improvements					umping station		
Cost Ty	се	Fiscal Y	ear	Expense	Ð	Fringe Benefi	INonPe	rsonne		Comme	nt	
Unknown		FY21			\$669			2	021CIP			
Unknown		FY22		0	\$971			2	021CIP			
Unknown		FY23			\$971			2	021CIP			
Unknown		FY24			\$974				021CIP			
Unknown		FY25			\$962				021CIP			
Unknown		FY26+	DI		\$953				021CIP			
				-		s By FY (All fig			-			
Prior Yr Actua	FY20	FY21	FY22	FY2		FY24	FY25		26+	Total	5-Yr Total	
0	0	669	97		971	974	9	262	953	5,500	4,547	
Phase Task Dat	es											
Phase Task Nam	ne Start D	Date En	d Date	Duratic	on							
App B - Pa	ge 240											



222004 CIP#

Sewer System Infrastructure and Pumping Stations Improvements

hase GLWAE itle GLWASa		roject man	agement		Contract	NA		Status Ac	ctive		
Phase Budge	t Wastewat	er				Cost All	ocation (	CTA			
Phase Statu	s Active					Funding	Source E	Bond Proce	eds		
Start Date	9				Fund Construction Bond Fund						
End Date	End Date				Useful Life >20Yrs? No						
C	Cost Estimati	ion Informa	tion		Tot. Federal Loan Amount						
	5	Cost I	Est. Class			Program/Allo	owance T	ask Informa	ation		
		Cost I	Est. Date	F	Project Manag	jer					
	Cost Est. Source			CIP Number							
		Cost I	Est. Prepare	ed By	Description						
Cost T		Fiscal Ye	or [		Fringe Benefi	NonPersonn		Comme	ant		
		FY19-		•	rninge benen	20210			/111		
JWA Salaries				54			2021 CIP				
		FY20		\$4 \$86			2021 CIP 2021 CIP				
GLWA Salaries	CIP2021	FY20 FY21		•							
GLWA Salaries GLWA Salaries	CIP2021 CIP2021			\$86			2021 CIP				
GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021	FY21		\$86 \$86			2021CIP 2021CIP				
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	FY21 FY22		\$86 \$86 \$112			2021 CIP 2021 CIP 2021 CIP				
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	FY21 FY22 FY23		\$86 \$86 \$112 \$121			2021CIP 2021CIP 2021CIP 2021CIP				
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	FY21 FY22 FY23 FY24 FY25	Phase Tot	\$86 \$86 \$112 \$121 \$120 \$21	s By FY (All fig	gures are in	2021CIP 2021CIP 2021CIP 2021CIP 2021CIP 2021CIP 2021CIP				
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	FY21 FY22 FY23 FY24 FY25	Phase Tot FY22	\$86 \$86 \$112 \$121 \$120 \$21	s By FY (All fig FY24	gures are in FY25	2021CIP 2021CIP 2021CIP 2021CIP 2021CIP 2021CIP 2021CIP		5-Yr Total		



222004 CIP#

## Sewer System Infrastructure and Pumping Stations Improvements

Phase To Be Determined			Contro	act TBD		ļ	Status Fut	ture Planned S	Start
Title Regulator Expansion	IS								
This phase was added by	Wastewater Mc	aster Plan							
Phase Budget Wastewat	er		Cost Allocation CTA						
Phase Status Future Pla	nned Start		Funding Source Bond Proceeds						
Start Date			Fund Construction Bond Fund						
End Date				Use	ful Life	e >20Yrs? Ye	es		
Cost Estimat	on Information		То	t. Federc	ıl Loan	Amount			\$0
2	Cost Est. C	Class		Progr	am/All	lowance Ta	ısk Informo	ation	
7/1/2019	Cost Est. D	ate	Project Mar	nager N	Aini Pai	nicker			
Wastewater Master Plar	Cost Est. S	ource	CIP Number						
Carl Johnson- CDM Smi	th Cost Est. P	repared By	Added by Wastewater Maste Plan consult CDM Smith					ants-	
Cost Type	Fiscal Year	Expense	e Fringe BenefilNonPersonne Com				Comme	nt	
Unknown	FY22	\$2,	337			2021 CIP	CIP		
Unknown	FY23	\$3,	830			2021 CIP	IP		
Unknown	FY24	\$3,	834			2021 CIP			
	Pha	se Total Expe	enses By FY (Al	l figures	are in	\$1,000's)			
Prior Yr Actual FY20	FY21 FY	′22 FY23	3 FY24	FY25	5	FY26+	Total	5-Yr Total	
0 0	0	2,337 3,	830 3,834		0	0	10,001	10,001	
Phase Task Dates									
Phase Task Name Start I	Date End Da <sup>.</sup>	te Duration	n						
Project Execution 7/1	/2021 6/30/2	2024 10							



Sewer System Infrastructure and Pumping Stations Improvements

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	4	1,459	2,701	5,433	16,434	9,864	3,279	1,952	41,126	37,711
2020	0	0		1,019	3,500	3,514	6,000	5,000	8,000	60,000	0	87,033	26,014
2019	0		341	1,019	1,014					0	0	2,374	2,033
2018			341	1,000	1,422				0	0	0	2,763	2,763

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP Title Changed to "Sewer System Infrastructure and Pumping Stations Improvements"

Changes Made this a program

Added a new phase as per Wastewater Master Plan's request

Added a new phase for the sewer pumping stations



NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

<ul> <li>Innovation</li> <li>Conceptual WW</li> <li>Water MP Right S</li> <li>Reliability/Redun</li> <li>NEWTP Repurposition</li> </ul>	izing Idancy	Project Status Cancelled CIP Type Project Project New To CIP	Example inspection of large sev	
	ing .		Budget	Wastewater
Project Engineer/Ma	<b>nager</b> To	dd King	Class Lvl 1	Wastewater
Di	irector To	dd King	Class Lvl 2	Field Services
Managing	<b>g Dept</b> Fie	eld Services	Class LvI 3	Interceptor
Date Original Busine		•	Location	City of Detroit
Year Proj	ject Adde	d to CIP 2017	Fund and Cost Center	Wastewater - 5421-892211
	r kenapili	ation and replacement program	n of the existing NIEA based upor	n structural deficiencies identified from
Scope of Work /	the eval to increa Prelimina rehabilit	uation results. This is essential to a use its life expectancy. ary Scope of Work of the Project i	s as follows: Review available do n and implement them to optim	acity of the GLWA collection system and ata, provide the necessary ize the design capacity of the collection
Scope of Work / Project Alternatives	the eval to increa Prelimina rehability system, r *Innovat GLWA in NIEA insp Recent I deteriora also reve conditio reveal fu	uation results. This is essential to a use its life expectancy. any Scope of Work of the Project i ation/replacement option, desig minimize the inflow and infiltration ion note: Consider new technique terceptors and sewers are dated bection upstream of this segment Detroit River Interceptor and Nort ated with visible surface aggrego ealed sludge deposition with reducts are necessary and shall be do wither need for cleaning, rehabilit	s as follows: Review available do n and implement them to optim n into the collection system, and bes for assessment. Other Import t back to 1912 under various cor t by NTH recently revealed struct th West Interceptor inspections re ates, attached encrustation and uced transportation capacity. In ne every 5 to 7 years. Recommendation ration or replacement	acity of the GLWA collection system and ata, provide the necessary ize the design capacity of the collection extend the service life. ant Info: The installation of some of the ntracts. tural deficiencies and sludge deposits. evealed that there were portions infiltration. Some trunk sewer inspection spections of sewers to reveal the existing endations from these inspections may
Scope of Work / Project Alternatives Other Important Info	the eval to increa Prelimina system, r *Innovat GLWA in NIEA insp Recent I deteriora also reve conditio reveal fu	uation results. This is essential to a use its life expectancy. any Scope of Work of the Project i ation/replacement option, desig ninimize the inflow and infiltration ion note: Consider new technique terceptors and sewers are dated bection upstream of this segment Detroit River Interceptor and Nort ated with visible surface aggrego ealed sludge deposition with reducts are necessary and shall be do	s as follows: Review available do n and implement them to optim n into the collection system, and bes for assessment. Other Import t back to 1912 under various cor t by NTH recently revealed struct th West Interceptor inspections re ates, attached encrustation and uced transportation capacity. In ne every 5 to 7 years. Recommendation ration or replacement	acity of the GLWA collection system and ata, provide the necessary ize the design capacity of the collection extend the service life. ant Info: The installation of some of the ntracts. tural deficiencies and sludge deposits. evealed that there were portions infiltration. Some trunk sewer inspection spections of sewers to reveal the existing endations from these inspections may



NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

PM Weighted Score		
69.8		
Criteria	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	3	
Operations and Maintenance	4	
Public Health and Safety	3	
Public Benefit	2	
Financial	4	
Efficiency and Innovation	4	

**RC Weighted** 

Score

### 72.8

Criteria	Score	Comment
Regulatory (Environmental/Legal)	4	
Condition	4	
Public Health and Safety	4	
Performance (Service Level/Reliability)	4	
Financial	4	
Efficiency and Innovation	3	
Public Benefit	2	
Operations and Maintenance	3	



NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

<b>Phase</b> GLWA En <b>Title</b> GLWA Salo		roject mai	nagement		Contro	act NA		Status C	Cancelled	
Phase Budget	Wastewat	er				Cos	Allocation	CTA		
Phase Status	Cancelled	b			Funding Source Bond Proceeds					
Start Date							Fund	Constructio	on Bond Fund	
End Date	End Date					Useful	Life >20Yrs?	No		
C	Cost Estimation Information					t. Federal Lo	an Amount			<b>\$</b> 0
	5 Cost Est. Class					Program/	Allowance	Task Inform	nation	
		Cost	Est. Date		Project Mar	nager				
		Cost	Est. Source		CIP Numbe	r				
		Cost	Est. Prepare	ed By	Description					
			Phase Tot	al Exper	nses By FY (Al	l figures are	in \$1,000's	)		
Prior Yr Actual	FY20 0	FY21	FY22	FY23	FY24	FY25	FY26+	Total (	5-Yr Total 0 0	
Phase Task Da	les									

GLW Great Lakes Water.	Authority	NIEA Rehab	GLWA FY 2021-2025 CIP Dilitation from WRRF to Gratiot	Ave. and Sylvester St.	222007 CIP#
Phase Construct	tion		Contract NA	Status Cancelled	
Title NIEA Evalu	uation and Re	habilitation from WRRF to (	Gratiot Ave. and Sylvester St.		
Phase Budget	Wastewater		Cost Allocatio	n CTA	
Phase Status	Cancelled		Funding Sourc	e Bond Proceeds	
Start Date		1/2/2019	Fun	d Construction Bond Fund	
End Date		6/30/2021	Useful Life >20Yrs	? Yes	
Co	ost Estimation	Information	Tot. Federal Loan Amou	nt	
	5	Cost Est. Class	Program/Allowanc	e Task Information	
		Cost Est. Date	Project Manager		
		Cost Est. Source	CIP Number		
		Cost Est. Prepared By	Description		

### Phase Total Expenses By FY (All figures are in \$1,000's)

|--|

NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

222007 CIP#

<b>Phase</b> Design			Contract	٨A	Status	Cancelled
<b>iitle</b> NIEA Evalu	vation and R	ehabilitation from WRRF to	Gratiot Ave. and Sylv	ester St.		
Phase Budget	Wastewate	r				
Phase Status	Cancelled			Funding Source	Bond Pr	oceeds
Start Date		7/1/2018		Fund	Constru	ction Bond Fund
End Date		12/30/2020		Useful Life >20Yrs?	Yes	
Co	ost Estimatio	n Information	Tot. Fed	eral Loan Amount		
	5	Cost Est. Class	Pro	ogram/Allowance	Task Info	ormation
		Cost Est. Date	Project Manager			
		Cost Est. Source	CIP Number			
		Cost Est. Prepared By	Description			
		Phase Total Exp	enses By FY (All figu	res are in \$1,000's	)	

GLW Great Lakes Water	<b>Authority</b>		GLWA FY 2021-2025 CIP Dilitation from WRRF to Gratiot A	ve. and Sylvester St.	222007 CIP#
Phase not appli	cable		Contract NA	Status Closed Out	
Title Prior Year	Actual Expens	es			
Phase Budget	Wastewater		Cost Allocation	CTA	
Phase Status	Closed Out		Funding Source		
Start Date			Fund		
End Date			Useful Life >20Yrs?		
Co	ost Estimation	Information	Tot. Federal Loan Amount		\$O
	1	Cost Est. Class	Program/Allowance	Task Information	
		Cost Est. Date	Project Manager		
		Cost Est. Source	CIP Number		
		Cost Est. Prepared By	Description		
		Phase Total Expe	enses By FY (All figures are in \$1,000's	)	
Phase Task Da	tes				



#### NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0		0							0	0
2020	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	0			4	760	3,295	5,689	5,689	5,566	0	0	21,003	15,437
2018			7,000	7,000	7,000				0	0	0	21,000	21,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP Changes** This project was included in the CIP previously to account for anticipated rehabilitation work needed as a result of the condition assessment. The projected expenditures at that time were based upon the needed rehabilitation of the stretch from Gratiot/Sylvester to NIEA pump station. Recent condition assessment of this interceptor stretch indicate the interceptor is in better condition than previously anticipated and therefore, the project is cancelled and removed from the CIP.



### GLWA FY 2021-2025 CIP Fairview Pumping Station - Replace Four Sanitary Pumps

<ul> <li>Innovation</li> <li>Conceptual WW M</li> <li>Water MP Right Sizi</li> <li>Reliability/Redundation</li> <li>NEWTP Repurposing</li> </ul>	ng ancy Project New To CIP	Sanitary pumps at Fairview Pumping				
		Budget Wastewater				
Project Engineer/Man	-	Class Lvl 1 Wastewater				
	ector Grant Gartrell	Class Lvl 2 Systems Control Center				
Managing	Dept Water Eng	Class Lvl 3 Pump Stations				
Date Original Business	Case Prepared 3/9/2011	Location City of Detroit				
Year Proje	ct Added to CIP 2011	Fund and Cost Center Wastewater - 5421-892211				
	Replacement and upgrade of pumping equipment's to improve transportation of waste water to the treatment plant					
Project Alternatives	The scope of work consists of the study, design, and construction for four new pumping systems including inlet and discharge valves and wet well hydraulics. This will also include enlarging doorways, revamping roadways, and upgrading electrical and control systems.					
Other Important Info	Challenges: N/A - Active					
-	Wastewater Master Plan and ongoing discussions between GLWA and MDEQ regarding wet weather operational procedures.					
Primary Driver	1 - Condition					
Driver Explanation	N/A - Active					



## PM Weighted

Score

72.8

Criteria	Score	Comment
Regulatory (Environmental/Legal)	4	
Performance (Service Level/Reliability)	4	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	4	
Condition	4	

## **RC Weighted**

Score

Criteria	Score	Comment
Performance (Service Level/Reliability)		
Operations and Maintenance		
Public Benefit		
Efficiency and Innovation		
Condition		
Public Health and Safety		
Financial		
Regulatory (Environmental/Legal)		



Fairview Pumping Station - Replace Four Sanitary Pumps

Phase Constructio	n				Contro	act	CON-297	,	Status	Act	ive	
Title Fairview Pum	nping Station	- Replace F	our Sanita	ry Pum	ps							
Now CS-201?												
Phase Budget W	astewater						Cost /	Allocation	CTA			
Phase Status Ac	ctive						Fundiı	ng Source	Bond Pro	cee	eds	
Start Date					Fund Construction Bond Fund							
End Date					Useful Life >20Yrs? Yes							
Cost	Estimation In	formation			То	t. Fe	deral Loa	n Amount				
	4	Cost Est. C	lass			Ρ	rogram/A	llowance	Task Info	rma	tion	
		Cost Est. D	ate		Project Man	nage	er					
consultant		Cost Est. So	ource		CIP Number	r						
Consultant Brow	up & Caldwa				Description							
Consoliditi Brow	IT & Culuwe	COSI ESI. II	epuled by									
Cost Type	e Fi	scal Year	Exper	nse	Fringe Ber	nefith	NonPersor	nne	Com	mer	nt	
Construction	FY1	9-		\$1,486				2021C	IP			
Construction	FY2	)	\$2	24,822				2021C	IP			
Construction	FY2			\$2,673				2021C	IP			
		Phas	e Total Ex	pense	s By FY (Al	l figu	Jres are i	n \$1,000's	s)			
Prior Yr Actual F	Y20 FY2	21 FY	22 F`	Y23	FY24		FY25	FY26+	Total	I	5-Yr Total	
1,486	24,822	2,673	0	0	0		0	(	28,9	981	2,673	
Phase Task Dates	5											
Phase Task Name	Start Date	End Dat	e Dura	tion								
Pre-Procurement	4/25/201	6 6/1/2	018	767								
Procurement	6/2/201	8 9/1/2	018	91								
Project Execution	1/1/201	9 10/1/2	020	639								
Project Closeout App B - Page	10/2/202	0 1/1/2	021	91								

	<b>GLW</b> Freat Lakes Water Author	<b>A</b> writy			Fai	-	LWA FY 2 umping S				ır Sanitary	Pumps	232001 CIP#
Phase D	esign & Co	onstructi	on Assi	istance			Con	ract C	S-1747		Status Ac	tive	
Title CS	-1747 Fairv	view Pun	nping S	Station - F	Replac	e Four Sa	nitary Pump	S					
				d constru	ction s	services ar	nd RPR that	was del			1		
Phase	Budget W	astewat	er						Cost A	llocation	CTA		
Phase	e Status Ac	ctive							Fundin	ng Source	Bond Proce	əds	
Sto	art Date			7/5	/2016					Fund	Constructior	n Bond Fund	
En	nd Date			10/5	/2021			U	seful Life	e >20Yrs?	Yes		
	Cost	Estimati	on Info	ormation			Т	ot. Fede	eral Loai	n Amount			
		3	C	Cost Est. C	Class			Pro	gram/A	llowance	Task Informa	ition	
			C	Cost Est. D	ate		Project Mo	nager					
consu	ultant		C	Cost Est. S	ource		CIP Numb	er					
	ultant Brow	/n & Cal	dwe C	Cost Est. P	repare	ed By	Descriptio	ı					
					-	-							
	Cost Type	•	Fisc	al Year	E	xpense	Fringe Be	nefilNo	nPerson	ine	Comme	nt	
-	ring Servic		FY19-			\$1,09				2021CI			
-	ring Servic		FY20			\$2,60				2021CI			
-	ring Servic		FY21			\$2,60				2021CI			
Engineer	ring Servic	es	FY22			\$98 <sup>,</sup>				2021CI			
				Pha	se Tot	al Expens	es By FY (A	Il figure	es are il	n \$1,000's	)		T
Prior Yr A		Y20	FY21		′22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
1	1,096	2,609	2,6	602	984	(	) (	)	0	С	7,291	3,586	
Phase To	ask Dates	5											
Phase To	ask Name	Start D	Date	End Da	te I	Duration							
Pre-Proc	curement		2/2015	11/22/2	2015	123	6						
Procurer			/2015	4/24/2		153	-						
Project E	Execution		6/2016	11/15/2	2021	2030							

GLV Great Lakes Water	r Authority			Fairvie		NA FY 202 nping Sta				r Sanitary	Pumps	232001
<b>hase</b> GLWA Er	nployees f	Project mar	nagem	ent		Contra	ct NA			Status Act	tive	
tle GLWA Sal	aries											
Phase Budget	Wastewa	iter						Cost A	llocation	CTA		
Phase Status	Active					Funding Source Bond Proceeds					eds	
Start Date	•								Fund	Construction	Bond Fund	
End Date	•						Us	eful Life	e >20Yrs?	No		
C	ost Estima	tion Informa	ntion		1	Tot	. Feder	al Loar	Amount			\$0
	5		Est. Clo	0.66			Prog	ram/Al	lowance	Task Informa	tion	•
	5		Est. Da		F	Project Mana	-		lowunce			
						CIP Number	uge.					
			Est. So			Description						
		Cost	Est. Pre	epared By		Description						
Cost Ty	/pe	Fiscal Y	ear	Expens	se	Fringe Bene	efitNon	Person	ne	Commei	nt	
SLWA Salaries (	CIP2021	FY19-			\$43				2021 CII	Ρ		
GLWA Salaries (	CIP2021	FY20			\$121				2021 CII	Р		
GLWA Salaries (	CIP2021	FY21			\$61				2021 CII	P		
			Phase	e Total Exp	pense	s By FY (All	figure	s are ir	n \$1,000's	)		
rior Yr Actual	FY20	FY21	FY2	2 FY	23	FY24	FY2	25	FY26+	Total	5-Yr Total	
43	121	61		0	0	0		0	0	225	61	

GLWA Great Lakes Water Author	<b>A</b> prity		Fa		GLWA FY 2 Pumping S				r Sanitary	/ Pumps	232001 CIP#
Phase not applica					Con	tract	A		Status CI	losed Out	
Title Prior Year Ac	tual Exp	enses									
Phase Budget W	astewat	er					Cost /	Allocation	CTA		
Phase Status Cl	Status Closed Out Funding Source										
Start Date								Fund			
End Date							Useful Lif	fe >20Yrs?	No		
Cost	Estimati	on Informa	tion			Tot. Fed	eral Loa	n Amount			
	1	Cost I	Est. Class			Pr	ogram/A	Allowance 1	ask Inform	ation	
		Cost I	Est. Date		Project M	anager					
		Cost I	Est. Source		CIP Numb	per					
		Cost I	Est. Prepare	ed By	Descriptio	on					
Cost Type	;	Fiscal Ye	ear E		Fringe B	enefilN	onPersor	nne	Comme	ent	
n/a		FY19-		\$7	79			2021 CIF	)		
			Phase Tot	al Exper	nses By FY (	All figu	res are i	in \$1,000's)	)		
Prior Yr Actual F	Y20	FY21	FY22	FY23	FY24	F	Y25	FY26+	Total	5-Yr Total	
779	0	0	0		0	0	0	0	779	0	
Phase Task Dates	5										



## Fairview Pumping Station - Replace Four Sanitary Pumps

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	3,404	27,552	5,336	984	0	0	0	0	37,276	6,320
2020	0	0	1,551	6,000	18,000	4,891	0	0	0	0	0	30,442	22,891
2019	0	778	508	12,094	14,414	3,974				0	0	31,768	30,482
2018	128	472	2,100	14,350	15,350				0	0	0	32,400	31,800

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



# GLWA FY 2021-2025 CIP Freud & Conner Creek Pump Station Improvements

<ul><li>Innovation</li><li>Conceptual WW MP</li></ul>	Project Status Active	Freud Pump Stati	on
<ul> <li>Water MP Right Sizing</li> <li>Reliability/Redundand</li> <li>NEWTP Repurposing</li> </ul>	Project New To CIP		
		-	Wastewater
Project Engineer/Manage			Wastewater
	or Biren Saparia		Systems Control Center
Managing De	•		Pump Stations
-	ase Prepared 10/12/2016		City of Detroit
fear Project /	Added to CIP 2016	Fund and Cost Center	Wastewater - 5421-892211
pur inte	e primary objective of this project is to st mping stations and develop design, and erconnected piping and operation betw atment Basin.	d build an operational strategy	to optimize the utilization of
pur inte Trec Scope of Work / Project Alternatives Trec the	mping stations and develop design, and erconnected piping and operation betw atment Basin. vide basis of design, and final design fo ing and operation between Connor Cr atment Basin. Provide construction of th emerging project.	d build an operational strategy ween both pumping stations ar or an operational strategy to op eek and Freud pumping station he emerging project and const	to optimize the utilization of ad the Connor Creek Retention and otimize the utilization of interconnected as and the Connor Creek Retention and ruction assistance during construction of
Scope of Work / Project Alternatives Other Important Info Proj eac mol cap cho	mping stations and develop design, and erconnected piping and operation betw atment Basin. vide basis of design, and final design for ing and operation between Connor Cr atment Basin. Provide construction of the emerging project. allenges: Meeting the collection system ject History: The Connor Creek Pump Sta ch with a rated capacity of 500 cubic for re pumps of the same capacity. The pumps of the same capacity. The pumps annel siphon to maintain a water seal, w nt into operation in November 2005, the watered. Therefore, the vacuum priming	d build an operational strategy ween both pumping stations ar or an operational strategy to op- eek and Freud pumping station he emerging project and constr transport capacity during the ation (CCPS) was originally buil eet per second (cfs). The CCPS ump station currently has a toto ed using a vacuum system that which allows the pumps to be p e discharge channel for the CC g system cannot prime the pun	to optimize the utilization of and the Connor Creek Retention and otimize the utilization of interconnected as and the Connor Creek Retention and ruction assistance during construction of construction. t in 1928 with four storm water pumps, was expanded in 1940 adding four al capacity of 4,000 cfs and a firm relies on the flooding of the discharge primed. Since the Conner Creek CSO RTB



#### Freud & Conner Creek Pump Station Improvements

capacity. Two additional pumps were subsequently installed for dewatering and to act as sanitary pumps during dry weather flows. These two pumps are rated at 35 cfs and 20 cfs and are not operated when the storm water pumps are in service. Under the current operating protocol, the FPS is operated first and results in water flowing to the discharge channel of the CCPS, providing sufficient water to ensure submergence of the vacuum siphon block to allow the vacuum system to prime the CCPS pumps.
 The FPS pumps do not require priming during normal operations. The discharge pipe from each pump is tied to three 14' x 14' box conduits which transport flow to the CC RTB. The crown elevation of these conduits is approximately 95' and the lowest ground elevation along these conduits ranges from 96' to 100'. Surcharging and flooding have been reported when the CC RTB is filled to the overflow elevation of 98' and more than three of the FPS storm water pumps are in operation.
 Related Project CS-120 Freud and Connor Creek PS Improvements, CON-109, PO #s 3783,3784,3785,&3786
 Primary Driver 2 - Performance
 Driver Explanation During peak wet weather there is a potential for the sewers to surcharge and flood the street.



PM Weighted Score		
75.8		
Criteria	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	3	
Public Health and Safety	3	
Public Benefit	4	
Financial	2	
Efficiency and Innovation	2	

RC Weighted Score

70 /

79.6

Criteria	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	3	
Public Health and Safety	4	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	1	
Financial	5 5 1	



Freud & Conner Creek Pump Station Improvements

Phase Study and Design of <b>Freud &amp; Cor</b>			proven	<b>Contract</b> nents	CS-120		<b>Status</b> Ac	tive	
Phase Budget Wastewa	ter				Cost A	llocation C	TA		
Phase Status Active			Funding Source Revenue Financed Capit						
Start Date	6/7	/2017	Fund Improvement & Extension						
End Date	8/15	/2022	Useful Life >20Yrs? No						
Cost Estima	ion Information		Tot. Federal Loan Amount						
4	4 Cost Est. Class				rogram/Al	llowance Tc	ısk Informa	ition	
8/31/2017	Cost Est. D	ate	P	Project Manage	r Mini Pc	nicker			
Engineering									
Biren Saparia Cost Type	Biren Saparia Cost Est. Prepare				Conno station: operat of inter betwee	r Creek and s and devel ional strated connected en both pur r Creek Ret	d Freud sew lop design, gy to optim I piping and mping stati	performance vage pumping , and build an nize the utiliza d operation ions and the d Treatment Bo	g i tion
Engineering Services	FY19-	\$	1,046			2021 CIP			
Engineering Services Engineering Services	FY20 FY21		6,406 6,388			2021 CIP 2021 CIP			
	Pha	se Total Exp	ense	s By FY (All figu	res are ir	n \$1,000's)			
Prior Yr Actual FY20	FY21 FY	'22 FY2	23	FY24	FY25	FY26+	Total	5-Yr Total	
1,046 6,406	6,388	0	0	0	0	0	13,840	6,388	
Phase Task Dates Phase Task Name Start App B - Page 261	Date End Da	te Duratio	on						



Freud & Conner Creek Pump Station Improvements

232002 CIP#

Phase Construct	tion		Contract P	D-3785	Status	Closed Out
Title PO-3785 Fr	eud PS T1 Imp	rvmts				
Freud transform	er T1 updgrade	es				
Phase Budget	Wastewater			Cost Allocation	CTA	
Phase Status	Closed Out			Funding Source	Bond Pro	oceeds
Start Date		9/30/2016		Fund	Construc	ction Bond Fund
End Date		6/30/2017	U	seful Life >20Yrs?	Yes	
Co	ost Estimation Ir	nformation	Tot. Fede	eral Loan Amount		
	1	Cost Est. Class	Pro	gram/Allowance	Task Info	rmation
		Cost Est. Date	Project Manager	Todd King		
		Cost Est. Source	CIP Number			
		Cost Est. Prepared By	Description			

Phase Total Expenses By FY (All figures are in \$1,000's)

GLW Great Lakes Water	<b>Authority</b>	Free	GLWA FY 2021-2 ud & Conner Creek		Improv	rements	232002 CIP#
Phase Construc	tion		Contract	PO-3786	Status	Closed Out	
<b>Title</b> PO-3786, \	/acuum priming	g system validation					
Vacuum primin	g system valido	ation					
Phase Budget	Wastewater			Cost Allocation	CTA		
Phase Status	Closed Out			Funding Source	Bond Pro	oceeds	
Start Date		9/30/2016		Fund	Construc	ction Bond Fund	
End Date		6/30/2017		Useful Life >20Yrs?	Yes		
C	ost Estimation Ir	formation	Tot. Fee	deral Loan Amount			
	1	Cost Est. Class	Pr	ogram/Allowance	Task Info	ormation	
		Cost Est. Date	Project Manage	r			
Bid		Cost Est. Source	CIP Number				
Mini Panicker		Cost Est. Prepared By	y Description				
		-					

# Phase Total Expenses By FY (All figures are in \$1,000's)

GLV Great Lakes Wate	<b>VA</b> <i>r</i> Authority		I		WA FY 202 Conner Cre			Improven	nents	232002
<b>hase</b> GLWA Er	nployees F	Project manc	gement		Contrac	ct NA		Status Ac	ctive	
itle GLWA Sal	aries									
Phase Budge	Wastewa	ter				Cos	t Allocatior	CTA		
Phase Status	Active					Fun	ding Source	Bond Proce	eds	
Start Date	•						Fund	Constructio	n Bond Fund	
End Date	•					Useful	Life >20Yrs?	? No		
С	ost Estimat	tion Informati	on		Tot.	Federal La	an Amoun	t		\$O
	5	Cost E	st. Class			Program	/Allowance	e Task Informo	ation	
		Cost E	st. Date	F	Project Manc	-	·			
					CIP Number					
		Cost F	st Source							
			st. Source							
			st. Source st. Prepare		Description					
Cost Ty	/pe		st. Prepare			efilNonPers	onne	Comme	ent	
	•	Cost E	st. Prepare	d By	Description	efilNonPers	onne 2021C		ent	
GLWA Salaries (	CIP2021	Cost E	st. Prepare	d By	Description	efilNonPers		CIP	ent	
GLWA Salaries GLWA Salaries (	CIP2021 CIP2021	Fiscal Yee	st. Prepare	d By xpense \$17	Description	efilNonPers	20210	CIP CIP	ent	
GLWA Salaries ( GLWA Salaries ( GLWA Salaries (	CIP2021 CIP2021 CIP2021	Fiscal Yee FY19- FY20	st. Prepare	d By (xpense) \$17 \$58	Description	efilNonPers	2021 C	CIP CIP CIP	ent	
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	Cost E           Fiscal Yee           FY19-           FY20           FY21	st. Prepare	d By xpense \$17 \$58 \$57	Description	efilNonPers	2021 C 2021 C 2021 C	CIP CIP CIP CIP	ent	
Cost Ty GLWA Salaries ( GLWA Salaries ( GLWA Salaries ( GLWA Salaries ( GLWA Salaries (	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	Cost Es           Fiscal Yea           FY19-           FY20           FY21           FY22	st. Prepare	d By xpense \$17 \$58 \$57 \$57	Description	efilNonPers	2021 C 2021 C 2021 C 2021 C 2021 C	CIP CIP CIP CIP CIP	ent	
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	Cost Es Fiscal Yea FY19- FY20 FY21 FY22 FY22 FY23	st. Prepare	d By xpense \$17 \$58 \$57 \$57 \$57 \$100	Description	efilNonPers	2021 C 2021 C 2021 C 2021 C 2021 C 2021 C	CIP CIP CIP CIP CIP CIP	ent	
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	Cost Es Fiscal Yea FY19- FY20 FY21 FY21 FY22 FY23 FY24	st. Prepare	d By xpense \$17 \$58 \$57 \$57 \$100 \$100	Description	efitNonPers	2021 C 2021 C 2021 C 2021 C 2021 C 2021 C 2021 C	CIP CIP CIP CIP CIP CIP CIP	ent	
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	Cost Es Fiscal Yea FY19- FY20 FY21 FY22 FY23 FY23 FY24 FY25 FY26+	ar E	d By spense \$17 \$58 \$57 \$57 \$100 \$100 \$100 \$100 \$302	Description		2021 C 2021 C 2021 C 2021 C 2021 C 2021 C 2021 C 2021 C 2021 C	CIP CIP CIP CIP CIP CIP CIP CIP	ent	
GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries GLWA Salaries	CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021 CIP2021	Cost Es Fiscal Yea FY19- FY20 FY21 FY22 FY23 FY23 FY24 FY25 FY26+	ar E	d By spense \$17 \$58 \$57 \$57 \$100 \$100 \$100 \$100 \$302	Description		2021 C 2021 C 2021 C 2021 C 2021 C 2021 C 2021 C 2021 C 2021 C	CIP CIP CIP CIP CIP CIP CIP CIP	ent 5-Yr Total	



Freud & Conner Creek Pump Station Improvements

Phase Construct	ion				Contro	act NA			Status F	uture Planned S	Start
<b>Title</b> Construction	on phase f	rom CS-120	)								
Construction Co	ontract orig	ginating fro	m CS-120.								
Phase Budget	Wastewat	er					Cost Allo	ocation	CTA		
Phase Status	Future Plai	nned Start			Funding Source Bond Proceeds					ceeds	
Start Date	le				Fund Construction Bond Fund					ion Bond Fund	
End Date	e					Us	eful Life 🗧	>20Yrs?	Yes		
Co	Cost Estimation Information Tot. Federal Loan Amount										
	2 Cost Est. Class Program/Allowance Task Information										
7,	7/15/2019 Cost Est. Date				Project Man	ager	Mini Pan	icker			
Contractor		Cost E	st. Source		CIP Number						
Biren Saparia		Cost E	st. Prepare	ed By	Description		This is for Freud ar			ehabilitation of	both
Cost Typ	be	Fiscal Ye	ar E		Fringe Ber	efitNon	Personne	Э	Comm	nent	
Construction		FY23		\$9,798				2021 CIF	C		
Construction		FY24		\$23,730				2021 CIF	C		
Construction		FY25		\$30,703				2021 CIF	5		
Construction		FY26+		\$137,769				2021 CIF	<b>D</b>		
	Phase Total Expenses By FY (All figures are in \$1,000's)										
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY2	5	FY26+	Total	5-Yr Total	
0											
Phase Task Date	es										

Phase Task Name	Start Date	End Date	Duration
Procurement	7/1/2021	6/30/2022	364
Project Execution	7/1/2022	3/31/2028	2100

GLW Great Lakes Water A	<b>A</b> uthority			WA FY 2021-20 Conner Creek P		Improvements	232002 CIP
Phase Task Nam	e Start Date	End Date	Duration				
Project Closeout	4/1/2028	6/30/2028	90				
Phase Construct	ion			Contract PC	)-3784	Status Closed Out	
Title PO-3784, R	oof upgrade ar	nd structural re	oairs for Cor	ner Pump Station			1
Roof upgrade a	nd structural re	oairs for Conne	er Pump Stat	ion			
Phase Budget	Wastewater				Cost Allocation	CTA	
Phase Status	Closed Out				Funding Source	Bond Proceeds	
Start Date		9/30/2010	6		Fund	Construction Bond Fund	
End Date		6/30/2017	7	Us	seful Life >20Yrs?	Yes	
Co	st Estimation Inf	ormation		Tot. Feder	ral Loan Amount		
	4	Cost Est. Class		Prog	gram/Allowance	Task Information	
8,	/31/2017	Cost Est. Date		Project Manager			
Engineering		Cost Est. Sourc	e	CIP Number			
Biren Saparia		Cost Est. Prepa	red By	Description			

Phase Total Expenses By FY (All figures are in \$1,000's)

GLW Great Lakes Water	Authority				LWA FY 20 Conner C				Improv	eme	nts	232002 CIP
Phase not appli	cable				Contro	act NA			Status	Close	ed Out	
Title Prior Year	Actual Exp	benses										
Phase Budget	Wastewa	ter					Cost	Allocation	CTA			
Phase Status	Closed O	ut					Fundi	ng Source				
Start Date								Fund				
End Date						Us	eful Li	e >20Yrs?	No			
С	ost Estimat	ion Informa	tion		То	t. Fedei	al Loa	n Amount				
	1	Cost	Est. Class			Prog	ram/A	llowance	Task Info	rmatio	'n	
		Cost	Est. Date		Project Mar	ager						
		Cost	Est. Source		CIP Numbe	r						
		Cost	Est. Prepare	ed Bv	Description							
Cost Ty	pe	Fiscal Ye	ear E	xpense	Fringe Ber	nefitNor	Persor	nne	Com	ment		
n/a		FY19-		\$2,10	1			2021CI	Р			
			Phase Tot	al Expens	es By FY (Al	l figure	s are i	n \$1,000's	;)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY2	25	FY26+	Tota	1	5-Yr Total	
2,101	0	0	0	(	0 0		0	C	) 2,	101	0	

Great Lakes Water Auth	<b>A</b> hority					21-2025 CI eek Pump		Improvem	ients	232002 CIP#
Phase Construction	on				Contra	<b>ct</b> CON-109		Status Ac	tive	
Title CON-109, Fr	eud & Co	nner Creek	Pump St	ation Improv	vements					
Freud Pump Reha	abilitation	and procur	ement c	of new pump	and a switc	hgear.				
Phase Budget V	Vastewate	er				Cost A	Allocation	CTA		
Phase Status A	ctive					Fundir	ng Source	Bond Procee	eds	
Start Date		12/	19/2016				Fund	Construction	n Bond Fund	
End Date		12/	19/2017	]		Useful Lif	e >20Yrs?	Yes		
Cos	t Estimatio	on Informatio	n		Tot	Federal Loa	n Amount			
	1	Cost Es				Program/A	llowance	Task Informa	tion	
	4				Project Mana	-				
8/3	31/2017	Cost Es	. Date		-	Jgei				
Engineering		Cost Es	. Source	9	CIP Number					
Biren Saparia		Cost Es	. Prepar	ed By	Description					
Cost Type	Э	Fiscal Yea	~	Expense	Fringe Bene	efilNonPersor	ne	Comme	nt	
Construction		FY19-		\$2,467			2021C	Р		
Construction		FY20		\$900			2021C	Р		
		P	nase To	tal Expense	s By FY (All	figures are i	n \$1,000's	;)		
Prior Yr Actual F	-Y20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
2,467	900	0	0	0	0	0	(	3,367	0	
Phase Task Date	s									
Phase Task Name	e Start D	ate End [	Date	Duration						
Project Execution			)/2019	302						

GLW Great Lakes Water	<b>A</b> uthority			GLWA FY 2021-2 & Conner Creek		Improvements	232002 CIP
Phase Construc	tion			Contract	PO-3783	Status Closed Out	
<b>Title</b> PO-3783, C	Conner PLC up	grades					
Conner PLC up	grades						
Phase Budget	Wastewater				<b>Cost Allocation</b>	СТА	
Phase Status	Closed Out				Funding Source	Revenue Financed Capita	I
Start Date		9/30/2016			Fund	Improvement & Extension I	Fun
End Date		6/30/2017			Useful Life >20Yrs?	No	
Co	ost Estimation I	nformation		Tot. Fec	leral Loan Amount		
	2	Cost Est. Class		Pr	ogram/Allowance	Task Information	
8	3/31/2017	Cost Est. Date		Project Manager	,		
Contractor		Cost Est. Source		CIP Number			
Biren Saparia		Cost Est. Prepare	ed By	Description			
		Phase Toto	al Expen	nses By FY (All figu	res are in \$1,000's	5)	
Phase Task Dat	tes						



232002 CIP#

## Freud & Conner Creek Pump Station Improvements

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	5,631	7,364	6,445	57	9,898	23,830	30,803	138,071	222,099	71,033
2020	0	0	5,110	1,984	17,029	13,014	50,014	50,014	25,007	257	0	162,429	155,078
2019	0	2,101	1,384	1,192		223	1,582	11,000	15,000	0	0	32,482	13,997
2018		8,040	5,900	5,100	2,460	1,000			0	0	0	22,500	14,460

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP CS-120 funds increased

**Changes** Funds for the future construction project from CS-120 also increased.

Great Lakes Water Authority		FY 2021-2025 CIP Northeast Pumping Station	232003 CIP#
<ul> <li>Innovation</li> <li>Conceptual WW</li> <li>Water MP Right Si</li> <li>Reliability/Redund</li> <li>NEWTP Repurposition</li> </ul>	zing dancy Project New To CIP	Pump at the Northeast Pumping Station	
Managing Date Original Busines	nager Mini Panicker rector Biren Saparia g Dept SCC ss Case Prepared 10/13/2016 ect Added to CIP 2016	BudgetWastewaterClass Lvl 1WastewaterClass Lvl 2Systems ConClass Lvl 3Pump StationLocationCity of DetroFund and Cost CenterWastewater	ns vit
Problem Statement	repair of the original service elevator, rebu	e inlet gate valves, installation of Pump No. 3 uilding of the spare pumps, repair and upgra ograde of the Gate House air handling system	de of the wet well, repair
• •		or a complete rehabilitation for the station wi ing project and construction assistance durir	<b>e</b>
Other Important Info	*Innovation note: Include energy efficience	cy.	



Northeast Pumping Station

232003 CIP#

Related Project PC-216, PC-672, PC-736

**Primary Driver** 1 - Condition

Driver Explanation Some equipment in this station are the original one when the station was built in 1969



PM Weighted Score <b>79.6</b>		
Criteria	Score	Comment
Condition		5
Performance (Service Level/Reliability)		3
Regulatory (Environmental/Legal)		4
Operations and Maintenance		4
Public Health and Safety		3
Public Benefit		5
Financial		5
Efficiency and Innovation		4
RC Weighted Score <b>89</b>		
Criteria	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	4	
Public Health and Safety	4	

5

5

4

Efficiency and Innovation

Public Benefit

Financial

GLW Great Lakes Water	Authority		GLWA FY 2021-2025 CIP Northeast Pumping S	tation	232003 CIP
<b>Phase</b> Construct <b>Title</b> Northeast	tion Pumping Static	on	Contract TBD	Status Future Planned S	tart
Phase Budget	Wastewater		Cost Alloca		
Phase Status Start Date	Future Planned	d Start		UrceContribution in Aid of ContributionConstructionBondFundConstruction	stru
End Date			Useful Life >20		
	2005 Estimation In 4 1/30/2017	nformation Cost Est. Class Cost Est. Date	Tot. Federal Loan Amo Program/Allowa Project Manager	nce Task Information	
Engineering Biren Saparia		Cost Est. Source Cost Est. Prepared By	CIP Number Description		

# Phase Total Expenses By FY (All figures are in \$1,000's)

GLW/ Great Lakes Water Auth	<b>A</b> <i>vority</i>		GLWA FY 2021-2025 CIP Northeast Pumpir		232003 CIP
hase Design			Contract TBD	Status Future Planned	Start
itle Northeast Pu	umping Sta <sup>.</sup>	tion			
Phase Budget W	/astewater		Cost A		
Phase Status Fu	uture Plann	ed Start	Funding	<b>g Source</b> Contribution in Aid of Co	onstru
Start Date				Fund Construction Bond Fund	
End Date			Useful Life	e >20Yrs? Yes	
Cos	t Estimation	Information	Tot. Federal Loan	Amount	
	4	Cost Est. Class	Program/Al	lowance Task Information	
10/3	30/2017	Cost Est. Date	Project Manager		
Engineering		Cost Est. Source	CIP Number		
Biren Saparia		Cost Est. Prepared By	Description		

# Phase Total Expenses By FY (All figures are in \$1,000's)

i <b>ase</b> GLWA En <b>le</b> GLWA Salo		roject mar	nagement		Contrac	t NA		<b>Status</b> Fi	uture Planned Sto				
Phase Budget	Wastewat	er			Cost Allocation OMID								
Phase Status	Future Planned Start					Fund	ng Source	Contributic	n in Aid of Cons				
Start Date	•						Fund	Constructio	on Bond Fund				
End Date						Useful L	fe >20Yrs?	No					
С	Cost Estimation Information				Tot. Federal Loan Amount\$0								
	5 Cost Est. Class					Program/	Allowance	Task Inform	ation				
	Cost Est. Date				Project Mana	ger							
	Cost Est. Source				CIP Number								
		Cost	Est. Prepare	ed By	Description								
			Phase Tot	al Expen	ses By FY (All f	igures are	in \$1,000's	)					
ior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total				
	0							(	0				

se To Be Determined		Contract TBD	Status Future Planned Start				
<ul> <li>Northeast Pumping Sto</li> </ul>	ition						
Phase Budget Wastewater		Co	ost Allocation OMID				
Phase Status Future Plann	ned Start	Fu	nding Source Contribution in Aid of Constru				
Start Date			Fund Improvement & Extension Fun				
End Date		Useful Life >20Yrs? No					
Cost Estimation	n Information	Tot. Federal Loan Amount					
4	Cost Est. Class	Program	n/Allowance Task Information				
8/31/2017	Cost Est. Date	Project Manager					
Engineering	Cost Est. Source	CIP Number					
Biren Saparia	Cost Est. Prepared By	Description					



#### Northeast Pumping Station

# Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0		0							0	0
2020	0	0		1,000	7,000	10,500	10,500	2,500	0	0	0	31,500	30,500
2019	0					2,408	10,920	13,000		0	0	26,328	26,328
2018			2,408	10,920	13,000				0	0	0	26,328	26,328

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Need to delete this project. Cancelled

Changes



Innovation	Project Status Future Planned	
Conceptual WW N	MP CIP Type Project	
<ul> <li>Water MP Right Siz</li> <li>Reliability/Redunction</li> <li>NEWTP Repurposir</li> </ul>	Iancy Project New To CIP	
		Budget Wastewater
Project Engineer/Mar	-	Class Lvl 1 Wastewater
Dir	ector Todd King	Class Lvl 2 Systems Control Center
Managing	Dept Field Services	Class Lvl 3 Pump Stations
Date Original Busines	s Case Prepared 8/28/2019	Location City of Detroit
Year Proje	ect Added to CIP 2019	Fund and Cost Center Wastewater - 5421-892211
		een accurately established to the metrics being established for other
	GLWA pumping stations. A new conditio	n assessment is required.
Scope of Work /	Perform station inspection by a multi-disc	n assessment is required. ipline team of specialists in pumps, valves, electrical, HVAC, structural, ding mechanical systems. Perform wire to water efficiency tests
Scope of Work / Project Alternatives Other Important Info	Perform station inspection by a multi-disc building envelope I&C, security, and buil	ipline team of specialists in pumps, valves, electrical, HVAC, structural,
Scope of Work / Project Alternatives Other Important Info	Perform station inspection by a multi-disc building envelope I&C, security, and buil Performance of this pumping station is re	ipline team of specialists in pumps, valves, electrical, HVAC, structural, ding mechanical systems. Perform wire to water efficiency tests lated with flood control objectives for Conner and Freud Pumping
Scope of Work / Project Alternatives Other Important Info	Perform station inspection by a multi-disc building envelope I&C, security, and buil Performance of this pumping station is re Stations. Improvements to Freud and Conner Pum	ipline team of specialists in pumps, valves, electrical, HVAC, structural, ding mechanical systems. Perform wire to water efficiency tests lated with flood control objectives for Conner and Freud Pumping



Comment

# PM Weighted Score Score 55 Criteria Score Efficiency and Innovation 5 Operations and Maintenance 3

Operations and Maintenance	3	
Public Benefit	2	
Regulatory (Environmental/Legal)	2	
Performance (Service Level/Reliability)	3	
Condition	3	
Financial	3	
Public Health and Safety	2	

## **RC Weighted**

Score

Score	Comment



**CONDITION ASSESSMENT AT BLUE HILL PUMP STATION** 

Phase GLWA Employ Title Salaries	ees Project m	anagement		Contrac	t NA		Status Fut	ture Planned S	itart	
Phase Budget Wast	ewater				Cost A	Allocation C	CTA			
Phase Status Futur	e Planned Sto	ırt		Funding Source Revenue Financed Capital						
Start Date				Fund Improvement & Extension Fun						
End Date					Useful Life	e >20Yrs? Y	es			
Cost Es	imation Inforr	nation		Tot. Federal Loan Amount \$					\$0	
	Со	st Est. Class		Program/Allowance Task Information						
	Cost Est. Date				ger					
	Co	st Est. Source	9	CIP Number						
	Co	st Est. Prepa	red By	ed By Description						
Cost Type	Fiscal	Year	Expense	Fringe Benef	filNonPerson	ine	Comme	nt		
GLWA Salaries CIP202	21 FY21		\$86			2021 CIP				
		Phase To	otal Expense	es By FY (All fi	gures are iı	n \$1,000's)				
Prior Yr Actual FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total		
0	0 8	6 (	0	0	0	0	86	86		



#### CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

Phase Study		Phase Study						act TE	3D		Status	Fut	ure Planned S	Start
Title Study														
Phase Budget	Wastew	ater							Cost A	llocation	CTA			
Phase Status	Future P	anned	Start						Fundin	g Source	Revenu	e Fin	anced Capito	al
Start Date						Fund Improvement & Extension						Fun		
End Date						Useful Life >20Yrs? Yes								
Cost Estimation Information							То	t. Fede	eral Loar	n Amount				\$O
	Cost Est. Class							Pro	gram/A	llowance 1	Task Info	orma	tion	
	Cost Est. Date				Project Manager									
Cost Est. Source			CIP Number											
	Cost Est. Prepar			red By	ed By Description									
										1				
Cost Typ		Fisc	cal Year		Expense	Expense Fringe BenefilNonPersonne				Comment				
Engineering Serv	rices	FY21				\$200				2021 CIF	2			
			Pha	se To	tal Exp	ense	es By FY (All	figure	es are ir	ר\$1,000's	)			
Prior Yr Actual	FY20	FY2	1 FY	22	FY2	3	FY24	FY	′25	FY26+	Toto	al	5-Yr Total	
0	0		200	0	)	0	0		0	0		200	200	
Phase Task Dat	es													
Phase Task Nam	ne Star	t Date	End Da <sup>.</sup>	e	Duratio	n								
Pre-Procuremen	† 7	/1/2020	7/30/2	020		29								
Procurement		31/2020				182								
Project Executio	n 1/:	30/2021	6/30/2	021		151								



232004 CIP#

## CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

# Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	286	0	0	0	0	0	286	286

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

GLWA Great Lakes Water Authority	GLWA FY 2021-2025 CIP Rouge River In-system Storage Devices								
<ul> <li>Innovation</li> <li>Conceptual WW N</li> <li>Water MP Right Siz</li> <li>Reliability/Redund</li> <li>NEWTP Repurposin</li> <li>Project Engineer/Man</li> </ul>	ing ancy g Demision Budget	Wastewater							
Dir Managing Date Original Busines	ector Biren SapariaClass Lvl 2Dept SCCClass Lvl 3	Wastewater Systems Control Center In System Devices (Dams, ISD's) City of Detroit							
	The Rouge River receives untreated CSO discharges from GLWA CSO out combined sewer systems during wet weather. CSO control strategies tha storms is typically a cost-effective implementation step in a CSO control p Master Plan have shown the effectiveness of controlling first flush for smal 9 locations on DWSD trunk sewers east of the Rouge River are feasible for small storms (less than 1-inch of rainfall).	It deal with first flush capture from small program. Studies for the Wastewater I storms with receiving water modeling.							
Project Alternatives	Perform sewer inspections, utility survey, and flow metering to establish an Storage Devices (ISD) Perform preliminary and final design of the ISDs, including upstream and a and instrumentation. Construct 9 new inflatable dam in-system storage devices (ISD). Modify access points upstream and downstream of each ISD. Provide electrical pneumatic control systems and instrumentation for remote operation. Pro generator.	downstream access points, power supply existing manholes or construct new power, above ground structures for							
Other Important Info	- The new ISD devices would be installed in trunk sewers owned and operc leased sewers. A legal agreement may need to be prepared for GLWA t								
-	None known at this time, but could be tied to work DWSD is doing under p ISDs are planned to be installed in DWSD pipes.	program management because these							



233003 CIP#

Rouge River In-system Storage Devices

**Primary Driver** 3 - Regulatory

**Driver Explanation** The NPDES permit requires GLWA to control untreated CSO discharge. This project serves to increase in-system storage for small storms to prevent smaller storms from untreated cso discharging.



## PM Weighted

Score

58.6

Criteria	Score	Comment
Public Benefit	4	This project is a low-cost (relatively speaking),
Operations and Maintenance	1	This project has a negative impact on O&M b
Regulatory (Environmental/Legal)	5	This project endeavors toward controlling CSC
Public Health and Safety	4	This project can reduce for small storms the bo
Condition	1	This does not apply
Efficiency and Innovation	5	This project results in better environmental stev
Financial	2	This projects financial implications are really c
Performance (Service Level/Reliability)	1	This project allows us to further utilize system st

# **RC Weighted**

Score

# 60.8

Criteria	Score	Comment
Regulatory (Environmental/Legal)	5	
Condition	1	
Financial	1	
Public Benefit	4	
Operations and Maintenance	1	
Performance (Service Level/Reliability)	3	
Public Health and Safety	4	
Efficiency and Innovation	4	

Great Lakes Water	Authority			R	ouge River	In-sys	tem St	orage [	Devices		
	. ,	yees Project management			Contract NA				Status Fut	ure Planned St	art
		tor					Cost All	ocation	SC 83/17		
Phase Budget Wastewater				Cost Allocation CSO 83/17							
Phase Status Future Planned Start				Funding Source Revenue Financed Capital							
Start Date					Fund Improvement & Extension Fun						
End Date						Use	eful Life	> <b>20Y</b> rs? Y	'es		
Cost Estimation Information			Tot. Federal Loan Amount						\$0		
Cost Est. Class					Program/Allowance Task Information						
Cost Est. Date Cost Est. Source				Project Manager							
			e	CIP Number							
		Cost	Est. Prepa	red Bv	Description						
Cost Ty	ре	Fiscal Ye	ear	Expense	e Fringe Benefi		1NonPersonne		Comment		
GLWA Salaries C	-	I FY22		\$3		2021C					
GLWA Salaries C		FY23		-			2021 CIP				
GLWA Salaries C		FY24		•	\$86		2021 CIP				
GLWA Salaries C GLWA Salaries C		FY25 FY26+		•	\$86 \$568		2021 CIP 2021 CIP				
GLWA Salaries C	JF ZUZ I	F120+		•							
			Phase To	otal Expen	ses By FY (All	figures	are in 3	\$1,000's)			
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY2		FY26+	Total	5-Yr Total	
0	0	0	32	2 8	86 86		86	568	858	290	

GLWA Great Lakes Water Autho	rity					NA FY 20 Ige River				Devices		233003 CIF
Phase Construction	n					Contro			Ŭ		ure Planned S	Start
Title Construction		em stord	age device	s (West-sid	de Sv			_				
This phase constru sewer system whic		-				,	-			r more) loca	tions within th	e west-side
Phase Budget W					Jiiig	<u>, sinai proc</u>	ipiran			CSO 83/17		
Phase Status Fu			rt		Funding Source				· ·	eds		
Start Date					Fund Construction Bond F							
End Date							1	lseful Lif	e >20Yrs?			
						_				103		
Cost	Estimatio	on Inform	nation		Tot. Federal Loan Amount\$0					\$0		
4 Cost Est. Class							Pro	-		Task Informa	tion	
8/1/2019 Cost Est. Date				Project Manager Chris Nastally								
CDM Smith (WW	CDM Smith (WWMP) Cost Est. Source			e	C	CIP Number						
Carl Johnson	Carl Johnson Cost Est. Prepared By				D	Description					allowance of	
									,	u% added fo ding of the p	the construction the co	CTION
Cost Type		Fiscal	Year	Expense		Fringe Ben	efitNo	nPerson	ne	Comme	nt	
Construction		FY26+		\$37,1	100	i iligo boli			2021CI			
			Phase To	otal Expe	nses	s By FY (All	figure	es are i	n \$1,000's	)		
Prior Yr Actual F	Y20	FY21	FY22	FY23		FY24	F١	(25	FY26+	Total	5-Yr Total	
0	0	С	) (	0	0	0		0	37,100	37,100	0	
Phase Task Dates												
Phase Task Name	Start D	ate E	nd Date	Duratior	١							
Procurement			6/30/2026		99							
Project Execution			6/30/2030		60							
Project Closeout	//1/	2030 1	2/27/2030	]	79							

GLWA Great Lakes Water Authority				NA FY 2021- Ige River In-		torage [	Devices		233003 CII
Phase Study and Design a Title Study, Design, and C			est-Sic	Contract de In-system Sto		ces	Status Fut	ure Planned St	art
Includes determing prope construction, operations of on how land acquisition g project to begin construct meets planned criteria. P	and mainteannce loes, the design t tion early. Execu	e, and provi eam could ition of this p	ding start o projec	design and cor on one side for t will need to b	nstruction a acquiring, e further ev	issistance then desig valuated o	to execute gning and th during this p	the project. D	epending It the
Phase Budget Wastewat	hase Budget Wastewater				Cost Al	location (	CSO 83/17		
Phase Status Future Pla	nned Start				Funding	g Source 🗟	Revenue Fin	anced Capita	l
Start Date					Fund I	mprovemer	nt & Extension I	- Un	
End Date	End Date				Useful Life >20Yrs? Yes				
Cost Estimati	on Information		Tot. Federal Loan Amount   \$0					\$0	
4	ass		Р	rogram/All	owance T	ask Informa	ition		
8/1/2019	Cost Est. Do	ate	Project Manager Chris Nastally						
CDM Smith (WWMP)	Cost Est. So		CIP Number						
Carl Johnson	Cost Est. Pro		A design allowance will be added to the project for situations that arise during design				n		
					that rec services		ional desig	n or consulting	
Cost Type	Fiscal Year	Expense	Ð	Fringe Benefil	NonPersonr	ne	Comme	nt	
Engineering Services	FY24	\$3	,288			2021 CIP			
Engineering Services	FY25	\$1	,898,			2021 CIP			
Engineering Services	FY26+	\$3	,653			2021 CIP			
	Phas	e Total Exp	enses	s By FY (All figu	ures are in	\$1,000's)			
Prior Yr Actual FY20	FY21 FY2	22 FY2	3	FY24	FY25	FY26+	Total	5-Yr Total	
		0	0	3,288	1,898	3,653	8,839	5,186	



Rouge River In-system Storage Devices

Phase Task Name	Start Date	End Date	Duration
Pre-Procurement	2/16/2022	9/3/2022	199
Procurement	9/4/2022	6/30/2023	299
Project Execution	7/1/2023	12/27/2030	2736



### Rouge River In-system Storage Devices

## Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	32	86	3,374	1,984	41,321	46,797	5,476

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP 2019-08 - This is a new project to the CIP being driven by recommendations from the Wastewater Masterplan Changes Project (2019).



### GLWA FY 2021-2025 CIP 260 WRRF, Lift Station and Wastewater Collection System Structures Allowance

Innovation	Project Status Closed	WR	RF	
Conceptual WW M	CIP lype Allowance			
<ul> <li>Water MP Right Sizin</li> <li>Reliability/Redundation</li> <li>NEWTP Repurposing</li> </ul>	ancy Project New To CIP			
		Budget	Wastewo	ater
Project Engineer/Man	ager Beena Chackunkal	Class Lvl 1	Wastewo	ater
Dire	ctor Dan Alford	Class Lvl 2	Program	ns
Managing I	Dept WW Design Eng	Class LvI 3	Program	ns
Date Original Business	Case Prepared 4/13/2017	Location	Multiple	Counties
Year Projec	ct Added to CIP 2012	Fund and Cost Center	Wastew	ater - 5421-892111
Project Alternatives r F Other Important Info	his is an allowance for unplanned critical project eplacement, energy saving projects, etc at the acilities. Unplanned critical items include, but control, demolition, earthwork, concrete, maso Challenges: N/A - Allowance. Project History: WRRF has audited twice in the p o assess equipment repair and future planning acilities.	ne Wastewater Treatment not limited to, mechanico nry, etc. past for all equipment and and execution of rehabili	Plant and II, HVAC, e supportin tation/rep	d other Wastewater Operation electrical, instrumentation and ng facilities. These audits helped placement projects at WRRF
R N N	Replacement of Emergency Lighting and Exist S ITP was issued on 12/2/2016 and the Final Com Meter at Neff Road Pumping Station. This project CS -060 is also funded from this Allowance becc of WRRF.	Signs. The construction buc apletion Date is 12/27/2017 at has recently been comp	dget for th (. (b) SCP- pleted in <i>1</i>	nis projects is \$1,178,743. The PC-016G, Replacement of Flow March 2017.
Primary Driver	I/A - Allowance			
Driver Explanation	I/A - Allowance			

GLWA Great Lakes Water Authority
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## WRRF, Lift Station and Wastewater Collection System Structures Allowance

hase Construct	tion		Contract N	A	Status Closed Out			
itle 260103 RFF	P-46280 Repl	ace back drives of 4 DS-700	6 Sharples Centrifuges	WWTP				
Phase Budget	Wastewater	,	Cost Allocation CTA					
Phase Status	Closed Out			Funding Source	Bond Proceeds			
Start Date			Fund Construction Bond Fund					
End Date			ι	Jseful Life >20Yrs?	Yes			
Cost Estimation Information			Tot. Federal Loan Amount					
	1 Cost Est. Class Cost Est. Date		Program/Allowance Task Information					
			Project Manager	Beena Chackun	kal			
		Cost Est. Source	CIP Number	260103				
		Cost Est. Prepared By	Description	100 HP Motors, V Installation of Ma Main Drive 300 H	<sup>5</sup> DS-706 Centrifuges Back Drive (FD's and Control Panels and otor Protection Modules for IP Motors for Four (4) Sharples ewatering Complex II at the			

Closed Out	Status C	CP-PC-010	Contract S		tion	<b>ase</b> Construct
		260105	Air Distribution Equip 2	racting - Replace Various	0 Tooles Cont	e SCP-PC-01
	lion CTA	Cost Allocation			Wastewater	Phase Budget
e Financed Capital	rce Revenue F	Funding Source			Closed Out	Phase Status
ement & Extension Fun	und Improvem	Fund				Start Date
	(rs? No	lseful Life >20Yrs?	ι			End Date
	ount	eral Loan Amount	Tot. Fede	Cost Estimation Information		
ormation	nce Task Inform	gram/Allowance	Cost Est. Class	1		
	ckunkal	Beena Chackur	Project Manager	Cost Est. Date		
		260105	CIP Number	Cost Est. Source		
bution equipment for acility at Pump Station 2	screening facil		Description	Cost Est. Prepared By		

	GLA Great Lakes Water	<b>Authority</b>	WRRF, Lift Station	GLWA FY 2021-20 and Wastewater		item Str		260100 CIP# nce
Phas	e Construc	tion		Contract N	A	Status	Closed Out	
Title	260102 RFF	P 44380 Titus \	Welding Co - Replace Stair	rs - WRRF				
Ph	ase Budget	Wastewater			Cost Allocation	CTA		
P	hase Status	Closed Out			Funding Source	Bond Pro	oceeds	
	Start Date				Fund	Construe	ction Bond Fund	
	End Date			U	seful Life >20Yrs?	Yes		
	C	ost Estimatior	Information	Tot. Fede	eral Loan Amount			
		2	Cost Est. Class	Pro	gram/Allowance	Task Info	ormation	
			Cost Est. Date	Project Manager	Beena Chackun	nkal		
С	Contract		Cost Est. Source	CIP Number	260102			
			Cost Est. Prepared By	Description	Address several	safety ho	azards present withir	١

and around the Administration Building such as cracked parapet stones, uneven sidewalk pavers, cracked floors and unsafe door.

GLW Great Lakes Water A	<b>A</b> Suthority	WRRF, Lift Station	GLWA FY 2021-20 n and Wastewater		tem Str	ructures Allowar	260100 CIF nce
Phase Construct Title SCP-PC-01		tric Emergency Lightin	<b>Contract</b> So g - 260101	CP-PC-014	Status	Closed Out	
The construction Phase Budget		P-PC-014 was funded f	rom this Allowance. In	Correct Project	СТА		
Phase Status Start Date		5/25/2016		Funding Source	Revenue	e Financed Capital ment & Extension Fu	
End Date		12/27/2017		Jseful Life >20Yrs?	No		
	ost Estimation Ir	formation Cost Est. Class Cost Est. Date Cost Est. Source Cost Est. Prepared By		eral Loan Amount gram/Allowance Beena Chackun 260101 Plant-wide repla lighting, exit sign supplies and bat	kal cement s, uninter	of emergency rruptible power	

GLWA Great Lakes Water Authority WRRF, Lift Stati	GLWA FY 2021-2025 CIP on and Wastewater Collection Sys	260100 CIP Stem Structures Allowance
Phase Construction	Contract SCP-PC-016G	Status Closed Out
Title SCP-PC-016G, Z Contractors Inc, Neff Road Pu	umping Station Flowmeter Replacement - 2	60108
No projected expense for 2018.		
Phase Budget Wastewater	Cost Allocation	СТА
Phase Status Closed Out	Funding Source	Revenue Financed Capital
<b>Start Date</b> 4/22/2016	Fund	Improvement & Extension Fun
End Date 4/17/2017	Useful Life >20Yrs?	No
Cost Estimation Information	Tot. Federal Loan Amount	
1 Cost Est. Class	Program/Allowance	Task Information
Cost Est. Date	Project Manager Beena Chackur	ıkal
Cost Est. Source	<b>CIP Number</b> 260108	
Cost Est. Prepared B		ointe - Neff Road Pumping Flowmeter Replacement

GLW Great Lakes Water J		WRRF, Lift Statio	GLWA FY 2021-202 n and Wastewater C		tem Str		260100 CIP 1Ce
Title Unallocate	ed S/D/CA - WF	Construction Assistance RRF, Lift Station and Wc es for any Critical jobs for	astewater Collection Syste			Closed Out	
Phase Budget Phase Status Start Date End Date		7/1/2018 6/30/2023		Cost Allocation CTA Funding Source Revenue Financed Capital Fund Improvement & Extension Fund Useful Life >20Yrs? No			
Co	ost Estimation II	nformation Cost Est. Class Cost Est. Date Cost Est. Source Cost Est. Prepared By	Proge Project Manager CIP Number	al Loan Amount ram/Allowance	Task Info	ormation	

GLW Great Lakes Water J	<b>/A</b> Authority	WRRF, Lift Station and Wastewater Collection System Structures Allowo								
Phase Construct	tion		Contract NA	Status Closed Out						
Title Unallocate	ed Constructio	n - WRRF, Lift Station and	d Wastewater Collection System Struct	tures Allowance						
Expected Cons	truction Cost f	rom this Allowance for th	ne next five years.							
Phase Budget	Wastewater		Cost Allocati	on CTA						
Phase Status	Closed Out		Funding Sour	<b>ce</b> Bond Proceeds						
Start Date		7/1/2018	Fu	nd Construction Bond Fund						
End Date		6/30/2023	Useful Life >20Yı	rs? Yes						
Cost Estimation Information			Tot. Federal Loan Amou	unt						
	4	Cost Est. Class	Program/Allowan							
1	0/2/2017	Cost Est. Date	Project Manager							
		Cost Est. Source	CIP Number							
Ali Khraizat		Cost Est. Prepared By	Description							

GLWA Great Lakes Water Authority
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WRRF, Lift Station and Wastewater Collection System Structures Allowance

260100 CIP#

nase Construction	Contract NA	Status Closed Out
tle 260113, Walsh Construction, WRRF Fire Rer	nediation	
Phase Budget Wastewater	Cost Alloca	tion CTA
Phase Status Closed Out	Funding Sou	rce Bond Proceeds
Start Date	F	und Construction Bond Fund
End Date	Useful Life >20	Yrs? Yes
Cost Estimation Information	Tot. Federal Loan Amo	ount
1 Cost Est. Class	Program/Allowa	nce Task Information
Cost Est. Date	Project Manager Ali Khraizat	
Cost Est. Source	<b>CIP Number</b> 260113	
Cost Est. Prepar	ed By Description WRRF Fire Re	emediation

### Phase Total Expenses By FY (All figures are in \$1,000's)

• Construc	tion		Contract	WS-065	Status	Closed Out
<b>e</b> DWS-065, 1	Tooles, Connoi	Creek CSO Control Faci	lity Access Hatches 26	0112		
60112				r		
Phase Budget	Wastewater			Cost Allocation	CTA	
Phase Status	Closed Out		Funding Source Bond Proceeds			
Start Date		12/5/2016	Fund Construction Bond Fund			
End Date		7/3/2017	Useful Life >20Yrs? Yes			
C	ost Estimation	nformation	Tot. Federal Loan Amount			
	1	Cost Est. Class	Program/Allowance Task Information			ormation
		Cost Est. Date	Project Manager	r Kashmira Patel		
		Cost Est. Source	CIP Number	260112		
		Cost Est. Prepared By	Description	The scope of work includes installation of o access hatch on top of Conner Influent Channels and one near Roller Gates Area Installation of Gravel access pad on top o existing Forebay roof slab was also part of scope of work.		

GLWA Great Lakes Water Authority	y
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## WRRF, Lift Station and Wastewater Collection System Structures Allowance

e       Prior Year Actual Expenses         Phase Budget       Wastewater       Cost Allocation       CTA         Phase Status       Closed Out       Funding Source       Image: Closed Out       Fund         Start Date       Fund       Useful Life >20Yrs?       No         End Date       Tot. Federal Loan Amount       Program/Allowance Task Information         Project Manager       Cost Est. Date       Project Manager       Image: Clip Number         Cost Est. Date       Cost Est. Source       Clip Number       Image: Clip Number       Image: Clip Number         Phase Total Expenses By FY (All figures are in \$1,000's)       Protal       5-Yr Total       5-Yr Total	Prior Year Actual Expenses         Phase Budget       Wastewater         Phase Status       Closed Out         Start Date       Funding Source	sed Out							
Phase Budget Wastewater       Cost Allocation CTA         Phase Status Closed Out       Funding Source         Start Date       Fund         End Date       Useful Life >20Yrs? No         Tot. Federal Loan Amount         1       Cost Est. Class         Cost Est. Date       Program/Allowance Task Information         Project Manager       CiP Number         Cost Est. Source       Description         Cost Est. Prepared By       FY (All figures are in \$1,000's)         Phase Total Expenses By FY (All figures are in \$1,000's)	Phase Budget       Wastewater       Cost Allocation       CTA         Phase Status       Closed Out       Funding Source       Fund         Start Date       Fund       Fund       Fund								
Phase Status         Closed Out         Funding Source           Start Date         Fund         Start Date           End Date         Useful Life >20Yrs?         No           Cost Estimation Information         Tot. Federal Loan Amount         Image: Cost Est. Class           Cost Est. Class         Cost Est. Class         Program/Allowance Task Information           Cost Est. Date         Cost Est. Date         Image: Clip Number           Cost Est. Prepared By         Cip Number         Image: Clip Number           Description         Program (All figures are in \$1,000's)         Start Date	Phase Status     Closed Out     Funding Source       Start Date     Fund								
Start Date       Fund         End Date       Useful Life >20Yrs?         Cost Estimation Information       Tot. Federal Loan Amount         1       Cost Est. Class         Cost Est. Date       Program/Allowance Task Information         Cost Est. Date       CIP Number         Cost Est. Prepared By       Description	Start Date Fund								
End Date       Useful Life >20Yrs?       No         Cost Estimation Information       Tot. Federal Loan Amount       Tot. Federal Loan Amount         1       Cost Est. Class       Program/Allowance Task Information         Cost Est. Date       Cost Est. Source       CIP Number         Cost Est. Prepared By       Description       Description									
Tot. Federal Loan Amount         I       Cost Est. Class       Program/Allowance Task Information         I       Cost Est. Date       Project Manager         Cost Est. Source       ClP Number       Image: ClP Number         Description       Description	End Date								
1       Cost Est. Class       Program/Allowance Task Information         Cost Est. Date       Cost Est. Source       CIP Number         Cost Est. Prepared By       Description		Useful Life >20Yrs? No							
Cost Est. Date   Cost Est. Source   Cost Est. Source   Cost Est. Prepared By    Project Manager  CIP Number  Description  Phase Total Expenses By FY (All figures are in \$1,000's)  or Yr Actua FY20 FY21 FY22 FY23 FY24 FY25 FY26+ Total 5-Yr Total	Cost Estimation Information Tot. Federal Loan Amount								
Cost Est. Source       CIP Number         Cost Est. Prepared By       Description         Phase Total Expenses By FY (All figures are in \$1,000's)         or Yr Actua         FY20       FY21       FY22       FY23       FY24       FY25       FY26+       Total       5-Yr Total	Cost Est. Class         Program/Allowance Task Information	ion							
Cost Est. Prepared By       Description         Phase Total Expenses By FY (All figures are in \$1,000's)         or Yr Actua         FY20       FY21       FY22       FY23       FY24       FY25       FY26+       Total       5-Yr Total	Cost Est. Date Project Manager								
Phase Total Expenses By FY (All figures are in \$1,000's)         or Yr Actual       FY20       FY21       FY22       FY23       FY24       FY25       FY26+       Total       5-Yr Total	Cost Est. Source CIP Number								
or Yr Actual FY20 FY21 FY22 FY23 FY24 FY25 FY26+ Total 5-Yr Total	Cost Est. Prepared By Description								
or Yr Actual FY20 FY21 FY22 FY23 FY24 FY25 FY26+ Total 5-Yr Total									
		0							

GLW Great Lakes Water	<b>IA</b> Authority	WRRF, Lift Sta	ation	GLWA FY 2021-2025 CIP 260100 n and Wastewater Collection System Structures Allowance				
Phase Construc Title SCP-PC-01		, W-3 Construction,	Overh	Contract SC nead Door - 260111	CP-PC-015	Status Closed Out		
Phase Budget Phase Status					Cost Allocation Funding Source			
Start Date End Date				Fund Construction Bond Fund Useful Life >20Yrs? Yes				
	Cost Estimation Information				eral Loan Amount			
1       Cost Est. Class         Cost Est. Date         Cost Est. Source         Cost Est. Prepared			d By	Project Manager CIP Number Description	gram/Allowance Beena Chackun 260111 Overhead Door			
		Phase Total	I Expe	enses By FY (All figure	es are in \$1,000's	;)		

GLW Great Lakes Water	<b>XA</b> Authority	WRRF, Lift Station	GLWA FY 2021-20 and Wastewater C	260100 CIP# ance		
Phase Construc Title 260109, RF		Construction, Rehab Va	<b>Contract</b> NA Ilve Remote Flow Contro	-	Status Closed Out	
Phase Budget       Wastewater         Phase Status       Closed Out			Cost Allocation CTA Funding Source Bond Proceeds			
Start Date End Date			U	Construction Bond Fund Yes		
Cost Estimation Information			Tot. Fede	Task Information		
		Cost Est. Date Cost Est. Source Cost Est. Prepared By	Project Manager CIP Number Description	Gary Stoll 260109 Rehab Valve Re	mote Flow Control Facility	

GLWA Great Lakes Water Authority	WRRF, Lift Station	GLWA FY 2021-20 and Wastewater (	tem Structures Allowar	260100 CIP# 1Ce		
Phase Construction		Contract NA	4	Status Closed Out		
Title 260104, RFB 46149, Install	ation of EB-25 Unit Substa	ation at Incinerator Cor	nplex II, WRRF		T	
Phase Budget Wastewater			Cost Allocation	СТА		
Phase Status Closed Out			Funding Source	Revenue Financed Capital		
Start Date			Fund	Improvement & Extension Fu	ın	
End Date		U	seful Life >20Yrs?	No		
Cost Estimation I	nformation	Tot. Federal Loan Amount				
1	Cost Est. Class	Program/Allowance Task Information				
	Cost Est. Date	Project Manager	Beena Chackun	kal		
	Cost Est. Source	CIP Number	260104			
	Cost Est. Prepared By	Description	Installation of EB- Incinerator Com	-25 Unit Substation at plex II, WRRF		

WRRF, Lift Station and Wastewater Collection System Structures Allowance

260100 CIP#

<b>hase</b> Construc	tion		Contract N	A	Status	Closed Out		
itle 260107, Pu	ump Station 2	2 Aeration Blower Replacen	nent					
Phase Budget	Wastewate	r	Cost Allocation CTA					
Phase Status	Closed Out			Funding Source	Bond Pro	oceeds		
Start Date			Fund Constr			ction Bond Fund		
End Date			U					
C	ost Estimatio	n Information	Tot. Federal Loan Amount					
	2	Cost Est. Class	Program/Allowance Task Information					
		Cost Est. Date	Project Manager					
Contract	Contract Cost Est. Source		CIP Number	260107				
		Cost Est. Prepared By	Description					
		Phase Total Expe	enses By FY (All figure	es are in \$1,000's	;)			

WRRF, Lift Station and Wastewater Collection System Structures Allowance										260100 CIP: ance
Phase GLWA Em		roject man	agement		Contro	act NA		Status Cla	osed Out	
Title GLWA Salo	aries									
Phase Budget	Wastewat	er				Cost	Allocation	CTA		
Phase Status	Status Closed Out					Fund	ing Source	Bond Proce	eds	
Start Date		Fund Construction Bond Fund								
End Date		Useful Life >20Yrs? No								
Cost Estimation Information					То	t. Federal Lo	an Amount			\$0
	3 Cost Est. Class				Program/Allowance Task Information					
		Cost	Est. Date		Project Manager					
		Cost	Est. Source		CIP Numbe	r				
		Cost	Est. Prepare	ed By	Description					
			Phase Tot	al Expen	ses By FY (Al	l figures are	in \$1,000's	5)		
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
0	0	0	0		0 0	0	(	0 0	0	
Phase Task Dat	es									



### WRRF, Lift Station and Wastewater Collection System Structures Allowance

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	0	0	21,938	1,100	1,100	1,100	1,100	1,100	1,100	5,500	0	34,038	5,500
2019	0	14,758	2,195	1,100	1,100	2,200	2,200	2,200		0	0	25,753	8,800
2018		5,587	12,000	12,000	15,000	15,000	12,000		0	0	0	71,587	66,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Reduced FY 21-23 from \$2.2 million to \$1.1 million to accommodate CIP No. 232002.

Changes



GLWA FY 2021-2025 CIP Sewer and Interceptor Rehabilitation Program

Innovation	Project Status Active	An example intercepto	pr 💦
Conceptual WW MI	CIP Type Program		
□ Water MP Right Sizir			
Reliability/Redunda	Incy Project New To CIP		
NEWTP Repurposing		<b>-</b>	
Project Engineer/Mana	under Mini Panicker	-	Wastewater
	ctor Biren Saparia		Wastewater
Managing D	•	Class Lvl 2 Class Lvl 3	•
	Case Prepared 10/11/2016		Multiple Counties
-	t Added to CIP 2013		Wastewater - 5421-882301
Project Alternatives e: C cl in	rovide CCTV and/or sonar inspection of t xisting conditions as per the National Asso certification Program (PACP) standards, e leaning/rehabilitation/replace to optimiz oflow and infiltration into the collection sys	ociation of Sewer Service Compo valuate the existing conditions, c the design capacity of the col stem.	anies' (NASSCO) Pipeline Assessment and provide the necessary lection system and to minimize the
-	Challegers: Large sewers and interceptors ehabilitation.	may have flow control challeng	es for both inspection and
c p in e	roject History: The installation of some of t ontracts. Detroit River Interceptor inspec ortions deteriorated with visible surface of spection revealed sludge deposition with xisting conditions are necessary and shall may reveal further need for cleaning, reho	tion was recently completed in 5 aggregates, attached encrustation n reduced transportation capac I be done every 5 to 7 years. Rec	5 different phases and there were on and infiltration. Some trunk sewer ity. Inspections of sewers to reveal the
Related Project G	GLWA - CON-68, CON-149, CS-168, DWSD	- DWS-889, DWSD-DWS-876, DWSI	D-DWS-901
Primary Driver	Condition		



### Sewer and Interceptor Rehabilitation Program

Driver Explanation Some sewers have sediment deposits that results in transportation capacity limitation. Some have deterioration.

GLV Great Lakes Wate	<b>VA</b> <i>r Authority</i>				NA FY 202 and Inter				on Progra	m	260200 CIF
Phase Study an	nd Design c	and Constru	ction Assist	ance	Contra	ct C	S-168		Status Ac	tive	
Title CS-168, Fk	< Engineeri	ng, Sewer c	ind Interce	ptor Evaluat	ion and Reh	nabilit	ation Pr	rogram			
FK Engineering	Associates	S									
Phase Budge	l Wastewa	ter					Cost /	Allocation	CTA		
Phase Status	Active						Fundiı	ng Source	Bond Proce	əds	
Start Date	•		9/1/2017					Fund	Constructior	n Bond Fund	
End Date	•		9/1/2020			U	Jseful Lif	e >20Yrs?	Yes		
C	ost Estimat	ion Informa	tion		Tot	Fede	eral Loa	n Amount			
	1	Cost	Est. Class			Pro	gram/A	llowance	Task Informa	Ition	
			Est. Date	Р	roject Man		-	anicker			
Bid			Est. Source	C	CIP Number						
Mini Panicke	r	Cost	Est. Prepare	ed By D	)escription		service of GLV primai focuse	e to perfor VA Conve ry objectiv ed geotec gation an	m the as nee yance Syster e ofthis proje hnical and s	on administrati eded rehabilito m Sewers. The ect is to condu tructural n array fo feas	ation ct a
Cost Ty	/pe	Fiscal Ye	ear E		Fringe Bene	efitNo			Comme	nt	
Engineering Ser		FY19-		\$520				2021 CI	Р		
Engineering Ser	rvices	FY20		\$1,710				2021 CI	Р		
Engineering Ser	rvices	FY21		\$290				2021 CI	Р		
			Phase Tot	al Expenses	By FY (All	figure	es are i	n \$1,000's	;)		
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY	(25	FY26+	Total	5-Yr Total	
520	1,710	290	0	0	0		0	(	2,520	290	

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GLW Great Lakes Water A	<b>A</b>			LWA FY 2021- r and Interce	2025 CIP ptor Rehabilitati	ion Prog	gram	260200 CIF
Phase Task Nam	e Start Date	End Date	Duration					
Project Execution	n 8/1/2018	8/31/2020	761					
Phase Construct	on			Contract	CS-068	Status	Closed Out	
Title CS-068, Sev	ver and Interce	ptor Evaluatio	n and Rehal	oilitation Program	1			
Sewer Inspectio VR02 Upgrades Conner CSO Ba Installation of th Installation of Slu	ckwater Upgrad e Weir on Conn	des (Nine) er Discharge (	Channel	hannel				
Phase Budget	Wastewater				Cost Allocation	CTA		
Phase Status	Closed Out				Funding Source	Bond Pro	oceeds	
Start Date		10/25/201	6		Fund	Construe	ction Bond Fund	
End Date		4/25/201	8		Useful Life >20Yrs?	Yes		
Co	st Estimation Inf	ormation		Tot. Fe	deral Loan Amount			
	1	Cost Est. Class		Р	rogram/Allowance	Task Info	ormation	
		Cost Est. Date		Project Manage	Mini Panicker			
Bid		Cost Est. Sourc	e	CIP Number	260203			
Mini Panicker		Cost Est. Prepo	ared By	Description			Trunk Sewers for and Structural Integ	rity.

GIN GLW Great Lakes Water					GLWA FY 20 ver and Inte				on Proara	m	260200 CIP
		Constru	ation Assist			-	0-00503		-		
Phase Study and Title PO-005030	0, Sewer and li							0	sialus re	nding Close-out	
This includes Co								ntor)			
Phase Budget	Г	STUTICC			norgoney one			llocation	СТА		
	Pending Close							L	Bond Proce	ade	
							ronan				
Start Date			8/25/2016							n Bond Fund	
End Date			6/30/2018			ι	Jseful Life	e >20Yrs?	Yes		
Co	ost Estimation I	nforma	lion		То	ot. Fed	eral Loai	n Amount			
	1	Cost E	st. Class			Pro	gram/A	llowance 1	ask Informa	ition	
		Cost E	st. Date		Project Ma	nager	Biren S	aparia			
Consultant		Cost E	st. Source		CIP Numbe	۹r	260201				
Biren Saparia			st. Prepare	ed By	Description	1				l inspection,	
										alternatives an ument for biddi	
							purpos				
			Phase Tot	al Expe	nses By FY (A	ll figur	es are iı	ר\$1 <i>,</i> 000's)			
Prior Yr Actua	FY20 FY	(21	FY22	FY23	FY24	F	Y25	FY26+	Total	5-Yr Total	
0	0	0	0		0 0		0	0	0	0	
Phase Task Da	tes										
Phase Task Nan		e Fno	Date I	Duration							
Project Executio			30/2019	10	_						

GLW Great Lakes Water	<b>Authority</b>		Se		NA FY 202 and Inter				on Pro	gram		260200 CIP
Phase not appli	cable				Contra	ct NA			Status	Close	d Out	
Title Prior Year	Actual Expe	enses										
Phase Budget	Wastewate	er				(	Cost /	llocation	CTA			
Phase Status	Closed Ou	t				I	undir	ng Source				
Start Date								Fund				
End Date						Use	eful Lif	e >20Yrs?	No			
					<b>T</b> - 1							
Co	ost Estimatio	on Information	ו		101	. Federo	ii loa	n Amount				
	1	Cost Est.	Class			Progr	am/A	llowance	Task Info	ormatic	'n	
		Cost Est.	Date	P	roject Man	ager						
		Cost Est.	Source	C	CIP Number							
		Cost Est.	Prepared By	0	<b>Description</b>							
Cost Ty	ре	Fiscal Year	Expens	se	Fringe Ben	efitNonF	ersor	ine	Cor	nment		
n/a		FY19-	\$	5,115				2021 CI	Р			
		Ph	ase Total Exp	oenses	s By FY (All	figures	are i	n \$1,000's	)			
Prior Yr Actual	FY20	FY21	FY22 FY	23	FY24	FY2	5	FY26+	Toto	al l	5-Yr Total	
5,115	0	0	0	0	0		0	С	5	115	(	)

GLWA Great Lakes Water Authority	y					VA FY 2021 and Interce			ion Prog	ram	260200 CI
Phase To Be Determ						Contract			Status	Future Planned S <sup>.</sup>	tart
<b>fitle</b> UNALLOCATED	), Sewe	r and Inter	ceptor Ev	valuation	and I	Rehabilitation	Program	n			
Phase Budget Wa	stewate	ər					Cos	t Allocation	CTA		
Phase Status Futu	ure Plar	nned Start					Fun	ding Source	Bond Prod	ceeds	
Start Date								Fund	Construct	ion Bond Fund	
End Date							Useful	Life >20Yrs?	Yes		
Cost E	stimatio	on Informa	tion			Tot. Fe	ederal Lo	oan Amount			
	2	Cost	Est. Class			I	Program	/Allowance	Task Infori	nation	
8/31/	/2017	Cost	Est. Date		Pr	roject Manage	er Mini	Panicker			
Contractor		Cost	Est. Sourc	e	С	IP Number					
Biren Saparia		Cost	Est. Prepa	ired By	D	escription	and	is for the futu cleaning pr ers/intercep	rogram for	ement, rehabilita trunk	tion
Cost Type		Fiscal Ye	agr	Expense		Fringe Benefit	NonPers	onne	Comr	nent	
Unknown		FY21			138	rnige benenn		2021C			
Unknown		FY22		\$16,2				2021C			
Unknown		FY23		\$19,3	311			2021C	IP		
Unknown		FY24		\$15,4	495			2021C	IP		
Unknown		FY25		\$14,3				2021C			
Unknown		FY26+		\$13,2				2021C			
			Phase To	otal Expe	enses	By FY (All fig	ures are	e in \$1,000's	5)		
Prior Yr Actual FY2		FY21	FY22	FY23		FY24	FY25	FY26+	Total	5-Yr Total	
0	0	4,138	16,26	8 19,3	311	15,495	14,34	7 13,240	82,79	69,559	
Phase Task Dates											
Phase Task Name	Start D	oate End	d Date	Duratior	n						
Project Execution 31	<sub>5</sub> 7/1	/2020 6/	/30/2026	21	90						



Sewer and Interceptor Rehabilitation Program

hase Construction				Contract	СС	N-149		Status Ac	tive	
itle CON-149, Emergenc	y Sewer Repair									
Phase Budget Wastewat	ter					Cost A	llocation (	CTA		
Phase Status Active						Funding	g Source E	Bond Proce	eds	
Start Date	7/17/	2017					Fund (	Construction	n Bond Fund	
End Date	7/17/	2019			Us	eful Life	e >20Yrs?	'es		
Cost Estimat	ion Information			Tot. F	eder	al Loan	Amount			
1	Cost Est. C	lass			Prog	ram/Al	lowance T	ask Informa	ation	
8/31/2017	Cost Est. De	ate	P	Project Manag	jer	Mini Pa	inicker			
Contractor	Cost Est. So	ource	C	CIP Number		260201				
Biren Saparia	Cost Est. Pr	epared By		Description	i	means interce	of PACP in ptors/trunk	nspection c	eaning, and	he
Cost Type	Fiscal Year	Expens	е	Fringe Benefi	1Non	Personi	ne	Comme	ent	
Construction	FY19-	\$12	2,828				2021 CIP			
Construction	FY20	•	2,525				2021 CIP			
Construction	FY21	\$	1,875				2021 CIP			
	Phas	e Total Exp	enses	s By FY (All fig	gures	are in	1 \$1,000's)			
Prior Yr Actual FY20	FY21 FY2	22 FY2	23	FY24	FY2	5	FY26+	Total	5-Yr Total	
12,828 12,525	1,875	0	0	0		0	0	27,228	1,875	
Phase Task Dates Phase Task Name Start [	Date End Dat	e Duratio	on							



## Sewer and Interceptor Rehabilitation Program

Phase Construction	on					Contro	act TB	D		Status	Futi	ure Planned S	start	
Title Constructio	n from 1	802575												
Sewer rehabilitat	tion proje	ects aris	ing from	1802575										
Phase Budget V	Nastewo	ater						Cost /	Allocation	CTA				
Phase Status F	- uture Pla	anned S	Start					Fundir	ng Source	Bond Pr	ocee	eds		
Start Date									Fund	Constru	ction	Bond Fund		
End Date							U	seful Lif	e >20Yrs?	Yes				
Cos	st Estima	tion Info	ormation		٦.	То	l. Fede	ral Loa	n Amount				\$0	
	5	C	Cost Est. C	lass			Prog	gram/A	llowance	Task Info	orma	tion		
		C	Cost Est. D	ate		Project Manager Mini Po			anicker	cker				
		C	Cost Est. S	ource	CIP Number 260204			4						
		C	Cost Est. P	repared By	,	Description								
				. ,										
Cost Typ	e	Fisc	al Year	Exper	nse	Fringe Ben	efilNo	nPersor	nne	Con	nmer	nt		
Construction		FY21			\$5,917				2021 CI	Р				
Construction		FY22		•	19,143	9,143			2021 CIP					
Construction		FY23			\$4,940				2021CI	Р				
			Pha	se Total Ex	pense	es By FY (All	figure	es are i	n \$1,000's	)				
Prior Yr Actual	FY20	FY21	FY	22 F	Y23	FY24	FY	25	FY26+	Toto	1	5-Yr Total		
0	0	9,143	4,940	0		0	C	) 30,	000	30,000				
Phase Task Date	€S													
Phase Task Name	e Start	Date	End Dat	e Dura	tion									
Procurement	1/	/3/2020	6/30/2	020	179									
Project Execution	ז 7/	1/2020	4/6/2	023	1009									
Project Closeout	4/	7/2023	6/30/2	023	84									

GLV	NA				WA FY 202				on Progra		<b>260200</b> C
Great Lakes Wa	ter Authority				and Interc	-		abilitali	-		
Phase Study a	0				Contrac	SI 18	802575		Status Ur	nder Procureme	ent
	,	n Engineerir	ig services	, 							
Brown and Co											
Phase Budge								location			
Phase Statu	us Under Pro	curement					Funding	g Source	Bond Proce	eds	
Start Dat	е							Fund	Constructio	n Bond Fund	
End Dat	e					U	seful Life	>20Yrs?	Yes		
(	Cost Estimat	tion Informa	tion		Tot.	Fede	ral Loan	Amount			\$0
		Cost	Est. Class			Prog	gram/All	owance	Task Inform	ation	
		Cost	Est. Date	1	Project Mana	ger	Mini Pai	nicker			
			Est. Source	. (	CIP Number 260204						
		Cost	Est. Prepar	ed By	Description		Enginee inspecti rehabili design	ering Serv ion result tation me	vices to eva s and recon ethod. Also, pare bid pag	is to provide luate the hmend the best the consultant ckages for the	
Cost 1	уре	Fiscal Ye	ear	Expense	Fringe Bene	fitNor	nPersonr	ne	Comme	ent	
Engineering Se		FY20		\$4,500				2021 CI	Р		
Engineering Se	ervices	FY21		\$500				2021CI	Р		
Engineering Se	ervices	FY22		\$500				2021 CI	Р		
Engineering Se	ervices	FY23		\$500				2021CI	Р		
			Phase To	tal Expense	s By FY (All f	igure	es are in	\$1,000's	;)		
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
0	4,500	500	500	500	0		0	C	6,000	1,500	

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GLWA Great Lakes Water Author	ity		Se		WA FY 202 and Interc				on Progra	m	260200 CIP
Phase Task Name	Start Date	End Date	e Duratio	on							
Procurement	6/1/2019	9 8/31/20	)19	91							
Project Execution	9/1/2019	6/30/20	)23 1	398							
Phase GLWA Emplo	oyees Projec	t managen	nent		Contrac	t NA			Status Ac	tive	
Title GLWA Salarie	S										
Phase Budget Wa	astewater					C	Cost Al	location	CTA		
Phase Status Ac									Bond Proce	eds	
Start Date							onanig				
										n Bond Fund	
End Date						Use	ful Life	>20Yrs?	No		
Cost	Estimation In	formation			Tot.	Federa	l Loan	Amount			\$O
	5	Cost Est. Cl	ass			Progro	am/All	owance	Task Informc	ition	
		Cost Est. Do	otr		Project Mana	-					
					CIP Number						
		Cost Est. Sc									
		Cost Est. Pr	epared By		Description						
									<u> </u>		
Cost Type		cal Year	Expense		Fringe Bene	fi1NONPe	ersonn		Comme	nt	
GLWA Salaries CIP2				\$174				2021CI			
GLWA Salaries CIP2				\$294				2021CI			
GLWA Salaries CIP2				\$256 \$136				2021CII 2021CII			
GLWA Salaries CIP2				\$121				2021CII 2021CII			
OLVVA Salaries Cir 2		1						I			
		Phas	e Total Exp	ense	es By FY (All f	gures	are in	\$1,000's	)		
Prior Yr Actual FY	/20 FY2	21 FY2	22 FY2	23	FY24	FY25		FY26+	Total	5-Yr Total	
174	294	256	136	121	0		0	0	981	513	
Phase Task Dates											
Арр в - Раде з	19										



### Sewer and Interceptor Rehabilitation Program

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	18,637	19,029	12,976	36,047	24,872	15,495	14,347	13,240	154,643	103,737
2020	0	0	13,555	8,609	15,000	15,000	15,000	15,000	15,000	95,000	0	192,164	75,000
2019	0	3,397	7,751	10,601	10,400	11,400	11,400	11,400	11,400	0	0	77,749	55,201
2018		2,612	8,000	8,000	20,000	20,000	20,000		0	0	0	78,612	76,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** Funds changed for CS-168, CON-149, added contract 1802575 to the phases,

Changes



<ul> <li>Innovation</li> <li>Conceptual WW</li> <li>Water MP Right Si</li> <li>Reliability/Redund</li> <li>NEWTP Repurposit</li> </ul>	zing dancy Project New To CIP	Sewer tap piping in B009 outfall (left) and sludge buildup and poor masonry in B007 outfall (right)						
	.9	Budget Wastewater						
Project Engineer/Ma	<b>1ager</b> Mini Panicker	Class Lvl 1 Wastewater						
Di	r <b>ector</b> Biren Saparia	Class Lvl 2 Programs						
Managing	Dept SCC	Class Lvl 3 Programs						
Date Original Busines	s Case Prepared 3/3/2017	Location Multiple Counties						
Year Proje	ect Added to CIP 2017	Fund and Cost Center						
Problem Statement	essential to properly discharge the unco prevent sewer back up into the Convey	N INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is ontrollable combined sewer overflows to the receiving waters and to ance System. Recent inspections of the outfalls revealed structural ir from bricks etc. There are sediment and debris deposits in many of them.						
Scope of Work / Project Alternatives Project Project Projec								

Other Important Info PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

Challenges: Some outfalls are below the river elevation; rehabilitation may be challenging.

Related Project CIP 1357, CS-168

Primary Driver 2 - Performance

GLWA Great Lakes Water Authority						GLWA FY 2021-2025 CIP CSO Outfall Rehabilitation									
Phase GLWA Employees Project management					Contract NA					Status Ac					
Title GLWA Sala	aries														
Phase Budget	Phase Budget Wastewater						Cost Allocation CTA								
Phase Status	hase Status Active					Funding Source Bond Proceeds									
Start Date	Start Date					Fund Construction Bond Fund									
End Date	End Date														
Cost Estimation Information						Tot	. Fede	ral Loai	n Amount			\$0			
	5 Cost Est. Class					Program/Allowance Task Information									
	Cost Est. Date				Project Manager										
	Cost Est. Source					CIP Number									
Cost Est. Prepare					ed By Description										
				,											
Cost Ty	Cost Type Fiscal Year Expen					e Fringe BenefilNonPersonne					nt				
GLWA Salaries C	CIP2021	FY19-		\$1											
GLWA Salaries C	GLWA Salaries CIP2021 FY20			\$121											
GLWA Salaries C	GLWA Salaries CIP2021 FY21			\$121 20				2021CI	2021 CIP						
GLWA Salaries CIP2021 FY22			<u> </u>	\$121 2021CI					Р						
			Phase To	otal Exp	enses	s By FY (All	figure	s are iı	n \$1,000's	)					
Prior Yr Actual	FY20	FY21	FY22	FY2	3	FY24	FY	25	FY26+	Total	5-Yr Total				
1	121	121	12	1	0	0		0	С	364	242				
Phase Task Dat		121	12	1	U	0		0		5 304	242				

**CSO Outfall Rehabilitation** 

260500 CIP#

Phase Construc	rtion					Contrac		Δ		Status Fu	ture Planned S	Start
	struction fo		itfall Reh	abilitation		0011140		Υ.				JIGH
This contract w					of the	CSO outfalls						
Phase Budget Wastewater					Cost Allocation CTA							
Phase Status Future Planned Start					Funding Source Bond Proceeds							
Start Date					Fund Construction Bond Fund							
End Date					Useful Life >20Yrs? Yes							
						Tel						
C	ost Estimat					101.			Amount			
	1	Co	st Est. Clo	288	Program/Allowance Task Information							
	8/31/2017 Cost Est. D		st Est. Da	te	Project Manage		ger	Mini Panicker				
Contractor		Co	st Est. Sov	urce	(	CIP Number		tbd				
Biren Saparia Cost Est. Prepare				pared By	<b>By Description</b> This contract is the rest of the C					e rehabilitatio	n of	
					<u> </u>			1116 1631	OF THE CS	O OUTIGIIS.		
Cost Ty	Cost Type Fiscal Year		Expens	Expense Fringe Benefi			nPersonr	ne	Comme	ent		
Construction	Construction FY21		\$2	2,249				2021 CIP				
Construction			· · · ·	7,340			2021 CIP					
Construction		FY23			1,995				2021CIP			
Construction		FY24		•	0,976				2021CIP			
Construction Construction	Construction FY25 Construction FY26+		-	8,243 4,197		2021 CIP 2021 CIP						
CONSILOCITON		1120+										
						s By FY (All f						
Prior Yr Actual	FY20	FY21	FY2			FY24	FY		FY26+	Total	5-Yr Total	
0	0	2,249	9 7,	.340 11	1,995	10,976		8,243	4,197	45,000	40,803	
Phase Task Do	ites											
Phase Task Na	me Start	Date E	End Date	Duratio	on							
App B - P	age 323											

GLWA Great Lakes Water Authority

<b>GLWA</b>	FY	2021	-2025	CIP	
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**CSO Outfall Rehabilitation** 

260500 CIP#

<b>hase</b> not appli	cable				Contra	ct NA			Status	Close	ed Out	
tle Prior Year	Actual Exp	enses										
Phase Budget	Wastewat	er				C	ost A	llocation C	TA			
Phase Status	Closed Ou	Jt				Fu	ndin	ig Source B	ond Pro	ceed	ls	
Start Date								Fund C	: onstruc	tion B	Bond Fund	
End Date						Usef	ul Life	e >20Yrs? N	0			
C	ost Estimati	ion Informo	ition		Tot	. Federal	Loar	n Amount				\$0
	1	Cost	Est. Class			Progra	m/A	llowance To	ask Infor	matic	on	
		Cost	Est. Date		Project Man	ager						
		Cost	Est. Source		CIP Number							
		Cost	Est. Prepare	ed By	Description							
Cost Ty	pe	Fiscal Ye	ear E		Fringe Ben	efilNonPe	erson	ne	Com	ment		
n/a		FY19-		\$9				2021 CIP				
			Phase Tot	al Expense	s By FY (All	figures a	ıre ir	n \$1,000's)				
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25		FY26+	Total		5-Yr Total	
9	0	0	0	0	0		0	0		9	0	

#### Phase Task Dates

GLWA Great Lakes Water Authority

GLWA	GLWA	FY 2021		P abilitatio	<b>n</b>		260500 CIP
Great Lakes Water Authority							
Phase Construction Title Rehabilitation of CSO Outfall Phase 1		Contract	CON-26U	)	Status Clo	osed Out	
Phase Budget Wastewater			Cost	Allocation	<u>^τδ</u>		
Phase Status Closed Out				L	Bond Proce	ade	
Start Date			ronan			n Bond Fund	
			lleoful Li	L			
End Date	_			e >20Yrs?	res		
Cost Estimation Information		Tot. Fe	deral Loa	n Amount			\$0
1 Cost Est. Class		F	Program/A	llowance 1	ask Informa	ition	
Cost Est. Date	Proj	ject Manage	er Mini Po	anicker			
Bid Cost Est. Source	CIP	Number	260502	2			
Mini Panicker Cost Est. Prepared B	by Des	scription	10 we Rehak repair	re complet pilitation inc	ed under th luded cleai gate rehab	B-3, B-5, B-7, and B-3, B-7, and B-3, B-5, B-7, and B-5, B-7, B-7, B-7, B-7, B-7, B-7, B-7, B-7	
Cost Type Fiscal Year Expe	ense Fri	inge Benefit	NonPersor	nne	Comme	nt	
Construction FY19-	\$3,321			2021 CIF	)		
Construction FY20	\$213			2021 CIF	)		
Phase Total E	xpenses By	y FY (All fig	ures are i	n \$1,000's)			
Prior Yr Actual FY20 FY21 FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
3,321 213 0 0	0	0	0	0	3,534	0	
	ation						
Project Execution 8/1/2018 7/26/2019	359						

GLV Great Lakes Wat	VA r Authority			GL	WA FY 202 CSO C			P abilitatio	n		260500
hase Construc	ction				Contra	<b>ct</b> 19	9000796	, >	Status Un	der Procureme	ent
tle CSO Outf	all Rehabili	tation Phas	e 2								
This contract is	to provide	rehabilitati	ion for nin	e (9) GLWA (	Dutfalls (B-6, I	8-1 <i>5,</i> E	B-17, B-2	20, B-23, B-2	24, B-31, B-36	6, and B-45)	
Phase Budge	Wastewat	er					Cost /	Allocation	CTA		
Phase Status	Under Pro	curement					Fundiı	ng Source	Bond Proce	eds	
Start Date								Fund	Constructior	n Bond Fund	
End Date	•					U	lseful Lif	fe >20Yrs?	Yes		
C	ost Estimat	ion Informa	ition		Tot	Fede	eral Loa	n Amount			\$0
		Cost	Est. Class			Pro	gram/A	llowance	ask Informa	ition	
		Cost	Est. Date		Project Mana	ıger	Mini Po	anicker			
		Cost	Est. Sourc	e	CIP Number		260504	4			
			Est. Prepa		Description		This co	ontract will	provide rep	air work for nin	e (9)
		0031		ica by			GLWA	Outfalls (B	-6, B-15, B-17	7, B-20, B-23, B-2	
									5). The const	iruction Inder CS-168	
							docor				
Cost T	/pe	Fiscal Ye	ear	Expense	Fringe Bene	efitNo	nPersor	nne	Comme	nt	
Construction		FY20		\$2,759				2021 CIF	)		
onstruction		FY21		\$2,741				2021 CIF	)		
			Phase To	otal Expense	s By FY (All	igure	es are i	in \$1,000's)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY	′25	FY26+	Total	5-Yr Total	
0	2,759	2,741	(	0 0	0		0	0	5,500	2,741	
hase Task Do	ites										
Phase Task Na	me Start [	Date End	d Date	Duration							
Project Executi	on 7/1	/2019 6	/30/2021	730							

Great Lakes Water	<b>Authority</b>		GLWA FY 2021-20 CSO Outfo	)25 CIP II Rehabilitatio	n		260500 CIP
Phase Design ar	nd Build		Contract TE	BD	Status	Future Planned Sta	rt
Title New Engin	neering Services and Construction	on for tl	ne CSO Outfall Rehabili	itation			
This contract wi outfalls.	ill provide Engineering Services	and Re	sident Project Represer	ntation for the reh	abilitati	on of the rest of the (	CSO
Phase Budget	Wastewater			Cost Allocation	CTA		
Phase Status	Future Planned Start			Funding Source	Bond Pr	roceeds	
Start Date				Fund	Constru	uction Bond Fund	
End Date		]	U	seful Life >20Yrs?	Yes		
Co	ost Estimation Information		Tot. Fede	eral Loan Amount		\$(	0
	Cost Est. Class		Pro	gram/Allowance	Task Inf	ormation	
	Cost Est. Date		Project Manager	Mini Panicker			
	Cost Est. Source	è	CIP Number	TBD			
	Cost Est. Prepar	ed By	Description			e Engineering Service presentation for the	es
			•		•	of the CSO outfalls.	

# Phase Total Expenses By FY (All figures are in \$1,000's)

GLW Great Lakes Water	<b>Authority</b>				GLW	A FY 202 CSO C			bilitatior	n		260500 CI
Phase Construct	tion					Contra	ct TB	BD		Status Fut	ure Planned S <sup>.</sup>	art
Title Rehabilitat	tion of GLW	/A Outfall	s-Phase IV									
This Contract is 27, B-28, and B-2					-				utfalls B-9, E	8-12, B-14, B	16, B-18, B-19,	321, B-22, B-
Phase Budget			docomen		repure		,5-100		llocation (	CTA		
Phase Status								Funding	g Source B	ond Procee	eds	
Start Date											n Bond Fund	
End Date							U	seful Life	e >20Yrs? Y			
<u> </u>	ost Estimatio	on Inform	ation			Tot	Fede	eral Loan	Amount			\$0
			Est. Class							ask Informa	tion	Ψ <sup>0</sup>
			Est. Date		Pro	oject Mana		Mini Pa				
			Est. Sourc			P Number		260505				
						scription			ntract is fo	r the constr	uction of the	
		Cosi	Est. Prepa	геа ву		Selipholi		rehabili for CSC	itation desi Outfalls B	igns prepar	ed under CS-1 4, B16, B-18, B-	
Cost Ty	oe	Fiscal \	'ear	Expense	F	ringe Bene	efitNo	nPersonr	ne	Comme	nt	
Construction		FY20		\$1,7		0			2021CIP			
Construction		FY21		\$6,5	595				2021 CIP			
Construction		FY22		\$1,6	695				2021 CIP			
			Phase To	otal Expe	nses E	By FY (All	figure	es are in	\$1,000's)			
Prior Yr Actual	FY20	FY21	FY22	FY23	3	FY24	FY	25	FY26+	Total	5-Yr Total	
0	1,709	6,595	1,69	5	0	0		0	0	9,999	8,290	
Phase Task Dat	es											
Phase Task Nam		ate Er	nd Date	Duration	า							
Project Executio		/2019	6/30/2022	10	)95							
App B - Pa	ge 328											



GLWA FY 2021-2025 CIP CSO Outfall Rehabilitation

# Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	3,331	4,802	11,706	9,156	11,995	10,976	8,243	4,197	64,406	52,076
2020	0	0	9	4,000	15,102	17,947	10,926	15,102	15,102	11,000	0	89,188	74,179
2019	0			507	3,826	10,001	10,001	10,001	10,001	0	0	44,337	34,336
2018			6,000	6,000	6,000	6,000	6,000	6,000	0	0	0	36,000	30,000

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30



260600 CIP#

#### Innovation

□ Conceptual WW MP

- □ Water MP Right Sizing
- ✓ Reliability/Redundancy

Project Engineer/Manager Chris Nastally

Managing Dept CSO

Date Original Business Case Prepared 7/27/2016

Year Project Added to CIP 2017

**Director** Chris Nastally

□ NEWTP Repurposing

Project Status Active

CIP Type Program

Project New To CIP

Retrofitted chemical feed pump replacement at Puritan-Fenkell RTB and makeshift wooden stairs to enter Basin Valve Gallery



Budget	Wastewater
Class Lvl 1	Wastewater
Class Lvl 2	Programs
Class LvI 3	Programs
Location	Multiple Counties
Fund and Cost Center	Wastewater - 5421-892211

Problem Statement This program is being established to facilitate the study, design, construction administration, and construction of improvements necessary to maintain the facilities which contribute to the CSO Control Program and compliance herewith.

Scope of Work / This program is intended to include studies, design, construction administration, and construction projects which **Project Alternatives** serve to improve process areas or functions of the CSO Facilities. The overall scope of this program is to complete the following: The CS-299 (Facilities Assessment Project) will have projects that need to be programmed into the CIP over time, Replacement of CSO Facilities Fire Alarm Systems; Structural Condition Assessment Design/Build project; and flushing improvements to Baby Creek CSO Facility. A direct product of the Needs/Condition Assessment and SRP is identification of facility needs with projects identified, prioritized, and conceptual cost estimates. From this output, RFP's will be developed to address these needs. For this purpose, Design and Construction dollars have been identified in the later years of this Program to facilitate design and construction of those identified needs. It is anticipated that the primary drivers of these improvements will be obsolescence/end of service life, excessive O&M problems, reliability, efficiency and system standardization which arise from feedback from operation & maintenance, the scheduled replacement plan, and the needs/condition assessment. Following completion of the Wastewater Master Plan, new projects may be otherwise defined which will be incorporated into the CIP. These projects will likely be entered into the CIP as stand-alone projects rather than falling under this program. Furthermore, upon completion of the NPDES permit, new regulatory requirements may arise which require capital improvements. Depending on the nature of those improvements, they may be stand-alone projects or fall within the elements of this Program.



Additionaly, the latest NPDES permit as well as previous ones, given recognition to the Long Term CSO Control Plan and the requirements that outfalls which are high priority non core be addressed by 2037. Part and parcel to this is the development of a refreshed Long Term CSO Control plan to be submitted to the DEQ by 11/15/2022. The new Long Term CSO Control Plan will begin forging a path of Long Term CSO Control and will identify how GLWA will work towards addressing the requirements of the NPDES permit. The intent with the LT Plan is to construct high impact low-cost (relatively speaking) projects in years 5 through 10 of the LT Plan. Then in years 10 through 20 the more expensive improvements are expected to be made. Previous versions of the Long Term CSO Control is required to be in compliance with the NPDES permit and therefore GLWA is attempting to begin accounting for and planning for this work in our long term financial planning for the CIP. As the Wastewater Masterplan and Long Term CSO Control Plans will become more vivid.

#### Other Important Info (Replaces CIP1313).

Project History: The GLWA CSO Control Program consists of the operations of 6 CSO RTB's, and 3 Screening & Disinfection Facilities (SDF). The fundamental difference between the SDF's and the RTB's is the presence of a bonafied basin versus a large diameter, long effluent pipe/ outfall. The long outfall (SDF) functionally serves a purpose similar to the basin (RTB) in terms of storage of combined sewer overflow during a rain event. As a result, the SDF's are fundamentally more difficult to keep clean than the RTB's because flushing systems must transport settled solids (after a storm) long distances to leave the effluent pipe. The CSO Facilities average age is around 15 years with the oldest facilities being constructed in 1994 and the most recent facility being constructed in 2011. A scheduled replacement plan was completed in 2013, which is now out of date, and a high level Needs Assessment conducted in 2016, which didn't identify large scale projects or priorities based on condition other than those of emergency nature. Projects resulting from the 2016 NA were largely emergency projects in nature. A Goal of this program includes standardization of the systems utilized at each facility, as well as improving operational & maintenance conditions at each facility. Given the eras in which the facilities were constructed, and being part of demonstration projects, they have differing technology which makes maintenance and operations duties more difficult. Another goal of this program is to improve the operating conditions of facility assets to increase reliability, efficiency, and compliance with all GLWA regulatory and other levels of service.

Challenges: As this program starts off, there is a lot of design RFPs in the beginning which will lead to la refined projects aimed at improving operations, which lead to RFPs for design and large scale construction projects in the later years (3-5). A significant challenge to be faced will be maintaining the CSO facilities in current operations without the benefit of large-scale improvements of the CSO Systems. Another significant challenge of this program will be unforeseen conditions that may be encountered as facility inspections & condition assessments



#### **CSO FACILITIES IMPROVEMENT PROGRAM**

begin. For example, finding significant structural distress of a basin could lead to increase of budget or extension of timeline of improvements. Considering much of the equipment/systems identified for inclusion in this program are at or near obsolescence or are actively causing O&M issues, delays in improvements could possibly cause operational or compliance issues.

Related Project The proposed new CIP budget for rehabilitation for all the CSO RTB and SDF facilities is based on the 2016 Needs Assessment Study Report and condition assessment performed under CS-1499, Task 18. The condition assessment identified deficient process equipment, systems and deteriorating structural conditions that required near-term remedial work at the three RTB's: the Puritan-Fenkell Basin and dry weather pump station (completed in 1998) under PC-697), the Seven Mile (Completed in 1999 under PC-696) and the Conner Creek (completed in 2005 under PC-739). The 2016 Needs Assessment Facility walkthrough have identified that CSO RTB and SDF's at Hubbell Southfield, St. Aubin & Leib, Baby Creek and Bell Isle needs rehabilitation. The Puritan-Fenkell and Seven Mile RTB's will be combined with this new capital improvements plan for all the remaining CSO facilities. GLWA staff have identified that Conner Creek CSO facility rehabilitation is critical to the wastewater operation and few projects has initiated as an emergency repair work. Due to recent rain events under emergency repair activities the following scope items at GLWA's Conner Creek CSO RTB are ongoing; Install additional automation, continue repairs to existing automation, replace five sodium hypochlorite pumps, repair piping leaks and relocate piping for the flushing water system, replace 5 Accusonic meters upstream, replace electrical power and controls raceway above the RTB, replace emergency relief gates causing concrete damage, replace all disinfection valves, replace all insulation and heat taping for exposed sodium hypochlorite lines, replace all sodium hypochlorite mixers in the channels. The above Conner Creek CSO RTB facility emergency repair list include only operation critical rehabilitation needs to avoid flooding's, the remaining non critical rehabilitation needs identified in the Needs Assessment Report will be addressed through this proposed project at this facility.

#### Primary Driver Varies

**Driver Explanation** The chemical feed system pumps, valves, gates, dewatering and sampling pumps are old and critical to the CSO RTB and SDF treatment processes meeting permit requirements.

# GLWA Great Lakes Water Authority

# GLWA FY 2021-2025 CIP

# **CSO FACILITIES IMPROVEMENT PROGRAM**

Phase Construction		Contract	TBD		Status Fut	ure Planned S	Start
Title 260617 - St. Aubin Screening & Chemica	l System Impro	ovements (Con	struction Se	ervices)			
This phase will construct improvements design phase.	ned for the ch	emical disinfec	tion and sc	creening sy	stems at St.	Aubin in the	s/d/ca
Phase Budget Wastewater			Cost A	llocation C	SO 83/17		
Phase Status Future Planned Start			Fundin	g Source B	ond Procee	eds	
Start Date				Fund C	Constructior	n Bond Fund	
End Date			Useful Life	e >20Yrs? Y	es		
Cost Estimation Information		Tot. Fe	ederal Loan	n Amount			\$0
5 Cost Est. Class			Program/Al	llowance To	ask Informa	tion	
7/24/2019 Cost Est. Date	F	Project Manag	er Chris N	astally			
CSO Manager Cost Est. Source	e (	CIP Number	260617	,			
CsO Manager Cost Est. Prepa	ared By	Description				and likely the	
			Constru CSO C core ou	uction of ne ontrol impr utfalls on th	etting faciliti ovements fo	will recomme ies as low-cos or high priorit nd Detroit Riv is.	st y non-
Cost Type Fiscal Year	Expense	Fringe Benefit	NonPerson	ne	Comme	nt	
Construction FY21	\$92			2021 CIP			
Construction FY22	\$708			2021 CIP			
Phase T	otal Expense	s By FY (All fig	ures are ir	n \$1,000's)			
Prior Yr Actual FY20 FY21 FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
0 0 92 70	8 0	0	0	0	800	800	
Phase Task Dates Phase Task Name Start Date End Date App B - Page 333	Duration						



Phase Task Name	Start Date	End Date	Duration
Project Execution	3/16/2021	3/15/2022	364
Project Closeout	3/16/2022	6/13/2022	89



260600 CIP#

#### Phase Study and Design and Construction Assistance

Contract TBD

Status Future Planned Start

low end (where most events are) and properly

#### Title 260617 - St. Aubin Screening & Chemical System Improvements (Design Services)

The St. Aubin SDF is nearly 20 years old. A study was conducted on the disinfection system and the screens were assessed by the manufacturer and recommendations resulted in upgrade of these systems to restore operational control, flexibility, and reliability. The current pumping system for NaOCI is over-sized (dose of 38 mg/L - when only 10 mg/L is required from sampling). The over-sized system makes it difficult to dial the pumps down on the low end (where most events are) and properly dose (without over-dosing) the water. As a result, operators tend to turn them on and off (plug flow), to meet permit limits. This is not the best for the equipment, water quality, or operations. Furthermore, the screens currently get blinded and then the rake mechanism trips out. There is a new control system for these screens offered by the manufacturer that would allow us to upgrade the controls of the screen and reduce it fully tripping out so that it will continue to rake parts of the screen during an event rather than tripping out and raking none of the scree. This phase endeavors to further evaluate this, design improvements, offer CA, and then bid out for construction. This phase will also provide construction assistance during construction (shop drawing review, as needed inspection, rfi response, attending progress meetings, etc.)

Phase Budget Wastewater			<b>Cost Allocation</b>	CSO 83/17
Phase Status Future Planr	ned Start		Funding Source	Bond Proceeds
Start Date			Fund	Construction Bond Fund
End Date		ι	Jseful Life >20Yrs?	Yes
Cost Estimation	n Information	Tot. Fede	eral Loan Amount	\$0
5	Cost Est. Class	Pro	gram/Allowance	Task Information
7/24/2019	Cost Est. Date	Project Manager	Chris Nastally	
CSO Manager	Cost Est. Source	CIP Number	260617	
CSO Manager	Cost Est. Prepared By	Description	was conducted the screens were manufacturer and in upgrade of the operational con The current purp sized (dose of 38 required from so	F is nearly 20 years old. A study on the disinfection system and e assessed by the nd recommendations resulted ese systems to restore trol, flexibility, and reliability. uping system for NaOCI is over- B mg/L - when only 10 mg/L is impling). The over-sized system to dial the pumps down on the



dose (without over-dosing) the water. As a result, operators tend to turn them on and off (plug flow), to meet permit limits. This is not the best for the equipment, water quality, or operations. Furthermore, the screens currently get blinded and then the rake mechanism trips out. There is a new control system for these screens offered by the manufacturer that would allow us to upgrade the controls of the screen and reduce it fully tripping out so that it will continue to rake parts of the screen during an event rather than tripping out and raking none of the scree. This phase endeavors to further evaluate this, design improvements, offer CA, and then bid out for construction.

Cost Type	Fiscal Year	Expense	Fringe Benefit	NonPersonne	Comment
Engineering Services	FY20	\$155			2021CIP
Engineering Services	FY21	\$174			2021 CIP
Engineering Services	FY22	\$61			2021CIP

Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total
0	155	174	61	0	0	0	0	390	235



260600 CIP#

#### **Phase** Study and Design and Construction Assistance

Contract TBD

Status Future Planned Start

ventilated and safe to enter. As a result of this, the door is left open nearly year round. This practice led to freezing of the fire sprinkler

#### Title 260618 - Oakwood CSO Facility HVAC Improvements Project (Design Services)

A study was completed in January of 2019 to evaluate the Sanitary Pumping and Storm Pumping systems at Oakwood CSO RTB. In the sanitary pump room, there is heavy corrosion and the gas detection system is constantly going off causing operators to leave the overhead door open to keep the space ventilated and safe to enter. As a result of this, the door is left open nearly year round. This practice led to freezing of the fire sprinkler system in January of 2019 and resulted in repair work to fix the sprinkler lines that were damaged. The study conducted in January of 2019 concluded that the ventilation system (supply and exhaust) for the wet-well and sanitary pumping room is inadequate. Currently the combination of exhaust fans and odor control system pull too much air from the wet-well (more than the supply fans put in) and have created a negative air pressure where we are constantly drawing air from the sewer (wetwell) into the sanitary pump room air space. This is causing the gas and corrosion issues and requires resolution. The HVAC exhaust/supply fans are currently entombed in a small area at the facility and are difficult to service or replace. This project will examine equipment access as well as a balanced air for the space. The fans also have some significant corrosion to them and may require complete replacement. This project will also cover construction assistance during construction for RFI's, submittal review, progress meetings, etc.

		Cost Allocation	CSO 83/17
ned Start		Funding Source	Bond Proceeds
		Fund	Construction Bond Fund
	U	lseful Life >20Yrs?	Yes
n Information	Tot. Fede	eral Loan Amount	\$0
Cost Est. Class	Pro	gram/Allowance	Task Information
Cost Est. Date	Project Manager	Chris Nastally	
Cost Est. Source	CIP Number	260618	
Cost Est. Prepared By	Description	evaluate the San Pumping system sanitary pump ro and the gas det going off causin	npleted in January of 2019 to nitary Pumping and Storm s at Oakwood CSO RTB. In the pom, there is heavy corrosion ection system is constantly g operators to leave the open to keep the space
	Cost Est. Date Cost Est. Source	ned Start U Tot. Fede Cost Est. Class Cost Est. Date Cost Est. Source CiP Number	In ed Start Funding Source   Image: Source Funding Source   Image: Source Start   Image: Source Start   Image: Source Cost Est. Source   Image: Source CiP Number   Image: Source Start   Image: Source Start <tr< td=""></tr<>



system in January of 2019 and resulted in repair work to fix the sprinkler lines that were damaged. The study conducted in January of 2019 concluded that the ventilation system (supply and exhaust) for the wet-well and sanitary pumping room is inadequate. Currently the combination of exhaust fans and odor control system pull too much air from the wet-well (more than the supply fans put in) and have created a negative air pressure where we are constantly drawing air from the sewer (wetwell) into the sanitary pump room air space. This is causing the gas and corrosion issues and requires resolution. The HVAC exhaust/supply fans are currently entombed in a small area at the facility and are difficult to service or replace. This project will examine equipment access as well as a balanced air for the space. The fans also have some significant corrosion to them and may require complete replacement. This project will also cover construction assistance during construction for RFI's, submittal review, progress meetings, etc.

ingineering Services FY21 \$254 2021 CIP	Cost Type         Fiscal Year         Expense         Fringe Benefit NonPersonne         Comment											
	Engineering Services	FY20	\$96			2021 CIP						
ingineering Services FY22 \$98 2021 CIP	Engineering Services	FY21	\$254			2021CIP						
	Engineering Services	FY22	\$98			2021 CIP						
ingineering Services FY23 \$92 2021 CIP	Engineering Services	FY23	\$92			2021CIP						

Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total
0	96	254	98	92	0	0	0	540	444



260600 CIP#

Phase Task Name	Start Date	End Date	Duration
Project Execution	12/15/2019	5/5/2023	1237

GLW Great Lakes Water	<b>Authority</b>					VA FY 202 FACILITIE				ROGRAM		260600 CI
Phase Construc	tion					Contra	ct ]	802791		Status Ac	ctive	
<b>Title</b> 260606 - Pt	uritan Fenk	ell Roof R	eplacen	nent - Con	istructi	on						
Puritan Fenkell F replacement.		,		0				,		0	, ,	nd requires
Phase Budget	Wastewat	er						Cost A	llocation	CSO 83/17		
Phase Status	Active											
Start Date									Fund	Constructio	n Bond Fund	
End Date							ι	Jseful Life	e >20Yrs?	Yes		
						Tel			l	103		
Co	ost Estimat	ion Inform	nation			IOT	rea	eral Loar	n Amount			\$0
	1	Cos	st Est. Cla	SS			Pro	gram/A	llowance	Task Inform	ation	
12	/18/2018	Cos	st Est. Dat	е	Р	roject Man	ager	Matthe	ew Krieger			
Contractors B	ID	Cos	st Est. Sou	rce	С	CIP Number		260606				
Royal Roofing	1	Cos	st Est. Pre	oared By	D	escription		Puritan	Fenkell Ro	oof Replace	ement	
	,											
Cost Ty	ре	Fiscal	Year	Expens	е	Fringe Bene	əfilNc	nPerson	ne	Comme	ent	
Construction		FY20			\$350				2021 CII	P		
			Phase	Total Exp	enses	By FY (All	figur	es are ir	n \$1,000's	)		
Prior Yr Actual	FY20	FY21	FY22	P FY2	23	FY24	F١	Y25	FY26+	Total	5-Yr Total	
0	350	0	)	0	0	0		0	0	350	0	
				I				I				
Phase Task Dat												
Phase Task Nan			nd Date	Duratio								
Procurement			2/27/201		117							
Project Executio		/2019	9/1/201		213							
Project Closeou	I   ∀/∡	2/2019	10/1/201	7	29							



# **CSO FACILITIES IMPROVEMENT PROGRAM**

260600 CIP#

Phase Construction	on					Contro	act TB	D		Status	uture Planned	Start
litle 260618 - Oa	kwood (	CSO Fac	cility HVA	C Improv	ements	Project (Co	nstruct	on Serv	rices)			
This phase will co	nstruct ir	nprove	ments de	signed d	uring th	e design ser	vices p	hase of	f this projec	ct.		
Phase Budget V	Vastewa	ter						Cost A	llocation	CSO 83/1	7	
Phase Status F	uture Pla	inned S	tart		Funding Source Bond Proceeds							
Start Date									Fund	Construct	ion Bond Fund	
End Date							U	seful Lif	e >20Yrs?	Yes		
Cos	t Estimat	ion Info	rmation			То	t. Fede	ral Loai	n Amount			\$0
												ΨŬ
	5		Cost Est. C							a Task Information		
7/2	/23/2019 Cost Est. Date		ate	Project Manager Chris Nastally			,					
CSO Manager	er Cost Est. Source		ource									
CSO Manager		C	Cost Est. Pi	epared I	Зу	Description			ed during		provements n services phase	e of
Cost Type	Э	Fisc	al Year	Expe	ense	Fringe Ber	efilNo	nPerson	ine	Comn	nent	
Construction		FY22			\$1,315	-		2021 CIP				
Construction		FY23			\$485	\$485 2021CIP						
			Phas	e Total I	xpense	es By FY (Al	figure	es are i	n \$1,000's)			
Prior Yr Actual I	-Y20	FY21	FY	22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
0	0		0	1,315	485	0		0	0	1,80	00 1,800	
Phase Task Date	S											
Phase Task Name	e Start I	Date	End Dat	e Dur	ation							
Procurement	6/7	7/2021	8/5/2	021	59							
Project Execution	8/0	6/2021	2/4/2	023	547							
Project Closeout	2/	5/2023	5/5/2	023	89							

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GLWA Great Lakes Water Authority	GLWA FY 2021-202 CSO FACILITIES IMPI	25 CIP PROVEMENT PROGRA	260600 CIP M
Phase Design and Build	Contract DB-	3-261 Status	Active
Title 260602 - CSO Fire Alarm Improvement Project			

		olace the fire alarm panels o unctional and to meet the st			B. Oakwood is just receiving some n.
Phase Budget	Wastewate	er		Cost Allocation	CSO 83/17
Phase Status	Active			Funding Source	Bond Proceeds
Start Date		5/9/2018		Fund	Construction Bond Fund
End Date		12/31/2019	ι	Jseful Life >20Yrs?	No
C	ost Estimatio	on Information	Tot. Fede	eral Loan Amount	\$0
	1	Cost Est. Class	Pro	gram/Allowance	Task Information
7	7/31/2019	Cost Est. Date	Project Manager	Chris Nastally	
Construction	Bid	Cost Est. Source	CIP Number	260602	
ΡΜΑ		Cost Est. Prepared By	Description	all CSO Fire Alar Controls (Simple the CSO Facilitie one facility in wh repalced and o occurring is Oak	udes replacement/upgrading ms to a standardized Johnson ex) Fire Alarm System. Eight of es include replacement. The hich the panel is not being nly minor system repairs are swood. The Oakwood panel is est fire control panel system.
Cost Iv	(D.D.	Eiscal Vear Expense	Eringe BenefitNo	nPorsonno	Comment

Cost Type	Cost Type Fiscal Year		ear	Expense Fringe BenefilNonPersonr			nne	e Comment				
Design-Build		FY19-		\$816				2021 CIF		CIP		
Design-Build		FY20		\$143					2021 CIF	)		
Phase Total Expenses By FY (All figures are in \$1,000's)												
Prior Yr Actual F	Y20	FY21	FY22	2	FY23	FY24		FY25	FY26+	Total	5-Yr Total	

Phase Task Dates

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GLV Great Lakes Wat	<b>VA</b> ter Authority			(		WA FY 2021 D FACILITIES			MENT P	ROGRAM		260600 CI
Phase Task Na	ime Start	Date	End Date	Duratio	n							
Project Executi	ion 6/	1/2018	10/1/20	l <b>9</b>	487							
Project Closeo	ut 10/	2/2019	12/31/20	9	90							
Phase Construe	ction					Contract	CO	V-219		Status Cla	osed Out	
<b>Title</b> 260604 - E	Baby Creek	CSO Fo	acility Influe	ent Area Im	ıpro	vements						
Installation of a	accusonic	flow me	ters and a	ccess hatcl	hes/	manholes at Bc	aby C	reek to	facilitate	e future mai	ntenance.	
Phase Budge	<b>H</b> Wastewa	ter					C	Cost All	ocation	CSO 83/17		
Phase Statu	s Closed O	ut					F	unding	Source	Bond Proce	eds	
Start Date	2								Fund	I&E/Bond		
End Date							الدم	ful Lifo	>20Yrs?			
									l	105		
C	Cost Estimat	ion Info	rmation			Tot. Fe	edera	l Loan	Amount			\$0
	1	С	ost Est. Clo	ISS		I	Progre	am/Allo	wance	Task Informo	ition	
1	0/12/2017	С	ost Est. Da	le		Project Manage	er C	Gary Sto	oll			
Lakeshore G	Jobal Bid	С	ost Est. Sou	rce		CIP Number	2	60604				
Lakeshore G	Jobal	С	ost Est. Pre	pared By		Description	Ir	nstallati	on of flov	w meters, m	anholes and	
							a	ccess l	natches.			
Cost T		Fire	al Year	Eveness		Eringo Ronofil	NonD	oriona		Comme	nt	
Cost T Construction	уре	FY19-		Expense	; 5746	Fringe Benefit	NONF	ersonn	2021CII			
Construction		1117-										
			Phase	Total Expe	ense	es By FY (All fig	ures	are in	\$1,000's	)		
Prior Yr Actual	FY20	FY21	FY2	2 FY2	3	FY24	FY25		FY26+	Total	5-Yr Total	
746	0		0	0	0	0		0	0	746	0	
Phase Task Do	ates											
Phase Task Na	ime Start	Date	End Date	Duratio	n							
Project Executi	ion 2/	1/2018	3/31/20	9	423							

GLWA Great Lakes Water Authority

# **CSO FACILITIES IMPROVEMENT PROGRAM**

Phase Construction	n					Contro	ict 18	302475		Status	Act	ive	
Title 260607 - Leib	SDF Elec	ctrical Imp	proveme	nts									
Replacement of c	comprom	nised elec	trical co	nduits, ar	nd eq	uipment. Re	eplace	ement c	of corroded	d pipe ho	ange	er system.	
Phase Budget W	astewate	er						Cost A	Allocation	CSO 83/	17		
Phase Status Ac	ctive							Fundir	ng Source	Bond Pro	cee	eds	
Start Date			2/1/20	19					Fund	I&E/Bond	k		
End Date			1/31/20	20			ι	lseful Lif	e >20Yrs?	Yes			
Cost	Estimatio	on Inform	ation		1	То	l. Fede	eral Loa	n Amount				\$0
	1	Cost	Est. Clas	S			Pro	aram/A	llowance	Task Info	rmat	lion	
7/3	1/2019		Est. Date		1	Project Man		- ·	nira Patel				
Construction Bic			Est. Sou			CIP Number		260607	7				
РМА	A		Est. Prep			Description		Repla	cing condu	uits and e	aui	omenet	
		003	231. 110		1			compi condu	romised by	/ water ir cing con	nfiltro duit	•	m
Cost Type		Fiscal Y	'ear	Expens	se	Fringe Ben	efitNo	nPersor	ne	Com	mer	nt	
Construction		FY19-		•	\$215	i iliigo bori			2021 CIF				
Construction		FY20			\$701				2021CI				
			Phase	Total Exp	oense	s By FY (All	figure	es are i	n \$1,000's)	)			
Prior Yr Actual F	Y20	FY21	FY22	FY	23	FY24	FΥ	25	FY26+	Tota		5-Yr Total	
215	701	0		0	0	0		0	0		916	0	
Phase Task Dates	;												
Phase Task Name	Start D	ate Er	nd Date	Durati	on								
Procurement	10/1/	/2018	1/31/2019	>	122								
Project Execution	2/1/	/2019	12/2/2019	>	304								
Project Closeout		/2019	1/31/2020	)	59								



**CSO FACILITIES IMPROVEMENT PROGRAM** 

<b>hase</b> GLWA Er <b>itle</b> General -	mployees P GLWA Salc	•	agement		Contrac	CT NA		Status Ac	tive
Phase Budge	<b>W</b> astewat	er				Cost A	llocation	CSO 83/17	
Phase Status	Active					Fundir	ng Source	Revenue Fin	anced Capital
Start Date	•						Fund	Improvemer	nt & Extension Fu
End Date						Useful Lif	e >20Yrs?	No	
C	ost Estimati	on Informa	tion		Tot.	Federal Loa	n Amount		\$(
	5	Cost	Est. Class			Program/A	llowance 1	ask Informa	ition
		Cost	Est. Date	F	Project Manc	Iger			
		Cost	Est. Source	(	CIP Number				
		Cost	Est. Prepar	ed By	Description				
Cost Ty	/ne	Fiscal Ye	ear l		Fringe Bene	filNonPerson	ine	Comme	nt
GLWA Salaries		FY19-		\$306			2021 CIF		
GLWA Salaries	CIP2021	FY20		\$1,219			2021 CIF	ס	
GLWA Salaries	CIP2021	FY21		\$595			2021 CIF	D	
		FY22		<b>*••••</b>			2021 CIF	2	
GLWA Salaries				\$319			ZUZICI		
GLWA Salaries GLWA Salaries		FY23		\$319 \$189			2021CIF		
	CIP2021			•				כ	
GLWA Salaries	CIP2021 CIP2021	FY23		\$189			2021 CIF	2 2	
GLWA Salaries GLWA Salaries	CIP2021 CIP2021	FY23 FY24	Phase Tot	\$189 \$87 \$30	s By FY (All f	igures are i	2021 CIF 2021 CIF 2021 CIF		
GLWA Salaries GLWA Salaries	CIP2021 CIP2021	FY23 FY24	Phase Tot FY22	\$189 \$87 \$30	s By FY (All 1 FY24	<b>igures are i</b> FY25	2021 CIF 2021 CIF 2021 CIF		5-Yr Total

### **CSO FACILITIES IMPROVEMENT PROGRAM**

GLW Great Lakes Water	VA r Authority				GLWA FY			P Ement Pr	OGRAM	٨	260600 CIF
Phase not appli	icable				С	ontract	NA		Status (	Closed Out	
Title Prior Year	Actual Exp	benses									
Phase Budget	Wastewa	ter					Cost A	Allocation (	CSO 83/17	,	
Phase Status	Closed O	ut					Fundir	ng Source			
Start Date								Fund			
End Date							Useful Lif	e >20Yrs?	10		
С	ost Estimat	ion Informa	lion			Tot. Fea	deral Loai	n Amount			
	1	Cost I	st. Class			Pr	ogram/A	llowance T	ask Inforn	nation	
		Cost I	st. Date		Project	Manage	r				
		Cost I	st. Source		CIP Nur	nber					
		Cost I	st. Prepare	ed By	Descrip	tion					
			Phase Tot	al Expe	nses By FY	′ (All figu	res are i	n \$1,000's)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	4 i	FY25	FY26+	Total	5-Yr Total	
-1,211	0	0	0		0	0	0	0	-1,21	1 0	
Phase Task Da	tes										



260600 CIP#

#### **CSO FACILITIES IMPROVEMENT PROGRAM**

Phase To Be Determined

Contract NA

Status Future Planned Start

Title TBD - Unallocated - S/D/CA/C/DB

This phase includes acknowledgement of the following projects which stem from other efforts and GLWA understands that a project is needed, but at this time has a very limited scope identified. Given the limited scope, costs for these projects rolled up under Unallocated costs are a ASCE class 5 estimate.

Leib SDF Improvements (WWMP & CS-299 driven). This project is a predecessor project to the Meldrum Diversion project. This project at this point doesn't have any scope or information associated with it other than we know we will need improvements to the facility's disinfection, screening, and gate systems to facilitate a higher volume of CSO overflow that needs to be treated above what it has historically treated. As a part of CS-299 we will evaluate the needs of the Leib SDF and incorporate those needs into a project which considers the Meldrum Diversion and develop a design, bid, build project for this facility.

Oakwood CSO RTB/SPS Improvements (WWMP & CS-299 driven). This project is a predecessor project to the NWI Diversion project. This project at this point doesn't have any scope or information associated with it other than we know we will need improvements to the facility's disinfection, screening, pumping, and gate systems to facilitate a higher volume of CSO overflow that needs to be treated above what it has historically treated. As a part of CS-299 we will evaluate the needs of the Oakwood Facility and incorporate those needs into a project which considers the NWI Diversion and develop a design, bid, build project for this facility.

Puritan Fenkell & 7 Mile CSO Facility Improvements (WWMP & CS-299 driven). This project(s) is a predecessor project to the WWMP recommendation to build a pump station and divert 150 MGD from Redford outfalls to the PF basin. Also, a hydraulic study was completed in 2019 to evaluate the operation of the system and was concluded that we would need to further evaluate the hydraulics to determine what elevation we can raise the weir to, and configure the basin for future operation. This will yield improvements to the basin and equipment to ensure it is ready to address future flows and future operational requirements.

CS-299 will generate other projects based on equipment condition and facility needs. CS-299 will yield a 20-year CIP which addressing needs of all 9 CSO Facilities. These projects may include different types of groupings based on project location, or project scope. Since the depth and breadth of projects are unknown at this time, we worked with AECOM based on thier experience of performing similar type projects and based on facility age trying to create placeholders in the "unallocated" portion of the CIP budget that will permit for future work. As a note, this was done in previous versions of the CIP and we are trying to refine it this year to more address a 10-year view of the CIP with the 10th year looking at 10+.

Some of the "unallocated" in the latter years covers LT CSO Control plans as laid out in the previous "Plans of Record - 2008 and 2010" and as modified by the current draft version of the 2019 Wastewater Masterplan. These anticipated projects from the LT CSO CP and the WWMP include, but aren't necessarily limited to: 1. Upper Rouge Conduit, as recommended in the Masterplan which is anticipated, at this time, to be a 12' diameter (5 mile long) pipe that is tunneled in and serves to capture first flush of the west side sewer system. 2. CSO Netting facilities as approved by the EGLE (formerly DEQ) in 2008/2010 along the Detroit and Rouge Rivers. There are many outfalls which may require these facilities, but the exact number or location is not known of as of today.



Phase Budget	Wastewater				Cost Allocation	CSO 83/17
Phase Status	Future Planne	d Start			Funding Source	Revenue Financed Capital
Start Date		12/8/2018			Fund	Improvement & Extension Fun
End Date		1/14/2024		U	lseful Life >20Yrs?	No
Co	ost Estimation I	nformation		Tot. Fede	eral Loan Amount	
	5	Cost Est. Class		Pro	gram/Allowance	Task Information
8	/20/2019	Cost Est. Date		Project Manager	N/A	
CSO Manage	er & AECOM	Cost Est. Source		CIP Number		
CSO Manage	er & AECOM	Cost Est. Prepar	ed By	Description		des acknowledgement ofthe ts which stem from other efforts
					scope identified Leib SDF Improve driven). This proj the Meldrum Div this point doesn' information asso know we will nee facility's disinfect systems to facilit overflow that ne it has historically we will evaluate incorporate thos considers the Me a design, bid, bu Oakwood CSO F & CS-299 driven	this time has a very limited ements (WWMP & CS-299 ject is a predecessor project to version project. This project at t have any scope or ociated with it other than we ed improvements to the tion, screening, and gate ate a higher volume of CSO eeds to be treated above what treated. As a part of CS-299 the needs of the Leib SDF and se needs into a project which eldrum Diversion and develop uild project for this facility. RTB/SPS Improvements (WWMP ). This project is a predecessor WI Diversion project. This
App B - Pa	qe 348					pint doesn't have any scope or



information associated with it other than we know we will need improvements to the facility's disinfection, screening, pumping, and gate systems to facilitate a higher volume of CSO overflow that needs to be treated above what it has historically treated. As a part of CS-299 we will evaluate the needs of the Oakwood Facility and incorporate those needs into a project which considers the NWI Diversion and develop a design, bid, build project for this facility.

Puritan Fenkell & 7 Mile CSO Facility Improvements. This project(s) is a predecessor project to the WWMP recommendation to build a pump station and divert 150 MGD from Redford outfalls to the PF basin. Also, a hydraulic study was completed in 2019 to evaluate the operation of the system and was concluded that we would need to further evaluate the hydraulics to determine what elevation we can raise the weir to, and configure the basin for future operation. This will yield improvements to the basin and equipment to ensure it is ready to address future flows and future operational requirements.

Baby Creek Effluent Conduit Improvements: The Baby Creek facility effluent conduits are full of debris. To facilitate removing this debris we are planning a project to evaluate access options for accessing the conduits easily without interruption to the Woodmere Cemetery which allow us to maintain our pipe as necessary. These tunnel access points will be considered CIP when constructed because



they are permanent structures.

CS-299 will generate other projects based on equipment condition and facility needs. CS-299 will vield a 20-vear CIP which addressing needs of all 9 CSO Facilties. These projects may include different types of groupings based on project location, or project scope. Since the depth and breadth of projects are unknown at this time, we worked with AECOM based on thier experience of performing similar type projects and based on facility age trying to create placeholders in the "unallocated" portion of the CIP budget that will permit for future work. As a note, this was done in previous versions of the CIP and we are trying to refine it this year to more address a 10-year view of the CIP with the 10th year looking at 10+.

Some of the "unallocated" in the latter years covers LT CSO Control plans as laid out in the previous "Plans of Record - 2008 and 2010" and as modified by the current draft version of the 2019 Wastewater Masterplan. These anticipated projects from the LT CSO CP and the WWMP include, but aren't necessarily limited to: 1. Upper Rouge Conduit, as recommended in the Masterplan which is anticipated, at this time, to be a 12' diameter pipe that is tunneled in and serves to capture first flush of the west side sewer system. 2. CSO Netting facilities as approved by the EGLE (formerly DEQ) in 2008/2010 along the Detroit and Rouge Rivers. There are many outfalls which may require these facilities, but the exact number or location is not known of as of



#### today.

Cost Type	Fiscal Year	Expense	Fringe BenefilNo	onPersonne	Comment
n/a	FY20	\$650			2021CIP
n/a	FY21	\$2,000			2021CIP
n/a	FY22	\$2,000			2021CIP
n/a	FY23	\$5,350			2021CIP
n/a	FY24	\$4,050			2021CIP
n/a	FY25	\$20,250			2021CIP
n/a	FY26+	\$85,250			2021CIP

#### Phase Total Expenses By FY (All figures are in \$1,000's)

P	rior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total
	0	650	2,000	2,000	5,350	4,050	20,250	85,250	119,550	33,650

Phase Task Name	Start Date End	d Date	Duration
Project Execution	7/1/2022 6/	/30/2030	2921



# **CSO FACILITIES IMPROVEMENT PROGRAM**

Phase Construc	tion					Contrac	C	ON-144		Status	Clo	sed Out	
Title CON-144 -	- Rehabilit	tation o	f CSO RTB	'S									
CON 144 Const	truction												
Phase Budget	Wastewa	ater						Cost A	llocation	CSO 83/	17		
Phase Status	Closed C	Dut						Fundin	g Source	Bond Pro	cee	eds	
Start Date	d Date 11/30/201 Cost Estimation Information 1 Cost Est. Class Cost Est. Date								Fund	Construc	ction	Bond Fund	
End Date			11/30,	/2017			U	seful Life	e >20Yrs?	Yes			
Ca	ost Estima	ition Inf	ormation		1	Tot.	ede	ral Loar	n Amount				
	1	(	Cost Est. C	lass			Prog	gram/A	llowance	Task Info	rmat	lion	
		(	Cost Est. D	ate	F	Project Mana	ger	Kashm	ira Patel				
		(	Cost Est. S	ource	(	CIP Number		215001					
		(	Cost Est. P	repared By	[	Description		Project	t is comple	eted.			
Cost Ty	pe	Fisc	cal Year	Expens	se	Fringe Bene	ilNo	nPerson	ne	Com	imer	nt	
Construction		FY19-	-		\$917				2021 CII	P			
			Pha	se Total Exp	pense	s By FY (All fi	gure	es are ir	n \$1 <i>,</i> 000's	)			
Prior Yr Actual	FY20	FY2	1 FY	22 FY	23	FY24	FY	25	FY26+	Tota	I	5-Yr Total	
917	0		0	0	0	0		0	0		917	0	
Phase Task Da	tes												
Phase Task Nan	ne Start	Date	End Dat	e Durati	on								
Project Executio		28/2017	11/29/2	017	274								
Project Closeou	† 11/3	30/2017	1/29/2	018	60								

GLV Great Lakes Water	<b>VA</b> er Authority				WA FY 20 FACILITI				ROGRA	Μ		260600 CIP
Phase Study ar	nd Design (	and Constru	uction Assiste	ance	Contro	act CS-	145		Status	Clos	ed Out	
Title CS-145 - S	5/D/Ca for	Improveme	ents to the C	SO RTB's								
S/D/CA CS 145	5.											
Phase Budge	t Wastewa	ater				(	Cost A	llocation	CSO 83/1	7		
Phase Status	Closed C	Dut				F	undin	g Source	Revenue	Fina	nced Capital	
Start Date	2		3/21/2017					Fund	Improven	nent	& Extension Fu	JN
End Date	\$		12/31/2017			Use	ful Lif	e >20Yrs?	No			
C	Cost Estima	tion Informo	ation		То	t. Federa	ıl Loai	n Amount				
	1	Cost	Est. Class			Progr	am/A	llowance	Task Infor	mati	on	
		Cost	Est. Date		Project Man	ager K	ashm	ira Patel				
		Cost	Est. Source		CIP Numbei	r						
		Cost	Est. Prepare	ed By	Description	Ρ	rojec	t has beer	o complet	ed		
			Phase Tot	al Expense	s By FY (All	figures	are iı	n \$1,000's)	)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	5	FY26+	Total		5-Yr Total	
0	0	0	0	0	0		0	0		0	0	
Phase Task Do	ates											

# GLWA Great Lakes Water Authority

# GLWA FY 2021-2025 CIP

#### **CSO FACILITIES IMPROVEMENT PROGRAM**

260600 CIP#

ase Construc	tion		Contract D	WS-065	Status Closed Out	
le DWS-065 -	Rehabilitation	n of CSO RTB's (Replaces C	CIP1313)			
WS-065 - Cons	struction					
Phase Budget	Wastewater			<b>Cost Allocation</b>	CSO 83/17	
Phase Status	Closed Out			Funding Source	Bond Proceeds	
Start Date				Fund	Construction Bond Fund	
End Date			ι	Jseful Life >20Yrs?	Yes	
Co	ost Estimation	Information	Tot. Fede	eral Loan Amount		
	1	Cost Est. Class	Pro	gram/Allowance	Task Information	
		Cost Est. Date	Project Manager			
		Cost Est. Source	CIP Number			
		Cost Est. Prepared By	Description	Project has beer	n closed out.	

#### Phase Total Expenses By FY (All figures are in \$1,000's)



#### **CSO FACILITIES IMPROVEMENT PROGRAM**

<b>hase</b> Design a	& Cor	nstruct	ion Assi	stance			Con	ract (	CS-172		Status Ac	tive	
0					) RTB Au	vtomatio	n Improvem						
CS-172 Design													
Phase Budge									Cost /	Allocation (	CSO 83/17		
Phase Statu	s Act	ive							Fundir	ng Source 🖡	Revenue Fin	anced Capito	al
Start Date	e			7/1	/2017					Fund I	mprovemer	nt & Extension	Fun
End Date	e			9/23	/2019				Useful Lif	e >20Yrs?	10		
(	Cost E	stimat	ion Info	rmation			Т	ot. Fed	eral Loa	n Amount			\$0
		1	С	ost Est. C	Class			Pre	ogram/A	llowance T	ask Informa	tion	
			С	ost Est. [	Date		Project Mo	inager					
HDR - Budge	et		С	ost Est. S	ource		CIP Numb	er	260603	3			
HDR			С	ost Est. F	repared	d By	Descriptio	n		or Creek CS nation Insta	O Basin Ado II	ditional	
Cost T	Гуре		Fisco	al Year	Ex	pense	Fringe Be	enefilN	onPersor	ne	Comme	nt	
Engineering Se	ervice	S	FY19-			\$11	0			2021 CIP	•		
Engineering Se	ervice	S	FY20			\$1	4			2021 CIP	•		
				Pho	se Tota	l Expens	ses By FY (A	ll figu	r <mark>es are i</mark>	n \$1,000's)			
Prior Yr Actua	FY2	20	FY21	F	(22	FY23	FY24	F	Y25	FY26+	Total	5-Yr Total	
110		14		0	0		0 (	)	0	0	124	0	
Phase Task Do	ates												
Phase Task No	ame	Start [	Date	End Do	te D	uration							
			/2017	9/23/2	2010	814	4						

# GLWA Great Lakes Water Authority

### GLWA FY 2021-2025 CIP CSO FACILITIES IMPROVEMENT PROGRAM

<b>hase</b> Design &	& Constructi	on Assistar	nce		Contro	act C	S-116		Status Ac	tive	
itle 260603 - 0	CS-116 - Reł	nabilitation	of Conner	r Creek CSC	RTB Effluen	t Launa	der Gat	es & Emerg	gency Relief	Gates	
CS-116 - study	, design and	d construct	ion assista	nce.							
Phase Budge	<b>Wastewat</b>	er					Cost A	Allocation	CSO 83/17		
Phase Statu	s Active						Fundir	ng Source	Revenue Fin	anced Capit	al
Start Date	e		2/27/2017					Fund	mprovemer	nt & Extension	Fun
End Date	e	]	2/31/2020			U	seful Lif	e >20Yrs?	No		
(	Cost Estimati	ion Informo	ation		То	t. Fede	eral Loai	n Amount			\$0
	1	Cost	Est. Class			Prog	gram/A	llowance 1	ask Informa	ition	
		Cost	Est. Date		Project Mar	ager	Kashm	ira Patel			
Engineer's p	roposal	Cost	Est. Source	2	CIP Numbe	ſ	260603	3			
РМА		Cost	Est. Prepar	ed By	Description			nt launder g	basin effluer gates to rest		
Cost T	уре	Fiscal Y	ear	Expense	Fringe Ber	efitNo	nPerson	ine	Comme	nt	
Engineering Se	ervices	FY19-		\$211				2021 CIF	)		
Engineering Se	ervices	FY20		\$116				2021 CIF	0		
Engineering Se	ervices	FY21		\$68				2021 CIF	)		
			Phase To	tal Expense	es By FY (Al	figure	es are i	n \$1,000's)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
211	116	68	0	0	0		0	0	395	68	
Phase Task Do	ates										
Phase Task No	ame Start [	Date En	d Date	Duration							
Project Executi	ion 2/27	/2017 1	/30/2021	1433							

GLW Great Lakes Water A	<b>A</b> Luthority			UWA FY 2021- O FACILITIES I		ENT PROGRAM	260600 CIP#
<b>hase</b> Construct	ion			Contract	CON-234	Status Active	
itle 260603 - C	ON-234 Cc	onner Creek Eff	uent Gate Impr	ovements Project	ł		
Construction for improvements.	CS 116 and	d CS-172 - rehc	bilitation of the	effluent relief and	d effluent laur	nder gates, actuators, and mis	c. electrical
Phase Budget	Wastewate	er			Cost Allo	cation CSO 83/17	
Phase Status	Active				Funding S	ource Bond Proceeds	
Start Date		3/1,	/2018			Fund Construction Bond Fund	k
End Date		9/23,	/2019		Useful Life >2	20Yrs? Yes	
Co	ost Estimatic	on Information		Tot. Fe	deral Loan A	mount	\$O
	1	Cost Est. C	lass	Р	rogram/Allov	vance Task Information	
7.	/31/2019	Cost Est. D	ate	Project Manage	er Kashmira	Patel	
Construction I	Bid	Cost Est. S	ource	CIP Number	260603		
PMA		Cost Est. P	repared By	Description	rehabilitat	ion for CS 116 and CS-172 - tion of the effluent relief and ef ates, actuators, and misc. elec nents.	
Cost Typ	be	Fiscal Year	Expense	Fringe Benefill	NonPersonne	Comment	
Construction		FY19-	\$3,77	0		2021 CIP	

Construction		FT17-		<b>Ъ</b> 2,//О			2021 CIP			
Construction		FY20		\$2,061			2021 CIP			
Construction		FY21		\$1,201			2021 CIP			
			Phase To	tal Expense	s By FY (All	figures are	in \$1,000's)			
Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	

Prior Yr Ad	ctual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Iotal
3	,770	2,061	1,201	0	0	0	0	0	7,032	1,201

Phase Task Dates					
Phase Task Name	Start Date	End Date	Duration		
Project Execution	6/12/2018	3/31/2021	1023		
App B - Page 357					

# GLWA Great Lakes Water Authority

### GLWA FY 2021-2025 CIP CSO FACILITIES IMPROVEMENT PROGRAM

260600 CIP#

#### Phase Construction

**Contract** 1804112

Status Under Procurement

the grading in the front and side of the site slopes towards the building with no catch basins also creating water infiltration issues in

completely failed and the hatch at the front entrance has damage to it leaving a hole to trip or injur someone. This project will fix the parking lot, grading issues, sidewalk, and hatch. This project will also address

landscaping (because of regrading) and provide landscaping which requires minimal maintenance to keep the aesthetics of the

side of the building. The sidewalk has

Title 260609 - 7 Mile Parking Lot and Site Grading Improvements Project

The 7 Mile Parking Lot is failing in many locations, traps water in many locations, and slopes towards the building directing water towards the building during rain. Furthermore, the grading in the front and side of the site slopes towards the building with no catch basins also creating water infiltration issues in side of the building. The sidewalk has completely failed and the hatch at the front entrance has damage to it leaving a hole to trip or injur someone. This project will fix the parking lot, grading issues, sidewalk, and hatch. This project will also address landscaping (because of regrading) and provide landscaping which requires minimal maintenance to keep the aesthetics of the building looking good.

	I	\			
Phase Budget	Wastewater			Cost Allocation	CSO 83/17
Phase Status	Under Procu	vrement		Funding Source	Bond Proceeds
Start Date				Fund	Construction Bond Fund
End Date			ι	Jseful Life >20Yrs?	Yes
Co	ost Estimation	n Information	Tot. Fede	eral Loan Amount	\$0
	1	Cost Est. Class	Pro	gram/Allowance	Task Information
	7/3/2019	Cost Est. Date	Project Manager	Matthew Kriege	r
Engineers OP	СС	Cost Est. Source	CIP Number	260609	
HRC		Cost Est. Prepared B	y Description	locations, traps v slopes towards t	ng Lot is failing in many water in many locations, and he building directing water ding during rain. Furthermore,



Cost Ty	/ne	Fiscal Ye	ar F	xpense	Fringe Bene	filNonPersonne	<u></u>	Commer	
Construction	,pc	FY19-		\$20	i ninge berie		2021 CIP	Common	
Construction		FY20		\$393			2021 CIP		
Construction		FY21		\$7			2021 CIP		
			Phase Tot	al Expense	s By FY (All	igures are in S	\$1,000's)		
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total
20	393	7	0	0	0	0	0	420	7

Phase Task Name	Start Date	End Date	Duration
Procurement	5/1/2019	10/5/2019	157
Project Execution	10/6/2019	8/6/2020	305
Project Closeout	8/7/2020	11/4/2020	89

#### GLWA FY 2021-2025 CIP **CSO FACILITIES IMPROVEMENT PROGRAM** Contract CS 000 Status Canadad Ct. d Phc

260600 CIP#

ise slody		Connaci	.3-277	sidius Can	Celled
e 260605 - CS-299 - CSO Fo	acilities Conditions Assess	ment			
nis project was taken out of ( nprovement.	CIP and funded with a m	ix of O&M and I&E fun	ding sources bec	ause it is a stuc	ly and not a 20-yea
nis project will consist of the f	<u> </u>		,		
ssessment for all Assets. C. U eport. F. Develop reporting	•		,	CIP. E. Generat	e a Needs Assessme
Phase Budget Wastewater			Cost Allocation	CSO 83/17	
Phase Status Cancelled			Funding Source	Bond Proceed	ds
Start Date			Fund	Construction E	Bond Fund
End Date		l	Jseful Life >20Yrs?	No	
Cost Estimation I	nformation	Tot. Fede	eral Loan Amount		\$0
2	Cost Est. Class	Pro	gram/Allowance	Task Information	on
8/21/2018	Cost Est. Date	Project Manager	Chris Nastally		
CSO Manager	Cost Est. Source	CIP Number	260605		
Chris Nastally - estimation b	Cost Est. Prepared By	Description	This project will of tasks: A. Audit al assessment for of Assessment for of Scheduled Repl 20-year CIP. E. Of Report. F. Deve to all the status of Project was rem funded with O& moving forward	Il assets. B. Criti all assets and C all Assets. C. Up acement Plan. Generate a Ne lop reporting to of the CSO Pro oved from CIP M and I&E fund	cality condition date of . D. Develop a beds Assessment cols for reporting gram. and will be

### Phase Total Expenses By FY (All figures are in \$1,000's)

Phase Task Dates 360

### **CSO FACILITIES IMPROVEMENT PROGRAM**

260600 CIP#

GLW Great Lakes Water A	<b>A</b> Luthority				LWA FY 20 O FACILITI			-	ROGRAM		260600 CI
Phase Construct	ion				Contro	act 18	303113		Status Ac	tive	
Title 260610 - Bc	aby Creek	SDF - HV Units	Replacemer	nt							
Replace Make I	•	•	ek as they are	past	their life, and	d rustir	-				
Phase Budget	Wastewate	er					Cost /	Allocation	CSO 83/17		
Phase Status	Active			Funding Source Revenue Financed Capital						I	
Start Date		3,	4/2019					Fund	I&E/Bond		
End Date	End Date 12/11/2019					ι	lseful Lif	e >20Yrs?	Yes		
Co	ost Estimatio	n	1	То	t. Fede	eral Loa	n Amount			\$0	
	1	Class			Pro	gram/A	llowance	lask Informa	tion		
12	12/10/2018 Cost Est. Date					ager	Kashm	nira Patel			
Construction E	Construction Bid Cost Est. Source				CIP Number 260610						
De-Cal					Description		with a to the space	newly des space and	igned unit to d decrease o	make up air u increase air fl corrosions of nperature con	ow
Cost Typ	се	Fiscal Year	Expen	se	Fringe Ber	efitNo	nPersor	nne	Comme	nt	
Construction		FY20		\$262	2			2021CII	0		
		Ph	ase Total Ex	pens	es By FY (Al	figur	es are i	n \$1,000's	)		
Prior Yr Actual	FY20	FY21	FY22 FY	23	FY24	F١	'25	FY26+	Total	5-Yr Total	
0	262	0	0	C	) 0		0	0	262	0	
Phase Task Dat	es										
Phase Task Nam	ne Start D	ate End D	ate Durat	ion							
Procurement	12/31		/2019	69	-						
Project Execution			/2019	184	-						
Project Closeout		/2019 12/11	/2019	90							

Great Lakes Water Authority Phase Design and Build		CSC	FACILITIES I			AM Future Planned St	art
itle 260614 - CSO Faciliti	es - Structural Impro	vements Proje					
A partial structural condit project will provie Design- be carried out over a 3-5	-Build services to co						
Phase Budget Wastewa	ter			Cost Alloc	ation CSO 83,	/17	
Phase Status Future Pla	inned Start			Funding S	ource Bond Pr	oceeds	
Start Date					Fund Constru	ction Bond Fund	
End Date				Useful Life >2	<b>OYrs?</b> Yes		
Cost Estimat	ion Information		Tot. Fe	nount		\$0	
4	Cost Est. Class	5	P	rogram/Allow	ance Task Info	ormation	
9/18/2018	Cost Est. Date	1	Project Manage	r Chris Nast	ally		
Estimated	Cost Est. Sour	ce (	CIP Number	260614			
CSO Manager/ NTH	Cost Est. Prep	ared By	Description	been perf (types) ide will provie inspect all ground) a over a 3-5 previously 2019 versio forward in	ormed and stru entified and pri Design-Build se CSO Facilities nd prioritize rep year period. 1 pushed back on of the CIP) o	ition assessment ha uctural improveme foritized. This project ervices to complete (above and below pairs to be carried This project was 2 fiscal years (in the and then pulled on to increase CIP	nt ct ely v out
Cost Type	Fiscal Year	Expense	Fringe Benefith	IonPersonne	Con	nment	
Design-Build	FY19-	\$335		2	2021 CIP		
Design-Build	FY20	\$44			2021 CIP		
Design-Build	FY21	\$1,286			2021CIP		

2021 CIP

\$5,788

FY22

Design-Build



### **CSO FACILITIES IMPROVEMENT PROGRAM**

Cost T	уре	Fiscal Ye	ear E	Expense	Fringe Bene	fitNonPersonr	ne	Comme	nt
Design-Build		FY23		\$4,460			2021 CIP		
Design-Build		FY24		\$622			2021 CIP		
			Phase Tot	al Expense	s By FY (All f	igures are in	\$1,000's)		
	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total
Prior Yr Actual	1120	1121	1122	1125	1127	1120	1120.	Torai	0 11 10101

#### Phase Task Dates

Phase Task Name	Start Date	End Date	Duration
Pre-Procurement	11/1/2018	9/1/2019	304
Procurement	9/2/2019	5/8/2020	249
Project Execution	5/9/2020	5/7/2024	1459
Project Closeout	5/8/2024	11/3/2024	179

GL Great Lakes W	<b>NA</b> <i>uter Authority</i>			(		VA FY 202 FACILITIE				ROGRAM		<b>260600</b> C
hase Constru	iction					Contra	ct 1	901609		Status Un	der Procureme	ent
	,	SDF - HVAC		•								
his project ex odor control i		ne MAU replo	cement	r project	by a	ddressing sy	vstem	controls	througho	ut the facilit	y, ventilation is	sues, and
Phase Budge	et Wastewa	ter						Cost A	llocation	CSO 83/17		
Phase Statu	us Under Pro	curement						Fundin	g Source	Bond Proce	eds	
Start Dat	e								Fund	Construction	n Bond Fund	
End Dat	e				Useful Life >20Yrs? Yes							
	Cost Estimat	on			Tot	. Fede	eral Loar	Amount			\$0	
	1	Cost Es	t. Class				Pro	gram/A	llowance 1	ask Informc	ition	
	7/1/2019	Cost Es	t. Date		P	roject Man	ager	Kashmi	ira Patel			
Engineer's C	PCC	Cost Es	t. Source	e	C	CIP Number		260613				
Arcadis		Cost Es	t. Prepa	red By	C	)escription		project throug	by addre	essing system acility, ventil	MAU replacem a controls ation issues, ar	
Cost <sup>-</sup>	Гуре	Fiscal Yea	ar	Expense	;	Fringe Ben	əfitNo	nPerson	ne	Comme	nt	
onstruction		FY20		\$	5207				2021 CIF	2		
Construction		FY21		\$	5293				2021 CIF	D		
		P	hase To	otal Expe	ense	s By FY (All	figur	es are ir	n \$1,000's]			
rior Yr Actual	FY20	FY21	FY22	FY2	3	FY24	F١	(25	FY26+	Total	5-Yr Total	
0	207	293	C	)	0	0		0	0	500	293	

### Phase Task Dates

Phase Task Name	Start Date	End Date	Duration
Procurement	7/17/2019	12/5/2019	141
Project Execution	12/6/2019	2/27/2021	449
	0.4		

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### **CSO FACILITIES IMPROVEMENT PROGRAM**

260600 CIP#

Phase Task NameStart DateEnd DateDurationProject Closeout2/28/20215/28/202189

GLUKA Great Lakes Water Author	writy		C	GLWA FY 2021-2 CSO FACILITIES IN		ROGRAM	260600 CI
<b>hase</b> Constructio	n			Contract (	CON-254	Status Pending Close-c	out
<b>itle</b> 260601 - Oak	wood Dro	ain Valve Impro	ovements				
causing operation	ns to be c	ompletely mar	nual and diffic	cult to manage. This	project includes re	vood RTB. This equipment eplacement of compromis ontrols for the equipment.	
Phase Budget W	astewate	r			Cost Allocation	CSO 83/17	
Phase Status Pe	ending Clo	ose-out			Funding Source	Bond Proceeds	
Start Date		6/18/	2018		Fund	I&E/Bond	
End Date		12/11/	2019	l	Useful Life >20Yrs?	Yes	
Cost	Estimatio	n Information		Tot. Fed	eral Loan Amount		\$0
	1	Cost Est. C	lass	Pro	ogram/Allowance	Task Information	
7/3	1/2019	Cost Est. D	ate	Project Manager	Gary Stoll		
Contractor Bid		Cost Est. So	ource	CIP Number	260601		
ΡΜΑ		Cost Est. Pr	repared By	Description	equipment in dr the Oakwood R causing operati and difficult to r replacement of conduits which vault, as well as for the equipme	ace a series of failed ain vaults located adjace TB. This equipment has fai ons to be completely man nanage. This project inclu compromised electrical leak groundwater into the new sump pumps and co ent. project is nearly complete ut in the next month or two	led nual udes ntrols d. It
Cost Type		Fiscal Year	Expense	Fringe BenefilNo	onPersonne	Comment	
Construction	F	-Y19-	\$4	495	2021C	P	
Construction	F	-Y20		\$60	2021C	P	



CSO FACILITIES IMPROVEMENT PROGRAM

260600 CIP#

Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total
495	60	0	0	0	0	0	0	555	0

#### Phase Task Dates

Phase Task Name	Start Date	ate End Date	Duration
Project Execution	6/18/2018	/2018 9/11/2019	450
Project Closeout	9/12/2019	/2019 12/10/2019	89

GLWA Great Lakes Water Authority

### **CSO FACILITIES IMPROVEMENT PROGRAM**

260600 CIP#

Phase Construct	tion					Contro	act 1	902040		Status	Futi	ure Planned S	start
		n of Site I	Improvm	nents to L	eib and	l Puritan Fer		/02010			1010		
Constructing sit								rainage	, site lighti	ng, and s	sidev	valks.	
Phase Budget	[								llocation				
Phase Status	Future Plar	nned Sto	art					Fundin	ng Source	Bond Pro	ocee	ds	
Start Date						Fund I&E/Bond							
End Date					Useful Life >20Yrs? Yes								
Co	ost Estimatio	on Inforr	nation			Tot. Federal Loan Amount							\$O
	1	Со	st Est. Cl	ass			Pro	aram/A	llowance	Task Info	rmat	ion	
7	/15/2019		st Est. Do			Project Mar		-	ira Patel				
							r	260615					
											mor	ts to Leih SDI	F
HRC	HRC Cost Est. Prepare										ell facilities for drainage, site		
								lighting	g, and side	ewalks.			
Cost Ty		Fiscal	Year	Expe	nsa	Fringe Ber	ofitNc	nPerson	ne	Com	mar	<b>\</b> +	
Construction		FY20	TCOI	LAPC	xpense Fringe BenefilNonPersonne \$233 2021CIF								
Construction		FY21			\$717 2021CIP								
			Phas	o Total E			lfigur	os aro ir	s \$1,000's	<u> </u>	_		
	51/00	51/01			-	s By FY (Al				-			
Prior Yr Actual	FY20	FY21	FY2		=Y23	FY24	F.	(25	FY26+	Tota		5-Yr Total	
0	233	71	/	0	0	0		0	0	7	950	717	
Phase Task Dat	es												
Phase Task Nan	ne Start D	Date I	End Date	e Dure	ation								
Pre-Procuremen	it 2/15	/2019	8/15/20	019	181								
Procurement	8/16	/2019	2/11/20	)20	179								
Project Executio		/2020	2/10/20	021	364								
Project Closeou App B - Pa	t 2/11	/2021	5/11/20	021	89								

GLW Great Lakes Water	<b>Authority</b>		GLWA FY 2021-2 CSO FACILITIES IN		260600 CIP#				
<b>Phase</b> Construc	tion		Contract	901836	Status	Future Planned Star	·†		
itle 260616 - Bo	aby Creek Pipir	ng Improvements							
supports have k the sewer pipe	become dislod will have inade	ged or eroded and nee equate support and mo	ent Channel is supporte ed repair and replacer ay fail. The improved ar n pipe support anchors	nent with improved nchor devices are	d anchor	ing devices. Withou	ıt repair		
Phase Budget	Wastewater			Cost Allocation	CSO 83/	17			
Phase Status	Future Planned	d Start		Funding Source	Bond Proceeds				
Start Date		12/2/2019		Fund	Construction Bond Fund				
End Date		8/28/2020	I	Useful Life >20Yrs?	Yes				
Co	ost Estimation Ir	nformation	Tot. Fed	eral Loan Amount		\$C	)		
	1	Cost Est. Class	Pro	Program/Allowance Task Information					
7	//22/2019	Cost Est. Date	Project Manager	Matthew Krieger	ər				
Engineer OPC	CC	Cost Est. Source	CIP Number 260616						

The West End Sewer inside the Baby Creek CSO Effluent Channel is supported by concrete anchors and support wedges. These supports have become dislodged or eroded and need repair and replacement with improved anchoring devices. Without repair the sewer pipe will have inadequate support and may fail. The improved anchor devices are expected to extend the life of the sewer beyond 20 years. The project seeks to refurbish pipe support anchors and wedges.

Cost Type	Fiscal Year	Expense	Fringe Benefit	NonPersonne	Comment
Construction	FY20	\$103			2021CIP
Construction	FY21	\$797			2021CIP

Description

Cost Est. Prepared By

Phase Total Expenses By FY (All figures are in \$1,000's)

NTH Consultants

Phas Title



CSO FACILITIES IMPROVEMENT PROGRAM

260600 CIP#

Prior Yr Actua	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total
0	103	797	0	0	0	0	0	900	797

#### Phase Task Dates

Phase Task Name		End Date	Duration
Pre-Procurement	6/3/2019	9/15/2019	104
Procurement	9/16/2019	4/12/2020	209
Project Execution	4/13/2020	1/7/2021	269
Project Closeout	1/8/2021	4/7/2021	89

GREAT Lakes Water	<b>VA</b> <i>• Authority</i>		GLWA FY 2021-2 CSO FACILITIES IN	260600 CIP#		
Phase Construc	tion		Contract	900242	Status Active	
<b>Title</b> 260608 - 7	Mile CSO F	acility - Roof Replacement F	Project			
		ted in 2018 and is at the end asting metal roof.	of it's life with 0 to 3 y	ears remaining. Tl	his project will replace th	e existing
Phase Budget	Wastewate	er		<b>Cost Allocation</b>	CSO 83/17	
Phase Status	Active			Bond Proceeds		
Start Date				Construction Bond Fund		
End Date			l	Jseful Life >20Yrs?	Yes	
C	ost Estimatio	on Information	Tot. Fed	eral Loan Amount		\$0
	5 Cost Est. Class		Pro	gram/Allowance	Task Information	
	5/6/2019 Cost Est. Date		Project Manager Matthew Kriege		r	
Construction	BID	Cost Est. Source	CIP Number 260608			
Royal Roofing	9	Cost Est. Prepared By	Description		vas inspected in 2018 and	

the end of it's life with 0 to 3 years remaining. This project will replace the existing shingle roof with a longer lasting metal roof.

Cost T	уре	Fiscal Ye	ar l	Expense	Fringe Bene	filNonPerson	ne	Comme	nt	
Construction		FY19-		\$12			2021 CIP			
Construction		FY20		\$512			2021 CIP			
Phase Total Expenses By FY (All figures are in \$1,000's)										
Prior Yr Actual	FY20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
12	512		0	0	2		0	524	•	

#### Phase Task Dates

Phase Task Name	Start Date	End Date	Duration					
Procurement	1/15/2019	7/8/2019	174					
Project Execution	7/9/2019	2/10/2020	216					
App B Dogo 271								

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### **CSO FACILITIES IMPROVEMENT PROGRAM**

260600 CIP#

Phase Task NameStart DateEnd DateDurationProject Closeout2/11/20205/10/202089

GLWA FY 2021-2025 CIP	
CSO FACILITIES IMPROVEMENT PROGRAM	

#### Phase Construction **Contract** 1803718 Status Active 260611 - Leib SDF - HVAC System Improvements Title Many components of the Leib HVAC system have failed. These are causing ventilation issues, air quality issues, and likely are also a source of increased/accelerated corrosion of equipment in the facility. Phase Budget Wastewater Cost Allocation CSO 83/17 Phase Status Active Funding Source Bond Proceeds Fund I&E/Bond Start Date 6/17/2019 End Date Useful Life >20Yrs? No 9/17/2020 Tot. Federal Loan Amount \$0 **Cost Estimation Information** Program/Allowance Task Information Cost Est. Class Project Manager Kashmira Patel 3/22/2019 Cost Est. Date **CIP Number** 260611 Cost Est. Source Contractors BID Description Project just began the design phase. Many Cost Est. Prepared By Lakeshore Global components of the Leib HVAC system have failed. These are causing ventilation issues, air quality issues, and likely are also a source of increased/accelerated corrosion of equipment in the facility. Fringe BenefilNonPersonne Cost Type Fiscal Year Expense Comment Construction FY20 \$236 2021 CIP \$8 FY21 2021 CIP Construction Phase Total Expenses By FY (All figures are in \$1,000's) Prior Yr Actual FY23 FY25 FY26+ FY20 FY21 FY22 FY24 Total 5-Yr Total 0 0 236 8 0 0 0 0 244 8 Phase Task Dates

Phase Task Name	Start Date	End Date	Duration
App B - Page 3	73		

260600 CIP#

Great Lakes Water Authority
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**CSO FACILITIES IMPROVEMENT PROGRAM** 

260600 CIP#

Phase Task Name	Start Date	End Date	Duration
Project Execution	6/17/2019	9/17/2020	458



### GLWA FY 2021-2025 CIP CSO FACILITIES IMPROVEMENT PROGRAM

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	6,742	7,555	7,492	10,289	10,576	4,759	20,280	85,250	152,943	53,396
2020	0	0	481	8,442	5,604	4,553	5,825	10,325	13,361	15,000	0	63,591	39,668
2019	0	764	1,658	9,277	6,218	2,351	4,351	9,351	11,251	0	0	45,221	31,548
2018		3,428	2,247	6,400	9,000	7,200	3,610		0	0	0	31,885	28,457

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP 260601 - CON-254 - Created new phase, \$555K contractors bid, estimated spend based on contractors tentative schedule.

260602 - Created new phase, moved \$980K from TBD to this project - CSO Fire Alarm Improvements. 260603 - CON-234, Updated FY costs based on actual contractors bid and potential change order to replace influent meters @ Conner Creek. This contract was bid in February 2018, awarded in 6/2018, and given the schedule, the Contractor will not complete work in FY19 as previously thought when it was bid. 260604 - Created new phase, shifted \$355K from TBD to this project - Baby Creek Influent Area Improvements 260605 - Created new phase, \$4.5M Budget for CSO Facilities Assessment Project 260606- Created new phase, moved \$300K from TBD to this project - Puritan Fenkell Roof Replacement. 260607 - Created new phase, costs are \$700K split over FY19 and FY20, FY19 from TBD- Leib Electrical Improvements Contract

TBD - Created new phase, Costs are estimated @ \$300K, 7 Mile Roof Replacement Project

TBD - Created new phase, Costs are estimated @ \$650K, Leib SDF HVAC Improvements Project

TBD - Created new phase, Costs are estimated @ \$150K, Baby Creek MAU Replacement - I&E funded.

TBD - Created new phase, Costs are estimated @ 650K, Baby Creek HVAC System Improvements - expands on the project to only replace the MAUs.

TBD - Created new phase, Costs are estimated @ \$400K, 7 Mile Parking lot, and Site Improvements Project TBD - Created new phase, Costs are estimated @ \$11M, CSO Facilities Structural Improvements Design Build (based on Task CS-166 - Task C.05).

Modified the TBD allowance category for immediate years as projects become clearer. As previously indicated, this amount will steadily decrease as projects are defined, and will likely be removed once the CSO Assessment Project is completed.

UPDATES IN 7-2019

260605 - CS-299 CSO Facilities Assessment Project was removed from CIP. It is O&M and I&E funded because it is



### CSO FACILITIES IMPROVEMENT PROGRAM

more of a study than a CIP project. It will lead to CIP projects and we can come back and capitalize it later if we so desire.

260610 - Baby Creek MAU Replacement project. Award was later than anticipated and equipment had 16 week lead time which led to funding being shifted from FY19 to FY20.

260612 - Puritan Fenkell & Seven Mile Instrumentation Project. This is to account for a CIP number that doesn't appear within the database but did exist briefly before we determined that this project was more appropriately funded from O&M. The CIP number had already been used in BigTime and so the decision was made to just assign the next project with the next CIP number Higher (260613).

260614 - CS-166 Task C.05 - Structural Improvements Project. In 2019 CIP this project was pushed back in the CIP to accommodate Conner/Freud impacts to the CIP budget. Due to lower than expected CIP spend, this project was pulled back forward for the 2020 CIP version to start in FY 20 (late FY 20 and carry through FY 24).

Added the following new projects

260616 - Baby Creek CSO Anchor and Wedge Improvement to West End Sewer

2606xx - St. Aubin Screening and Disinfection Improvements

2606xx - Oakwood HVAC Improvements.

Updated the unallocated amounts to account for CS-299 projects and also long term CSO control elements and cross-checked with AECOM for estimates.



<ul> <li>Innovation</li> <li>Conceptual WW I</li> <li>Water MP Right Siz</li> <li>Reliability/Redunction</li> <li>NEWTP Repurposir</li> </ul>	ing Iancy Project New To CIP							
		Budget	Wastewater					
Project Engineer/Mar	•	Class Lvl 1	Wastewater					
	ector Chris Nastally	Class Lvl 2	CSO Facilities					
	Dept CSO	Class LvI 3	Multiple CSO Facilities					
-	s Case Prepared 8/1/2019	Location	City of Detroit					
Year Proje	ect Added to CIP 2019	Fund and Cost Center						
	The First Street CSO Outfall has been identified schedule. It is also the nearest and most freque waterfront park on the Detroit River. A pilot far proposed at this location to keep the sanitary t minimize impacts from fecal coliform bacteria	ently discharging outfall up cility to demonstrate the a rash from discharging clos	ostream of the proposed Ralph C Wilson pplication of CSO outfall nets is e to this beach, and also to help					
Project Alternatives	minimize impacts from fecal coliform bacteria contained in CSO discharge. nspect the two 10-ft by 10-foot box culverts that comprise this outfall and establish a location for installing the CSO nets, considering outfall structural condition, ease of access for net removal and replacement, and maintenance vehicle parking. Construct in-line netting facility under Convention Center Drive to the west of Cobo Convention Center. Construct access point for future Total Chlorine Residual monitoring to be installed in a second phase of this project.							
	GLWA staff conducted a field inspection in 201 There are different types of CSO net installation operation and maintenance.	_						
•	City of Detroit Planned Beach Construction @ the Ralph C. Wilson waterfront park on the Detroit River. This project is driving the location of the pilot facility so that we can begin controlling sanitary trash and bacteria discharges during storms to help minimize impacts to this important development.							

**Primary Driver** 3 - Regulatory

Driver Explanation App B - Page 377 The NPDES permit requirs GLWA to reduce untreated CSO discharge. This project is a low cost option to reduce



### Pilot CSO Netting Facility

sanitary trash and treat bacteria from untreated CSO discharges that may occur from the outfall, just upstream of the beach.



### PM Weighted

Score

62.4

Criteria	Score	Comment
Operations and Maintenance	1	This project will require more O&M and so it's c
Condition	1	This is for a new asset, so condition doesn't ap
Performance (Service Level/Reliability)	4	Project addresses a high-priority, non-core out
Public Health and Safety	4	I would have ranked 3, but because this is nec
Regulatory (Environmental/Legal)	5	This project is part of the current NPDES permit
Efficiency and Innovation	3	I compare this project to an alternative projec
Public Benefit	3	This project wouldn't receive media coverage
Financial	2	This was hard to score, it's a relatively low-cost

### **RC Weighted**

Score

65

Critter der	C	
Criteria	Score	Comment
Operations and Maintenance	1	
Financial	1	
Public Benefit	4	
Performance (Service Level/Reliability)	5	
Efficiency and Innovation	3	
Public Health and Safety	4	
Condition	1	
Regulatory (Environmental/Legal)	5	

			<b></b>						070004
GLWA Great Lakes Water Authority			GLWA	FY 2021 Pilot C		ng Facility	/		270001
hase Study and Design a				Contract	TBD		Status Fut	ure Planned St	art
lle Study, Design, and C				• ·					
his phase is to finalize the basis of design and desigr								land, comple/	te the
Phase Budget Wastewat	er				Cost	Allocation	CSO 83/17		
Phase Status Future Pla	nned Start				Fund	ling Source	Bond Proce	eds	
Start Date						Fund	Constructior	n Bond Fund	
End Date					Useful L	ife >20Yrs?	Yes		
Cost Estimati	on Information			Tot. I	ederal Lo	an Amount			\$0
4	Cost Est. C	lass			Program/	Allowance T	ask Informa	ition	
8/1/2019	Cost Est. D	ate	Proj	ect Manag	-	Nastally			
CDM Smith (WWMP)	Cost Est. So		CIP Number						
Carl Johnson		repared By	Des	cription	This p	proiect will in	clude a des	ign allowance	to
	0001 101.11	cpurcu by			allow	•	en conditon	s that require	
Cost Type	Fiscal Year	Expense	ə Fri	nge Benef	1NonPerso	onne	Comme	nt	
igineering Services	FY23	•	,518	0		2021 CIF	)		
gineering Services	FY24		\$232			2021 CIF	)		
ngineering Services	FY25	0	\$250			2021 CIF	)		
ngineering Services	FY26+		\$250			2021 CIF	)		
	Phas	e Total Exp	enses By	y FY (All fi	gures are	in \$1,000's)			
ior Yr Actual FY20	FY21 FY	22 FY2	3	FY24	FY25	FY26+	Total	5-Yr Total	
0 0	0	0 1	,518	232	250	250	2,250	2,000	
hase Task Dates									
Phase Task Name Start E	Date End Dat	e Duratic	n						
re-Procurement 4/7	//2021 9/3/2	021	149						

GLWA Great Lakes Water Authority
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### GLWA FY 2021-2025 CIP Pilot CSO Netting Facility

270001 CIP#

Phase Task Name	Start Date	End Date	Duration
Procurement	9/4/2021	6/30/2022	299
Project Execution	7/1/2022	6/29/2026	1459

GLWA Great Lakes Water Authority		GLWA FY 2 Pilo	021-2025 ( CSO Nett		У		270001 CIP
Phase GLWA Employees Project manag Title GLWA Salaries	gement	Cont	ract NA		Status Fut	ture Planned St	art
Phase Budget Wastewater			Cos	t Allocation	CSO 83/17		
Phase Status Future Planned Start			Fun	ding Source	Bond Proce	eds	
Start Date				Fund	Constructior	n Bond Fund	
End Date			Useful	Life >20Yrs?	Yes		
Cost Estimation Informatio	on	т	ot. Federal Lo	an Amount			\$0
Cost Es	. Class		Program	/Allowance	Task Informa	ation	
Cost Es	. Date	Project Mo	inager				
Cost Es	. Source	CIP Numb	er				
Cost Es	. Prepared By	Description	1				
Cost Type Fiscal Yea	r Expens	se Fringe Be	nefilNonPers	onne	Comme	ent	
GLWA Salaries CIP2021 FY21		\$20		2021 CI	Р		
GLWA Salaries CIP2021 FY22		\$86		2021 CI	Р		
GLWA Salaries CIP2021 FY23		\$86		2021 CI	Р		
GLWA Salaries CIP2021 FY24		\$86		2021 CI	Р		
GLWA Salaries CIP2021 FY25		\$121		2021CI	Р		
GLWA Salaries CIP2021 FY26+		\$120		2021CI	Р		
P	nase Total Exp	enses By FY (A	Il figures are	e in \$1,000's	)		
Prior Yr Actua FY20 FY21	FY22 FY2	23 FY24	FY25	FY26+	Total	5-Yr Total	
0 0 20	86	86 86	5 12	1 120	519	399	

#### **Phase Task Dates**

GLW/ Great Lakes Water Author					GL	WA FY 202 Pilot			P g Facility	/		270001 CIP
Phase Constructio	n					Contro	ct TB	D		Status F	uture Planned S	tart
Title Construction	1											
Phase Budget W	astewate	ər						Cost A	llocation	CSO 83/17		
Phase Status Fu	uture Plan	ned Star	t					Fundir	ng Source	Bond Proc	eeds	
Start Date									Fund	Constructi	on Bond Fund	
End Date							U	seful Lif	e >20Yrs?	Yes		
Cost	Estimatic	on Inform	ation			To	. Fede	ral Loai	n Amount			\$0
	Lannand											<b>+</b> •
			Est. Clas	-			-	gram/A	llowance 1	lask Inform	ation	
		Cost	Est. Date		1	Project Man	ager					
		Cost	Est. Sour	ce	(	CIP Number						
		Cost	Est. Prep	ared By	I	Description						
Cost Type	<u>,</u>	Fiscal Y	/ear	Expense	ż	Fringe Ben	efitNor	Person	ne	Comm	ent	
Construction		FY25			,136	inigo bon			2021 CIF			
Construction		FY26+		•	\$864				2021 CIF			
		,	Phase 1	otal Exp	ense	s By FY (All	figure	s are i	n \$1,000's)	)		
Prior Yr Actual F	Y20	FY21	FY22	FY2	3	FY24	FY	25	FY26+	Total	5-Yr Total	
0	0	0		0	0	0		4,136	864	5,00	0 4,136	
Phase Task Dates	5											
Phase Task Name	Start D	ate Er	nd Date	Duratic	n							
Procurement	9/5/	/2023	6/30/2024	L	299							
Project Execution	7/1/	/2024 12	2/31/2025	-	548							
Project Closeout	1/1/	/2026	6/29/2026	)	179							



### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	20	86	1,604	318	4,507	1,234	7,769	6,535

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP 2019-08 - This is a new project to the CIP being driven by recommendations from the Wastewater Masterplan Changes Project (2019).



BudgetWastewaterClass Lvl 1WastewaterClass Lvl 2CSO FacilitiesClass Lvl 3Multiple CSO Facilities
Class Lvl 1 Wastewater
Budget Wastewater

CSO discharge. Untreated CSO discahrges let debris from the sewer and bacteria make their way into fresh water bodies and are not good for public health or the environment. The NPDES permit requires control of this outfall to Michigan water quality standards. The Leib Screening and Disinfection Facility was designed with capacity to screen and disinfect the Meldrum Sewer CSO flow, but presently there is no way to get the flow from the Meldrum sewer to the Conant-Mt. Elliot sewer (and to Leib). This project is a high-level recommendation from the wastewater masterplan. An rfp will need to be developed that further develops the project scope necessary to achieve the desired outcome of connecting the Meldrum sewer to the Contant-Mt. Elliot sewer.

Scope of Work / Project Alternatives The scope of work involves connecting the Meldrum sewer to the Conant-Mt. Elliot Sewer with a diversion pipe that is 5 feet in diameter. New gates would be installed in the Meldrum sewer which direct flow through this diversion and into the Conant-Mt. Elliot sewer, which would then be processed through the Leib Screening and Disinfection Facility. These gates would allow dry weather flow to take it's normal route through the Meldrum sewer to the DRI, and would divert wet-weather to Leib SDF. This would reduce untreated CSO discharge, a requirement of the NPDES Permit.

Other Important Info Recommended in DWSD LTCSO Plan of 2008.

**Related Project** CS-299 facility assessment of Leib SDF. The Leib SDF will need to have capital investment to improve the reliability of equipment and the facility to be ready to accept additional flow.

Primary Driver 3 - Regulatory

Driver Explanation Appr B - Page 385 The NPDES permit requirs GLWA to reduce untreated CSO discharge. This project is a low cost option to



### Meldrum Sewer Diversion and VR-15 Improvements

accomplish this for the B-07 outfall. In addition to regulator, this results in better improved public benefit from better water quality.



#### PM Weighted

Score

56.4

Criteria	Score	Comment
Financial	1	This is difficult to score since not doing the proj
Public Health and Safety	4	The project will reduce untreated CSO overflo
Public Benefit	5	This is a low-cost solution to divert flow from the
Condition	1	This doesn't really apply.
Operations and Maintenance	1	This project increases O&M, and therefore has
Performance (Service Level/Reliability)	1	This doesn't really apply.
Efficiency and Innovation	4	This pipe connection with some weirs & gates
Regulatory (Environmental/Legal)	5	This is DEQ outfall 009 and is a high priority, nor

### **RC Weighted**

Score

### 62.4

Criteria	Score	Comment
Operations and Maintenance	1	
Public Benefit	5	
Performance (Service Level/Reliability)	3	
Efficiency and Innovation	4	
Financial	1	
Public Health and Safety	4	
Regulatory (Environmental/Legal)	5	
Condition	1	



Meldrum Sewer Diversion and VR-15 Improvements

270002 CIP#

Phase Design & Co	onstruction	n Assistand	ce		Contro	ict TB	D		Status Fu	ture Planned S	Start
Title Design and C	Constructio	on Assistai	nce for Me	eldrum Dive	rsions						
Phase is to comple closeout. Include		0	0					0	h construc <sup>.</sup>	tion time peric	d & project
Phase Budget Wa	astewater						Cost A	Allocation (	CSO 83/17		
Phase Status Fu				Fundir	ng Source	Bond Proce	eds				
Start Date								Fund (	Constructio	n Bond Fund	
End Date						U	seful Lif	e >20Yrs?	(es		
Cost	Estimatio	n Informat	ion		To	. Fede	eral Loai	n Amount			\$0
	4		st. Class			Pro	aram/A	llowance T	ask Informa	ation	
8/	1/2019	Cost E	st. Date		Project Man		- ·	lastally			
CDM Smith WW					CIP Number						
Carl Johnson			st. Prepare		Description				-	anges will be CIP number.	
Cost Type		Fiscal Ye	ar E		Fringe Ben	efitNo	nPerson	ine	Comme	ent	
Engineering Service	es F	Y24		\$500				2021 CIP	)		
Engineering Service	es F	Y25		\$33				2021 CIP	)		
Engineering Service	es F	Y26+		\$467				2021 CIP	)		
			Phase Tot	al Expense	es By FY (All	figure	es are i	n \$1,000's)			
Prior Yr Actual F	Y20	FY21	FY22	FY23	FY24	FY	25	FY26+	Total	5-Yr Total	
0	0	0	0	0	500		33	467	1,000	533	
Phase Task Dates											
Phase Task Name	Start Do	ite End	Date	Duration							
Pre-Procurement	5/7/2	2022 9	/3/2022	119							

Procurement

9/4/2022

6/30/2023

299

GLWA Great Lakes Water Autho	<b>A</b> rity				LWA FY 2021 n Sewer Dive			Improver	nents	270002 CIF
Phase Task Name	Start Do	ate E	nd Date	Duration						
Project Execution	7/1/2	2023 1	2/31/2027	1644	4					
Phase GLWA Empl Title GLWA Salarie		ject mc	anagement		Contract	NA		<b>Status</b> Fu	ture Planned S	tart
Phase Budget W	astewate	r				Cost A	llocation	CSO 83/17		
Phase Status Fu	ture Plan	ned Stai	rt			Fundin	g Source	Bond Proce	eds	
Start Date							Fund	Constructio	n Bond Fund	
End Date						Useful Life	e >20Yrs?	Yes		
Cost	Estimatio	n Inform	nation		Tot. F	ederal Loan	Amount			\$0
		Cos	t Est. Class			Program/Al	lowance	Task Inform	ation	
		Cos	t Est. Date		Project Manag	ler				
		Cos	t Est. Sourc	e	CIP Number					
		Cos	t Est. Prepo	red By	Description					
Cost Type		Fiscal	Year	Expense	Fringe Benefi	NonPerson	ne	Comme	nt	
GLWA Salaries CIP		-Y22		\$1			2021 CII			
GLWA Salaries CIP:		-Y23		\$8			2021 CI			
GLWA Salaries CIP:	2021	-Y24		\$8	6		2021 CII	P		
GLWA Salaries CIP:	2021	Y25		\$9	2		2021 CII	P		
GLWA Salaries CIP:	2021	-Y26+		\$30	2		2021 CII	P		
			Phase To	otal Expens	ses By FY (All fig	gures are in	\$1,000's	)		
Prior Yr Actua F	Y20	FY21	FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
0	0	С	) 1;	3 8	6 86	92	302	579	277	
Phase Task Dates	;									

GLV Great Lakes Wate	<b>VA</b> <i>r</i> Authority			-	LWA FY 202 n Sewer Div				mprovem	ents	270002
ase Construc					Contra	ct TBD			Status Fut	ure Planned St	art
		Aeldrum Di									
discharge thro	ugh the Lei	b SDF. This	will result i	n untreated		ge bec	coming	g "treated"	CSO discho	t untreated CS Irge. There is c	
Phase Budget	Wastewa	er				(	Cost A	llocation (	CSO 83/17		
Phase Status	Future Pla	nned Start				I	Fundin	g Source B	ond Procee	eds	
Start Date								Fund (	Constructior	n Bond Fund	
End Date						Use	eful Life	e >20Yrs? Y	'es		
С	ost Estimat	ion Informa	tion		Tot.	Federo	al Loan	Amount			\$0
	4	Cost	Est. Class			Progr	am/Al	lowance T	ask Informa	tion	
	8/1/2019	Cost	Est. Date		Project Mana	ager (	Chris N	astally			
CDM Smith (N	NWMP)	Cost	Est. Source	è	CIP Number						
Carl Johnson		Cost	Est. Prepar	ed By	Description				owance of		
									project prior n condition	to bidding ou s.	t to
Cost Ty	rpe	Fiscal Ye	ear	Expense	Fringe Bene	efitNonF	Personi	ne	Comme	nt	
onstruction		FY25		\$37	7			2021 CIP			
onstruction		FY26+		\$4,463	3			2021 CIP			
			Phase To	tal Expens	es By FY (All	figures	are in	n \$1,000's)			
or Yr Actua	FY20	FY21	FY22	FY23	FY24	FY2	-	FY26+	Total	5-Yr Total	
	0	0	0	(	0		37	4,463	4,500	37	

Phase Task Name	Start Date	End Date	Duration
Procurement	7/1/2024	4/26/2025	299
Project Execution	4/27/2025	7/4/2027	798

App B - Page 390

GLWA Great Lakes Water Author	ity			WA FY 2021-2025 CIP 270002 of Sewer Diversion and VR-15 Improvements	CIP#
Phase Task Name	Start Date	End Date	Duration		
Project Closeout	7/5/2027	12/31/2027	179		



270002 CIP#

#### Meldrum Sewer Diversion and VR-15 Improvements

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	0	0	13	86	586	162	5,232	6,079	847

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** 2019-08 - This is a new project to the CIP being driven by recommendations from the Long Term CSO Control **Changes** Plan from 2008 and further evaluation and recommendation from the Wastewater Masterplan Project (2019).

GLWA Great Lakes Water Authority	GLWA FY 2021-2025 CIP Long Term CSO Contr	270003 CIP# ol Plan
Managing Dept Date Original Business Case	Chris NastallyClassChris NastallyClassCSOClass	<ul><li>Lvl 2 CSO Facilities</li><li>Lvl 3 Multiple CSO Facilities</li><li>Autiple Counties</li></ul>
or add 2010 v issued appro accor shall o Scope of Work / Project Alternatives permi plans	PDES permit which governs CSO Discharges for GLWA requires equate treatment of combined sewer discharges containing r were approved by the EGLE (formerly MDEQ) and are the curre in July of 2019 opened the door for GLWA to refresh the Long oval by 11/15/2022. There are 56 total untreated outfalls operc rdance with the NPDES permit language. The language allow address first, second & last, but nonetheless requires all of them roject will be a predecessor project to executing a long term O t. This project will include evaluation of the requirements and of record, evaluation of elements within the Wastewater Mast lability, evaluation and siting of specific projects to be executed	aw sewage. The current plans of 2008 and ent plans of record. The new NPDES permit Term Plan and submit to EGLE for review and ted by GLWA that require control in for flexibility in terms of which outfalls GLWA to be addressed. CSO control plan, as required by the NPDES work done under the 2008 and 2010 current erplan aimed at CSO Control, evaluation of

Other Important Info Plan, including a new storage conduit on the west-side for first flush capture, in-system storage dams, system diversions, and some netting facilities locations strategically selected. These will need to be evaluated and further fleshed out under this project and also evaluated against current system requirements, and former Long Term requirements and plans set forth in 2008 and 2010.

recommended projects to address affordability. The RFP for this project is presently being drafted.

**Related Project** Wastewater Masterplan - provides some inputs to this project, Former LT CSO Control 2008/2010 plans



### Long Term CSO Control Plan

**Driver Explanation** The NPDES permit requires GLWA to provide for prohibition, elimination, or adequate treatment of combined sewer discharges containing raw sewage.



### PM Weighted

Score

59.6

Criteria	Score	Comment
Operations and Maintenance	1	This project will increase O&M requirements ul
Condition	1	This really doesn't apply.
Efficiency and Innovation	2	l scored this a 2 because elements of the plar
Performance (Service Level/Reliability)	3	This project will result in less untreated CSO Dis
Public Health and Safety	4	By controling remaining untreated CSO dische
Financial	3	The development of the plan is relatively inex;
Public Benefit	3	By reducing trash put into the river(s) during ur
Regulatory (Environmental/Legal)	5	This plan is required by regulatory NPDES perm

### **RC Weighted**

Score

### 59.6

Criteria	Score	Comment
Performance (Service Level/Reliability)	3	
Condition	1	
Public Benefit	3	
Regulatory (Environmental/Legal)	5	
Financial	3	
Operations and Maintenance	1	
Efficiency and Innovation	2	
Public Health and Safety	4	
L	1	

GLWA Great Lakes Water Authority			GL	WA FY 20 Long Te			ontrol P	lan			270003
nase Study				Contro	ict TB	BD		Status	Futu	ure Planned S	itart
le Long Term CSO Con	trol Plan Develo	pment (stud	y pha	se)							
his phase will develop th tudy/project, plans for d erm CSO control as defir	esign and cons <sup>-</sup>	truction will b	e dev	veloped with	n the p	ourpose					for long
Phase Budget Wastewa	ter					Cost A	llocation	CSO 83/	17		
Phase Status Future Pla	inned Start					Fundin	g Source	Revenue	e Fina	anced Capito	al
Start Date							Fund	I&E/Bon	d		
End Date					U	seful Life	e >20Yrs?	Yes			
Cost Estimat	ion Information		1	То	l. Fede	eral Loar	n Amount				\$0
5	Cost Est.	Class			Pro	gram/A	llowance	Task Info	ormat	ion	
8/20/2019	Cost Est. I	Date	F	Project Man		Chris N					
CSO Manager	Cost Est. S	ource	(	CIP Number	,						
CSO Manager	Cost Est. I	Prepared By	ſ	Description		This pro	oject will c	contain c	in alle	owance,	
		. ,	1			howev determ		nount ar	id wh	nat for is not	
Cost Type	Fiscal Year	Expens		Fringe Ben	ofitNo	nPerson	no	Cor	nmer	\t	
ngineering Services	FY21		2,710	Thinge ben	ennito		2021CI				
ngineering Services	FY22		2,134				2021CI	Р			
ngineering Services	FY23		\$656				2021CI	Р			
	Pho	ise Total Exp	ense	s By FY (All	figure	es are ir	n \$1,000's	;)			
ior Yr Actual FY20	FY21 F	Y22 FY2	23	FY24	FY	25	FY26+	Toto	I	5-Yr Total	
0 0	2,710	2,134	656	0		0	(	) 5,	500	5,500	
hase Task Dates											
Phase Task Name Start	Date End Do	ite Durati	on								
re-Procurement 9/1	5/2019 2/28/	2020	166								

GLWA Great Lakes Water Author	εu		G	LWA FY 20 Long T	21-2025 C erm CSO (		lan		270003 CI
Phase Task Name	Start Date	End Date	Duration						
Procurement	2/29/2020	8/27/2020	180	D					
Project Execution	8/28/2020	11/15/2022	809	2					
Project Closeout	11/16/2022	2/14/2023	90	)					
Phase GLWA Emplo Title GLWA Salries	oyees Project	managemen	t	Contro	act NA		<b>Status</b> Fu	uture Planned S	itart
Phase Budget Wo	istewater				Cost	Allocation	CSO 83/17		
Phase Status Fut	ure Planned S	Start			Fund	ing Source	Revenue Fi	nanced Capit	al
Start Date						_		ent & Extension	
End Date					Useful L	ife >20Yrs?	•		
				-					<b>*</b>
Cost	Estimation Info	ormation		10	t. Federal Loc	an Amount			\$0
	(	Cost Est. Class			Program/	Allowance	Task Inform	ation	
	(	Cost Est. Date		Project Mar	ager				
	(	Cost Est. Sourc	e	CIP Number					
	(	Cost Est. Prepa	ared By	Description					
Cost Type	Fisc	cal Year	Expense	Fringe Ber	efilNonPerso	nne	Comme	ent	
GLWA Salaries CIP2	021 FY20		\$6	8		2021C	IP		
GLWA Salaries CIP2	.021 FY21		\$8	6		2021C	IP		
GLWA Salaries CIP2	021 FY22		\$8	6		2021C	IP		
GLWA Salaries CIP2	021 FY23		\$5	4		2021C	IP		
		Phase T	otal Expens	ses By FY (Al	figures are	in \$1,000's	s)		
Prior Yr Actual FY	20 FY2	I FY22	FY23	FY24	FY25	FY26+	Total	5-Yr Total	
0	68	86 8	6 5	4 0	0	(	294	226	
Phase Task Dates									

**)**#



### Long Term CSO Control Plan

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	68	2,796	2,220	710	0	0	0	5,794	5,726

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

Description of CIP 2019 - This project is new to the CIP. I was formerly pulled out of the unallocated amount in the CSO Control Changes Program 260600 of previous CIP version.



<ul> <li>Innovation</li> <li>Conceptual WW MP</li> <li>Water MP Right Sizing</li> </ul>	Project Status Future Planned CIP Type Project	
<ul> <li>Reliability/Redundancy</li> <li>NEWTP Repurposing</li> </ul>	Y Project New To CIP	
Project Engineer/Manage Director	r Chris Nastally r Chris Nastally	BudgetWastewaterClass Lvl 1WastewaterClass Lvl 2CSO Facilities
Managing Dep Date Original Business Cas	t CSO	Class Lvl 2 Coordenines Class Lvl 3 Baby Creek Location Multiple Counties Fund and Cost Center
from (app sludg debr	the Baby Creek Screening & Disinfe proximately 5,500 feet). During the o ge from the pipe. That is because th ris from the outfall. Having debris in sport flow, potential re-growth of ba	sists of (3) 14'-6" wide by 17'-6" tall concrete box culverts which extend ection Facility to the Baby Creek Outfall on the Rouge River original construction of the facility a project was conducted to remove here was, and is no way to flush the outfall, and no easy way to clean the the outfall will cause operational issues in terms of loss in capacity to acteria during events making disinfection more difficult or require more
cher	nical disintection, and limiting GLW/ entire pipe.	A's ability to perform inspections and adequately assess the condition of

assist GLWA in acquiring these easements. This easement will likely be through Woodmere Cemetery and the Patton Park between Vernor & the Baby Creek SDF. GLWA also anticipates the Consultant providing Construction Assistance once this project goes into Construction.

Other Important Info App B - Page 399 The current outfall is not capable of being flushed and the solids level will build up after each rain event.



#### Baby Creek Outfall Improvements Project

Furthermore, the rising river level continues to impact this facility and the outfalls capacity. Having a build up of sludge does not favor Baby Creek in passing the necessary flows because the headloss through the pipes is small and the capacity of the pipes are reduced to to the reduction in cross-sectional area.

#### Primary Driver 4 - O&M

Driver Explanation There is no way to clean the outfall. Current access points in the cemetery to facilitate cleaning are contained within a limited easment that prohibits execution of a project to just clean because there are gravesites over the pipe, and tight esmt limit



#### PM Weighted Score

71.4

#### Criteria Comment Score Operations and Maintenance 5 We cannot perform the proper maintenance Regulatory (Environmental/Legal) 3 The debris could cause a bacteria re-growth a Financial 3 Canceling or delaying this project could result Performance (Service Level/Reliability) 5 two of the three pipes have approximately 6ft Condition 2 Pipe was installed in the 1960's. The condition Public Health and Safety 3 While we meet our NPDES permit requirement Efficiency and Innovation 41 think installing a flushing system will result in G Public Benefit 4 think right now with poor easement limits def

#### **RC Weighted**

Score

### 72.8

Score	Comment
4	
3	
2	
5	
4	
3	
4	
4	
	Score 4 3 2 5 4 3 4 4 4

GLW Great Lakes Water.	<b>Authority</b>					A FY 202 Creek Ou				nts Proj	ect		277001 CI
Phase Study and Title Study and	-				nents	Contrac	t TBI	D		Status	Fut	ure Planned S	Start
Phase includes also include ever removal projec as of yet becau improvements t	aluation of ts if necess use of the se	pipe acce ary. This pr elected alt	ess alternc oject will ernatives	atives and lead to c are not k	d desi onstr nowi	ign of the se uction biddi n and the co	lecte ng da	d alterr ocumet	native tha rs, but the	t facilita constru	tes c ction	conducting slu phase is not	identified
Phase Budget	Wastewate	er						Cost A	llocation	CTA			
Phase Status	Future Plar	nned Start						Fundin	g Source	Bond Pr	ocee	eds	
Start Date									Fund	Constru	ctior	n Bond Fund	
End Date							Us	eful Life	e >20Yrs?	Yes			
Co	ost Estimatio	on Informa	tion			Tot.	Fede	ral Loan	n Amount				\$0
	5	Cost	Est. Class				Prog	jram/Al	llowance	Task Info	orma	tion	
	8/9/2019	Cost	Est. Date		Project Manager								
CSO Manage						CIP Number							
CSO Manage	er	Cost	Est. Prepa	red By	d By Description Tentative project					t schedu	le is	as follows:	
								Constru throug	uction Pro h 12-27-25	oject Exe	cutic	-1-22 thru 12-2 on: 12-28-22 le size of proje	
Cost Ty	ре	Fiscal Ye	ear	Expense		Fringe Bene <sup>.</sup>	filNor	Person	ne	Cor	nmei	nt	
Engineering Serv	vices	FY21		\$1,	165				2021 CI	Р			
Engineering Serv	vices	FY22		\$8	335				2021CI	Р			
			Phase To	otal Expe	nses	By FY (All fi	gure	s are ir	n \$1,000's	5)			
Prior Yr Actual	FY20	FY21	FY22	FY23		FY24	FY2	25	FY26+	Toto	al	5-Yr Total	
0	0	1,165	835	5	0	0		0	С	) 2,	.000	2,000	

GLWA Great Lakes Water Authorit	a a a a a a a a a a a a a a a a a a a			WA FY 20 by Creek C				its Proje	ect		277001 CIP
Phase Task Dates											
Phase Task Name	Start Date	End Date	Duration								
Pre-Procurement	8/1/2019	1/31/2020		_							
Procurement	2/1/2020	10/27/2020		_							
Project Execution	10/28/2020	4/29/2022	548	8							
Phase GLWA Emplo Title GLWA Salaries		managemer	it	Contro	ict NA			Status	Futu	re Planned St	art
Phase Budget Wo	stewater					Cost A	llocation	CTA			
Phase Status Fut	ure Planned S	Start				Fundin	g Source	Bond Prc	cee	ds	
Start Date							Fund	Construc	ction	Bond Fund	
End Date					Use	əful Life	e >20Yrs?	Yes			
Cost	stimation Info	rmation		То	. Federa	al Loar	n Amount				\$0
Cosi i								<b>T</b>			40
		Cost Est. Class		Program/Allowance Task Information Project Manager							
		Cost Est. Date		-							
	(	Cost Est. Sour	ce	CIP Number							
	(	Cost Est. Prep	ared By	Description							
Cost Type	Fisc	al Year	Expense	Fringe Ben	efilNonf	Person	ne	Com	imen	†	
GLWA Salaries CIP2	021 FY20		\$7	9			2021 CI	Р			
GLWA Salaries CIP2	021 FY21		\$8				2021 CI	Ρ			
GLWA Salaries CIP2	021 FY22		\$7	2			2021CI	Ρ			
		Phase T	otal Expens	ses By FY (All	figures	are ir	ר\$1 <i>,</i> 000's ו	)			
Prior Yr Actual FY	20 FY21	FY22	FY23	FY24	FY2	5	FY26+	Total	I	5-Yr Total	
0	79	86 7	/2	0 0		0	C	2	237	158	
Phase Task Dates											
App B - Page 40	55										

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**Baby Creek Outfall Improvements Project** 

### Project Total Expenses By FY Compared to Prior CIPs (All figures are in \$1,000's)

CIP Alias	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total	5-Yr Total
2021	0	0	0	0	79	1,251	907	0	0	0	0	2,237	2,158

\* In Table above, for CIP Alias 2021, FY26 column represents expenses for FY26 through FY30

**Description of CIP** 2019 - Project added to the database.

Changes