

IT Committee

From: Eric Nakagawa <Eric.Nakagawa@co.maui.hi.us>
Sent: Monday, November 1, 2021 8:32 AM
To: IT Committee
Subject: IT-76 Central Maui Regional Wastewater Reclamation Facility Project (Waikapu)
Attachments: 2021-11-01 Central Maui WWRF for DEM.pdf

Aloha All,

Please see the attached presentation for today.

Thanks,
Eric Nakagawa, P.E.
Director

County of Maui
Department of Environmental Management
2050 Main Street, Suite 2B
Wailuku, Maui, HI 96793
Office: (808) 270-8230

Central Maui Wastewater Reclamation Facility (WWRF)

Infrastructure and Transportation Committee
11-01-2021

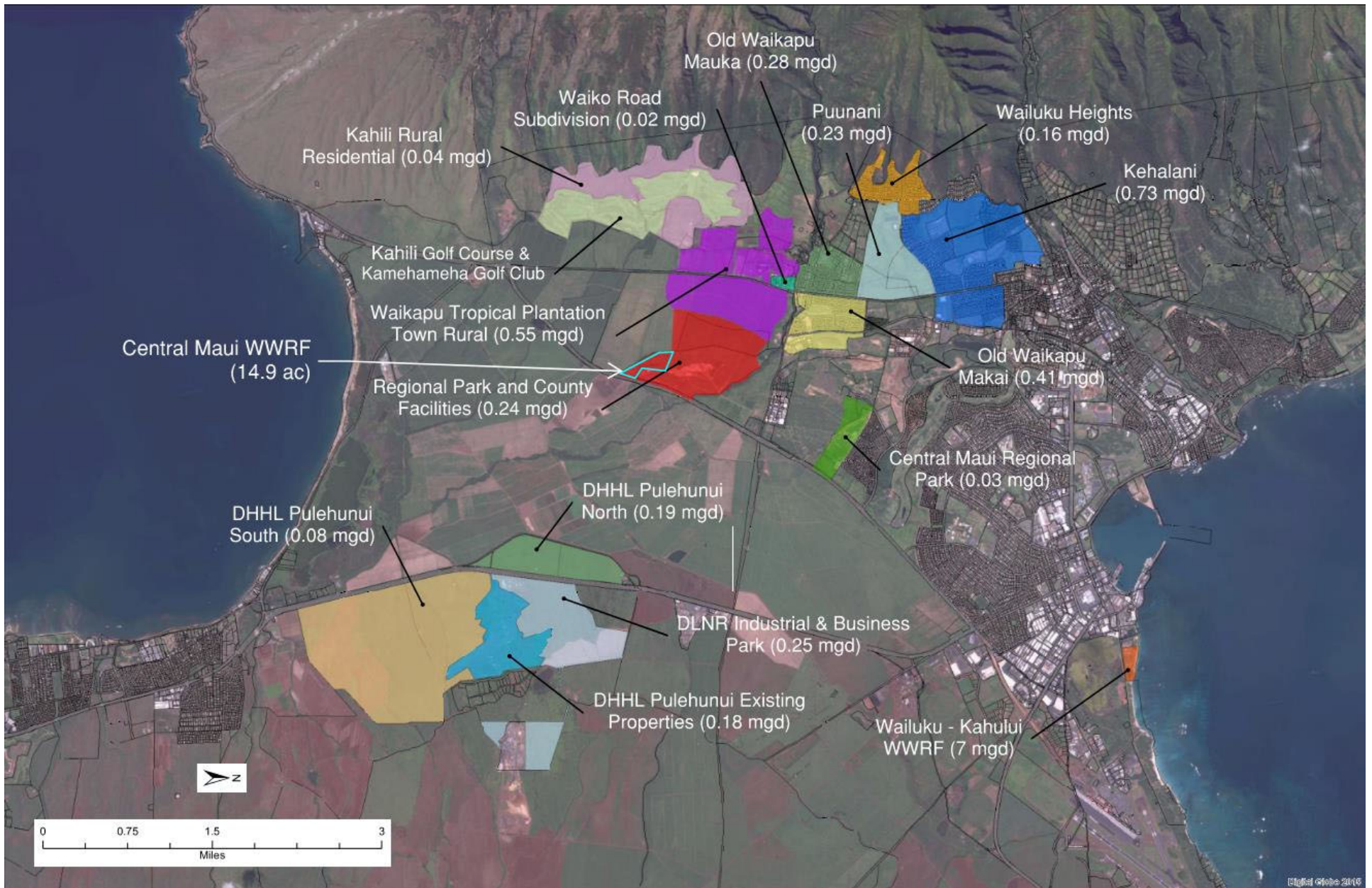
Central Maui WWRF Project Overview

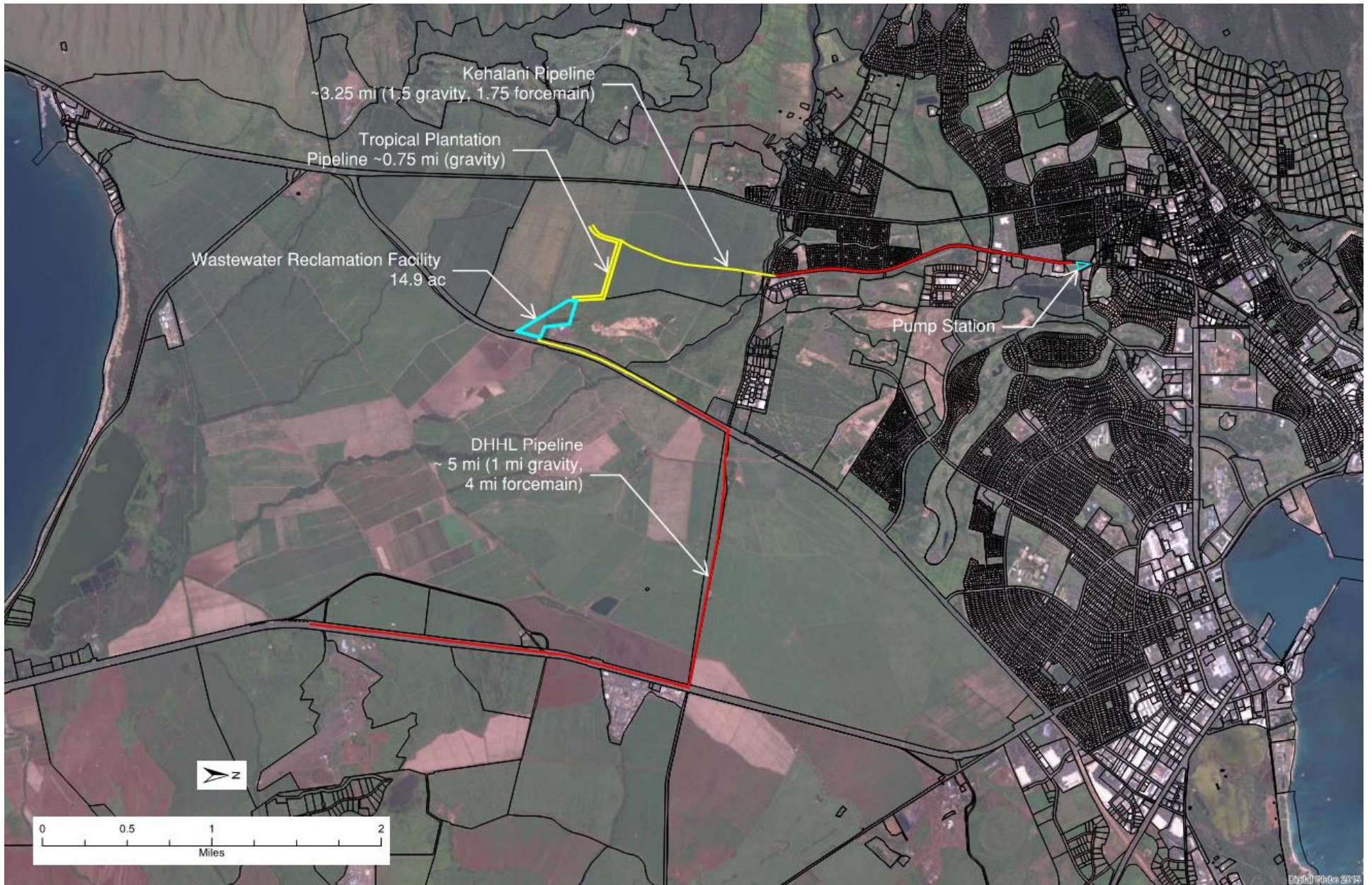
Project Components

- Central Maui (Waikapu) Wastewater Reclamation Facility
 - Headworks, Primary and Secondary Treatment, R1, Disinfection, Electrical and Admin buildings
- Soil Aquifer Treatment (on-site)
 - Approximately 9 acres (need Geotechnical data confirmation)
- Wailuku Heights, Kehalani, Waikapu wastewater collection system modifications
- Available for wastewater connection to developments in Central Maui
- R1 Distribution (to Maui Tropical Plantation, Regional Park, etc.)

Service Area

- Wailuku Heights
- Kehalani
- Waikapu
- Tropical Plantation
- DHHL, DLNR
- Waiko Rd Subdivision





CentralMauiWWRF-Schedule202110

ID	Task Mode	Task Name	Duration	Estimated Start	Estimated Finish	0	2021	2022	2023	2024	2025	2026	2027	2028
1		Central Maui WWRF: WWRF, Kehalani PS, Kehalani Pipeline	1998 days	Wed 7/1/20	Fri 6/2/28									0%
2		Planning / Environmental Documents	1458 days	Wed 7/1/20	Mon 4/13/26									0%
3		Site Selection	13.05 mons	Wed 7/1/20	Wed 7/14/21									0%
4		EIS for WWRF, Kehalani PS, Kehalani Pipeline	960 days	Mon 1/3/22	Fri 10/17/25									0%
5		Draft EIS	30 mons	Mon 1/3/22	Wed 5/15/24									0%
6		Final EIS	18 mons	Thu 5/16/24	Fri 10/17/25									0%
7		Special Use Permit - County	6 mons	Mon 10/20/25	Mon 4/13/26									0%
8		Subdivision	6 mons	Mon 10/20/25	Mon 4/13/26									0%
9		WWRF (with on-site SAT) Design and Construction	1020 days	Thu 5/16/24	Fri 6/2/28									0%
10		Design and permitting - WWRF (begin at risk before Final	18 mons	Thu 5/16/24	Fri 10/17/25									0%
11		Procurement - WWRF construction contract	3 mons	Tue 4/14/26	Wed 7/8/26									0%
12		Construction - WWRF	24 mons	Thu 7/9/26	Fri 6/2/28									0%
13		Kehalani Pipeline	900 days	Thu 5/16/24	Fri 12/10/27									0%
14		Design and permitting - pipeline (begin at risk before Final	18 mons	Thu 5/16/24	Fri 10/17/25									0%
15		Procurement - pipeline construction contract	3 mons	Mon 10/20/25	Fri 1/16/26									0%
16		Construction - pipeline	24 mons	Mon 1/19/26	Fri 12/10/27									0%
17		Kehalani PS	900 days	Mon 8/12/24	Thu 3/9/28									0%
18		Land Acquisition	9 mons	Mon 10/20/25	Wed 7/8/26									0%
19		Design - PS (begin at risk before Final EIS)	15 mons	Mon 8/12/24	Fri 10/17/25									0%
20		Procurement - PS construction contract	3 mons	Thu 7/9/26	Thu 10/1/26									0%
21		Construction - PS	18 mons	Fri 10/2/26	Thu 3/9/28									0%
22		WWRF Operational	0 days	Fri 6/2/28	Fri 6/2/28									6/2

Central Maui WWRF Project Overview

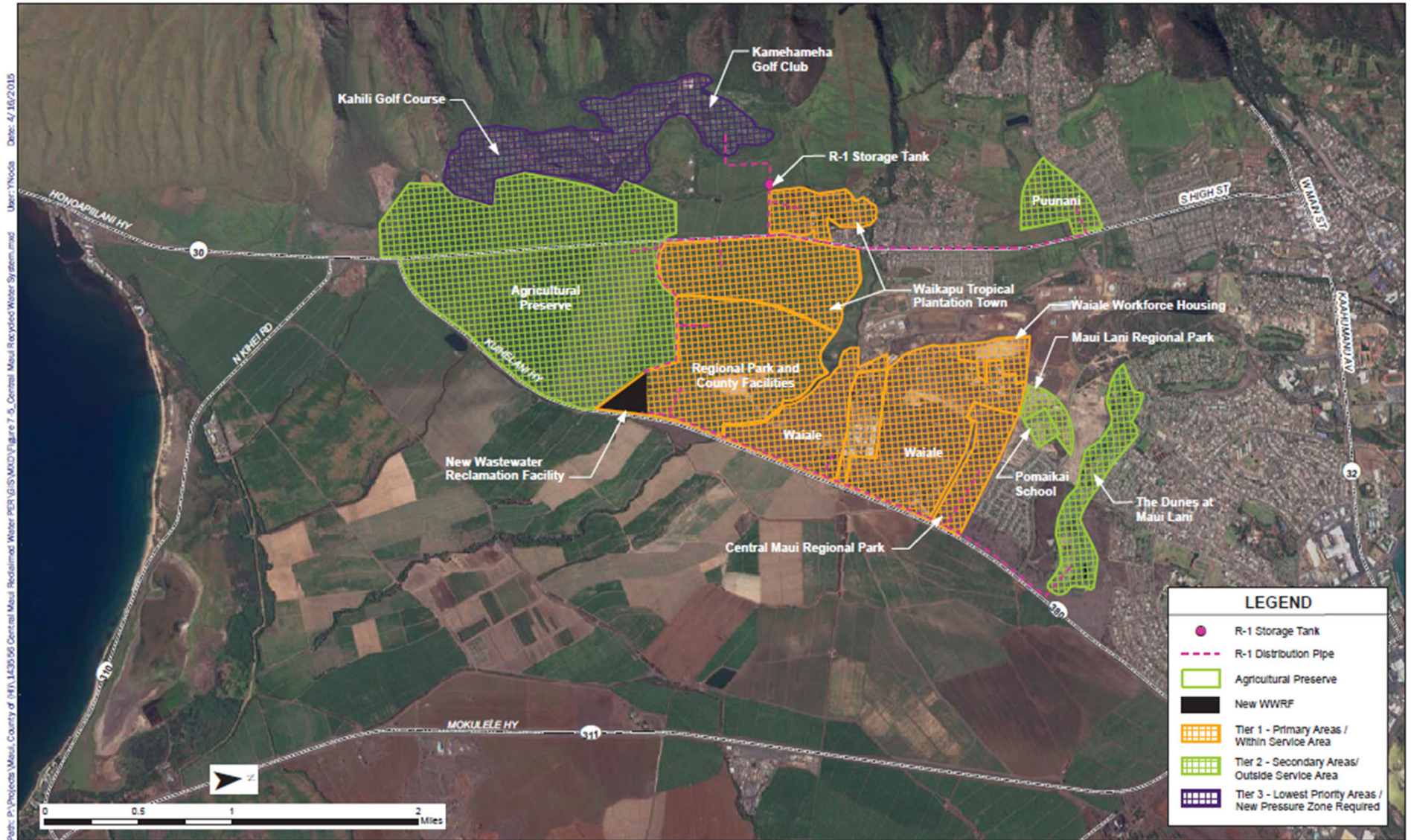
Project Components

- PER
- Site Selection
 - Work with DOH
- EIS for SAT, Pipelines, PS, Facility
 - Draft EIS
 - Final EIS
- Design/Permitting
- Construction

Timeline

- 6 months (12/2021)
- 9 months (done)

- 30 months (5/2024)
- 18 months (10/2025)
- 18 months (10/2025)
- 24 months (6/2028)



Date: 4/18/2015
 User: rfnods
 Path: P:\Projects\Maui - County of HAWAII\GIS\MAUI\Map\Reclaimed Water RIR\GIS\MAUI\Figure 7-5_Central Maui Recycled Water System.mxd



Figure 7-5
 Recycled Water System and Use Areas

Source:
 Esri Web Map, ArcGIS Imagery Map Service, March 2013

Estimated Central Maui WWRF Project Costs

Description	Approx. Cost (million \$)	AACE Class 5 Range (- 50% to +100%)
COUNTY		
EIS (planning and preliminary engineering)	2.0	1.0 - 3.0
Land acquisition (Kehalani PS)	1.0	0.5 - 2.0
Construction		
WWRF (3mgd, R1; 9ac SAT)	86	43 - 172.0
Kehalani PS (1.5 mgd)	5.5	2.8 - 11.0
Kehalani Pipeline (3.25mi - 1.25mgd, 16")	11	5.5 - 22.0
R1 Distribution Pipelines (~5mi, 16")	17	8.5 - 34
<i>Construction Sub-total</i>	<i>122.5</i>	<i>61.3 - 245</i>
Design, SDCs, CM - 25% of Construction	30.6	15.3 - 61.3
<i>Total (County)</i>	<i>152.1</i>	<i>76.6 - 306.3</i>
OTHERS		
Construction		
Maui Tropical Plantation Pipeline (0.75 mi - 0.65mgd, 12") - Atherton?	1.9	1.0 - 3.8
Pulehunui Pipeline (5 mi - 0.75mgd, 12") - DHHL?	12.7	6.4 - 25.4
Construction Sub-total	14.6	7.3 - 29.2
Design, SDCs, CM - 25% of Construction	3.7	1.9 - 7.4
Total (OTHERS)	18.3	9.2 - 36.6

Wastewater Division 6 year CIP Plan

WASTEWATER RECLAMATION DIVISION PROPOSED SIX YEAR CIP PLAN COSTS (FY 2022)

Council Approved				FISCAL YEAR							
Priority	CBS No.	AT	FT	PROJECT	2022	2023	2024	2025	2026	2027	
				KIHEI - MAKENA	Subtotal	6,850,000 13%	28,600,000 42%	36,000,000 33%	13,200,000 20%	12,000,000 16%	2,500,000 6%
2	CBS-1148	1	3	Kihei-Makena EPA Compliance Sewer Rehabilitation			2,000,000 (D/C) c				
2	CBS-2321	1	6	North Kihei Mauka Transmission System		6,000,000 (C) b	6,000,000 (C) b	5,000,000 (C) b			
3	CBS-6082	1	6	South Kihei Capacity Sewer Upgrades					400,000 (PER) c		
3	CBS-3563	1	3	Kihei No. 3 Force Main Replacement (1993)		4,800,000 (C) b					
3	CBS-3564	1	3	Kihei No. 4 Force Main Replacement (1993)		3,000,000 (C) b					
3	CBS-2729	1	3	Kihei No. 6 Force Main Replacement (1991)	650,000 (D) c		6,000,000 (C) s				
3	CBS-2322	1	3	Kihei No. 7 Force Main Replacement (1992)		900,000 (C) s					
1	CBS-3197	1	3	Kihei No. 8 Force Main Replacement (1992)	1,000,000 (C) s						
3	CBS-5519	2	3	Kihei WWPS No. 2 Modifications/Upgrade (1977)	200,000 (D) c		2,000,000 (C) c				
3	CBS-3199	2	3	Kihei WWPS No. 4 Modifications/Upgrade (1995)				200,000 (D) c		2,000,000 (C) s	
3	CBS-3568	2	3	Kihei WWPS No. 5 Mod./Upgrade and Force Main (1995)			400,000 (D) c		4,300,000 (C) s		
3	CBS-3569	2	3	Kihei WWPS No. 6 Modifications/Upgrade (1995)			600,000 (D) c		6,800,000 (C) s		
3	CBS-3570	2	3	Kihei WWPS No. 7 Relocation/Modifications/Upgrade (1995)	800,000 (D) b		8,000,000 (C) b				
3	CBS-5027	2	3	Kihei WWPS No. 8 Modifications/Upgrade (1995)		400,000 (D) c		4,000,000 (C) s			
3	CBS-5028	2	3	Kihei WWPS No. 9 Modifications/Upgrade (1995)	2,300,000 (C) b						
3	CBS-1152	2	3	Kihei WWPS No. 16 Modifications/Upgrade (1995)	900,000 (C) c						
4	CBS-5031	5	4	Kihei WWRF Ultraviolet Upgrade						500,000 (D) c	
5	CBS-5032	1	4	Kiaola Place Sewer Extension	100,000 (D) c		1,000,000 (C) c				
4	CBS-5030	1	5	Liloa Drive Recycled Water Distribution Line		4,000,000 (C) b					
5	CBS-1166	1	5	South Maui Reuse Distribution System Expansion (Wailea)					500,000 (PER/D) c		
4	CBS-5521	1	5	North Kihei Reuse Distribution System Expansion		400,000 (PER/D) c		4,000,000 (C) c			
2	CBS-5520	3	7	Kihei Land Application System		10,000,000 (C) b	10,000,000 (C) b				
				WAILUKU-KAHULUI	Subtotal	9,000,000 17%	17,250,000 25%	56,100,000 52%	34,800,000 53%	52,100,000 70%	8,200,000 21%
2	CBS-1131	1	3	Wailuku-Kahului EPA Compliance Sewer Rehabilitation	2,000,000 (D/C) c	1,000,000 (D/C) c	1,000,000 (C) c	2,000,000 (D/C) c		2,000,000 (D/C) c	
3	CBS-3212	2	3	Hoo Hui Ana WWPS Modifications			100,000 (PER/D) c		1,000,000 (C) s		
5	CBS-1158	1	4	Waiko Road Subdivision Sewer System			2,500,000 (C) s				
5	CBS-3204	1	4	Upper Waiko Road Sewer Extension		150,000 (D) c		2,000,000 (C) c			
5	CBS-3205	1	4	Old Wailuku Heights Sewer System				300,000 (D/PER) c		6,000,000 (C) c	
3	CBS-2323	2	3	Wailuku WWPS Modifications		100,000 (PER) c	500,000 (D) c		3,000,000 (C) b		
3	CBS-5526	2	3	Walehu Kou WWPS Modifications		200,000 (D) c		2,000,000 (C) s			
3	CBS-6085	2	3	Kahului WWPS Modifications (2007)					300,000 (D) c		
3	CBS-3211	2	3	Kaa WWPS Modifications						200,000 (D) c	
3	CBS-4586	5	3	Wailuku-Kahului WWRF Shoreline Erosion Protection (2014)		300,000 (D/C) c					
1	CBS-3574	5	1	Wailuku-Kahului WWRF Concrete Rehabilitation				500,000 (C) c			
2	CBS-5033	3	7	Wailuku-Kahului SAT Basins			5,000,000 (C) b	5,000,000 (C) b			
2	CBS-1171	3	5	Wailuku-Kahului Recycled Water Force Main		13,500,000 (C) s					
2	CBS-5034	3	5	Wailuku-Kahului Recycled Water Pump Station			6,000,000 (C) s				
4	CBS-1169	5	5	Wailuku-Kahului WWRF R-1 Upgrade					1,800,000 (D) c		
4	CBS-3206	3	4	Central Maui Regional WWRF (Waikapu)	(919002B) 3,500,000 (D) c		20,000,000 (C) b	23,000,000 (C) b	23,000,000 (C) b		
				(state matching fund grant)	3,500,000 (D) o		20,000,000 (C) o				
4	CBS-6083	2	4	Waikapu/Wailuku Diversion Pump Station and Force Main		1,000,000 (D) c			9,000,000 (C) b		
4	CBS-6084	1	4	Waikapu/Wailuku Diversion Gravity Sewer		1,000,000 (D) c	1,000,000 (L) c		14,000,000 (C) b		

Wastewater Division 6 year CIP Plan

WASTEWATER RECLAMATION DIVISION PROPOSED SIX YEAR CIP PLAN COSTS (FY 2022)

Council Approved

Priority	CBS No.	AT	FT	PROJECT	FISCAL YEAR																
					2022	2023	2024	2025	2026	2027											
WEST MAUI					Subtotal	30,850,000	59%	15,400,000	23%	12,550,000	12%	12,000,000	18%	1,100,000	1%	22,000,000	56%				
2	CBS-1146	1	3	West Maui EPA Compliance Sewer Rehabilitation	2,000,000	(D/C)	c			2,000,000	(D/C)	c									
3	CBS-1167	1	3	Napili No. 1 Force Main Replacement	300,000	(D)	b			3,700,000	(C)	b									
3	CBS-1168	1	3	Napili No. 2 Force Main Replacement				1,000,000	(C)	c											
3	CBS-1162	1	3	Napili No. 5 and 6 Force Main Replacements																	
3	CBS-5522	1	3	Lahaina No. 3 Force Main Replacement (first segment)								300,000	(D)	c		3,000,000	(C)	s			
3	CBS-1177	2	3	Napili WWPS No. 1 Modifications (1985)	550,000	(D)	b			5,500,000	(C)	b									
3	CBS-1178	2	3	Napili WWPS No. 2 Modifications (1985)				4,000,000	(C)	b											
3	CBS-1179	2	3	Napili WWPS No. 3 Modifications (1985)	4,000,000	(C)	s														
3	CBS-5525	2	3	Lahaina WWPS No. 4 Modifications (2008)										100,000	(PER)	c	200,000	(D)	c		
3	CBS-5523	2	3	Lahaina WWPS No. 5 Modifications (2006)								200,000	(D)	c			2,000,000	(C)	s		
3	CBS-5524	2	3	Lahaina WWPS No. 6 Modifications (2006)								100,000	(D)	c			1,000,000	(C)	c		
2	CBS-1124	1	5	West Maui Recycled Water Expansion																	
				Force Main	7,000,000	(C)	s														
				Reservoir	6,000,000	(C)	b														
5	CBS-1968	1	5	Honoapiilani Highway Lateral Installation				800,000	(C)	c											
2	CBS-1952	1	5	Kaanapali Resort R-1 Water Distribution System Expansion				8,500,000	(C)	b											
2	CBS-1954	1	5	Honokowai R-1 Distribution System Expansion								400,000	(D)	c				4,300,000	(C)	b	
2	CBS-3576	3	5	Lahaina WWRF R-1 Process Expansion				10,500,000	(D/C)	b											
2	CBS-3201	1	5	Lahaina WWRF Onsite Recycled Water Storage				400,000	(D)	c			4,000,000	(C)	b						
4	CBS-6080	1	5	Lahaina Recycled Water Force Main Construction/Rehabilitation						850,000	(D)	c							11,500,000	(C)	b
4	CBS-6648	1	5	Lahaina Siphon and Ditch Distribution											1,000,000	(D)	c				
3	CBS-5548	3	3	Lahaina Emergency Generator Replacement	500,000	(D/C)	c														
2	CBS-3575	3	3	Lahaina WWRF Dewatering Upgrades				700,000	(D)	c			7,000,000	(C)	s						
1	CBS-3572	5	1	Lahaina WWRF Concrete Rehabilitation						500,000	(C)	c									
PAIA-HAIKU					Subtotal			3,600,000	5%			150,000	0%			1,500,000	4%				
3	CBS-4588	1	3	Sprecklesville Force Main Replacement (1983)				3,600,000	(C)	b											
3	CBS-3207	2	3	Paia WWPS Modifications								150,000	(D)	c		1,500,000	(C)	s			
MOLOKAI					Subtotal			200,000	0%	100,000	0%	1,900,000	3%	2,000,000	3%						
3	CBS-1153	1	3	Kaunakakai Effluent Force Main Replacement				200,000	(D)	c			1,900,000	(C)	s						
2	CBS-5037	1	3	Kualapuu Sewer System Rehabilitation						100,000	(D)	c			2,000,000	(C)	c				
LANAI					Subtotal			150,000	0%												
2	CBS-4591	5	4	Lanai WWRF Facility Plan (Capacity Expansion)				150,000	(PER)	c											
MAKAWAO-PUKALANI-KULA					Subtotal					250,000	0%										
5	CBS-5038	5	4	Makawao Master Sewer Plan						250,000	(S)	c									
HANA					Subtotal									200,000	0%	2,000,000	5%				
5	CBS-5039	5	4	Central Hana Sewer System										200,000	(S)	c	2,000,000	(D)	b		
COUNTYWIDE					Subtotal	5,500,000	11%	3,000,000	4%	3,000,000	3%	3,000,000	5%	7,000,000	9%	3,000,000	8%				
2	CBS-1132	3	3	Countywide EPA Compliance Projects	500,000	(D/C)	e	500,000	(D/C)	e	500,000	(D/C)	e	500,000	(D/C)	e	500,000	(D/C)	e		
2	CBS-1119	3	1	Countywide EPA Compliance WWRF Renovation Projects	2,500,000	(D/C)	c	1,500,000	(D/C)	c	1,500,000	(D/C)	c	1,500,000	(D/C)	c	1,500,000	(D/C)	c		
					1,500,000	(C)	c														
2	CBS-1128	3	3	Countywide Wastewater System Modifications	1,000,000	(D/C)	c	1,000,000	(D/C)	c	1,000,000	(D/C)	c	1,000,000	(D/C)	c	1,000,000	(D/C)	c		
3	CBS-6081	2	3	Countywide Pump Station Renovations (SCADA)										4,000,000	(D/C)	c					
TOTAL					\$	52,350,000		\$	68,050,000		\$	108,000,000		\$	65,050,000		\$	74,400,000		\$	39,200,000

Printed: 10/27/2021

LEGEND: Project Type: (S) - Study (PER) - Project Engineering Report (D) - Design (C) - Construction (L) - Land Acquisition/Entitlements AT - Asset Type
 Funding Type: s - SRF Loan b - Bond c - Cash o - Other (Grant, CoA Deposit etc.) g - General Fund FT - Funding Type

1. Does It Work? / 2. Is It Safe? 3. Is It Reliable? 4. Expansion of Services/Efficiency
 5. Reclaimed Water Facilities 6. General Plan Growth Improvements 7. Agency Requirement

Wastewater Division 6 year CIP Plan

Sewer Rate Increase 3% 0% 3% 3% 4% 6%

With Waikapu Facility: 3% 3% 5% 5% 5%

WASTEWATER RECLAMATION DIVISION PROPOSED SIX YEAR CIP PLAN COSTS (FY 2022)

Priority	CBS No.	AT	FT	PROJECT	FISCAL YEAR					
					2022	2023	2024	2025	2026	2027
Funding Type	s			SRF Loan	\$ 12,900,000	\$ 13,500,000	\$ 14,500,000	\$ 14,900,000	\$ 12,100,000	\$ 8,500,000
	b			Bond	\$ 20,450,000	\$ 43,900,000	\$ 58,200,000	\$ 37,000,000	\$ 49,000,000	\$ 17,800,000
	c			Cash	\$ 15,500,000	\$ 10,650,000	\$ 15,300,000	\$ 13,150,000	\$ 13,300,000	\$ 12,900,000
	g			General Fund	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	o			Other	\$ 3,500,000	\$ -	\$ 20,000,000	\$ -	\$ -	\$ -
				TOTAL	\$ 52,350,000	\$ 68,050,000	\$ 108,000,000	\$ 65,050,000	\$ 74,400,000	\$ 39,200,000
Project Type	1			Does It Work? Is It Safe?	\$ 2,500,000	\$ 1,500,000	\$ 2,000,000	\$ 2,000,000	\$ 1,500,000	\$ 1,500,000
	3			Is It Reliable?	\$ 17,600,000	\$ 20,800,000	\$ 33,400,000	\$ 19,350,000	\$ 23,000,000	\$ 13,400,000
	4			Expansion of Service	\$ 7,250,000	\$ 2,150,000	\$ 44,750,000	\$ 25,300,000	\$ 46,200,000	\$ 8,500,000
	5			Reclaimed Water Facilities	\$ 23,500,000	\$ 27,600,000	\$ 6,850,000	\$ 8,400,000	\$ 3,300,000	\$ 15,800,000
	6			General Plan Expansion Projects	\$ -	\$ 6,000,000	\$ 6,000,000	\$ 5,000,000	\$ 400,000	\$ -
	7			Agency Condition/Request/Requirement	\$ -	\$ 10,000,000	\$ 15,000,000	\$ 5,000,000	\$ -	\$ -
				TOTAL	\$ 50,850,000	\$ 68,050,000	\$ 108,000,000	\$ 65,050,000	\$ 74,400,000	\$ 39,200,000

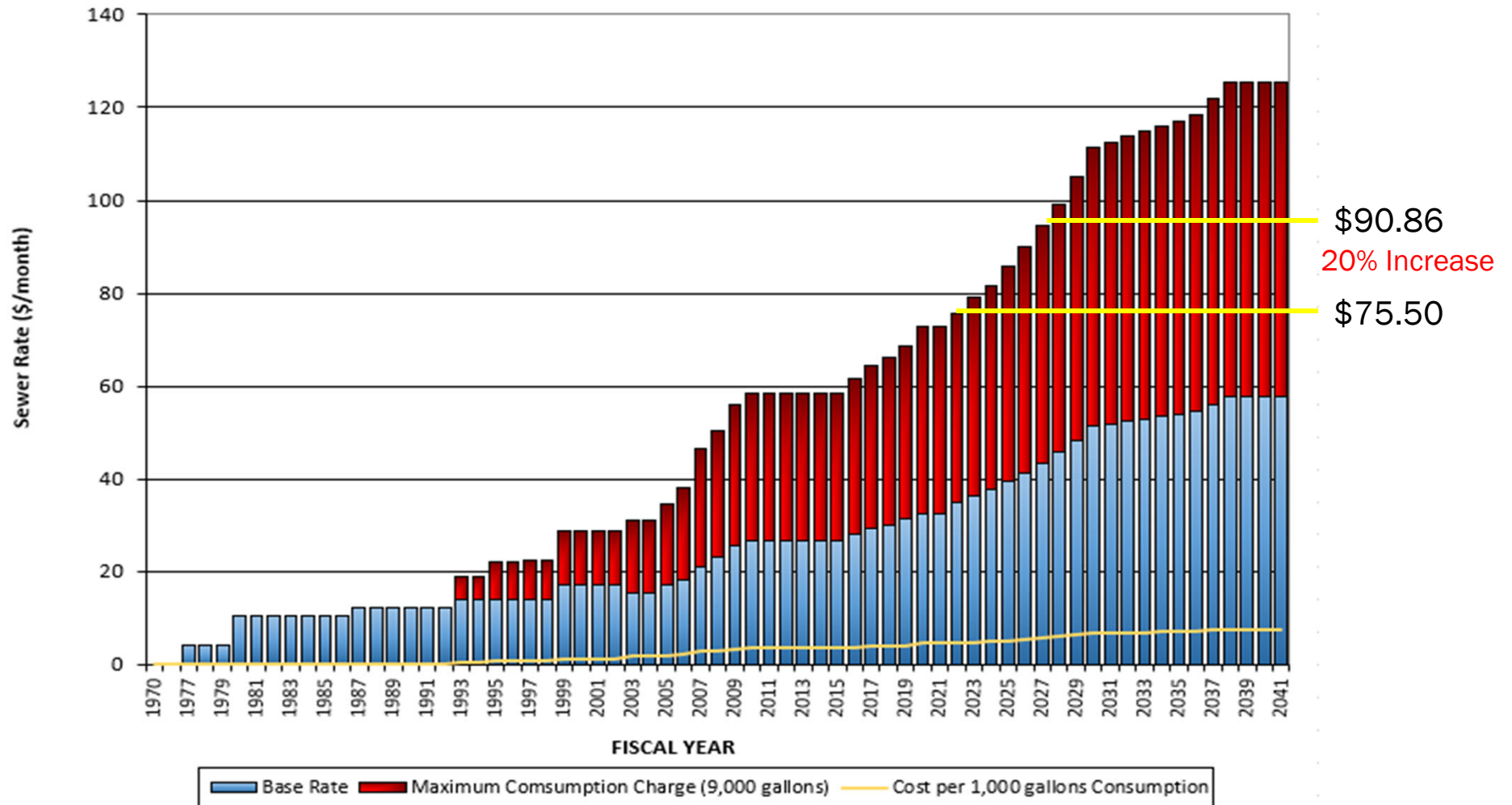
CIP Coordinator Priorities:

- 1 Priority 1: Replacement of existing infrastructure which is already unsafe or failing; absolutely required for compliance with federal or state law and/or legal settlements
- 2 Priority 2: New or upgraded infrastructure required for compliance with state or federal law and/or legal settlements
- 3 Priority 3: Replacement of existing infrastructure which is predicted to become unsafe or failing; reduces risk but not absolutely required for compliance with federal or state law and/or legal settlements
- 4 Priority 4: New or upgraded infrastructure which is a major improvement to quality of life, health, safety, efficiency or cost savings
- 5 Priority 5: New or upgraded infrastructure which is a minor improvement to quality of life, health, safety, efficiency or cost savings

Project:	Total Costs	Percentage
• Must Do Projects	\$168,550,000	42%
• Expansion of Services	\$134,150,000	33%
• Expansion of Reuse	\$85,450,000	21%
• SLR Projects	\$17,400,000	4%
Total	\$405,550,000	100%

Projected Increase to Sewer Rates

**HISTORY OF MAUI SEWER RATES
(Maximum Billing Single-Family Residence)**



Infrastructure and Transportation Committee
11-01-2021