

## IT Committee

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**From:** Eric Nakagawa <Eric.Nakagawa@co.maui.hi.us>  
**Sent:** Thursday, July 22, 2021 12:01 PM  
**To:** IT Committee  
**Subject:** Presentation from DEM for IT-36  
**Attachments:** 2021.07.22 Kihei Recycled Water Update.pdf

Aloha IT Committee Chair and Members,

Attached is a presentation for IT-36 for your use and information. If you have any questions or concerns, please let me know.

Thanks,  
Eric Nakagawa, P.E.  
Director

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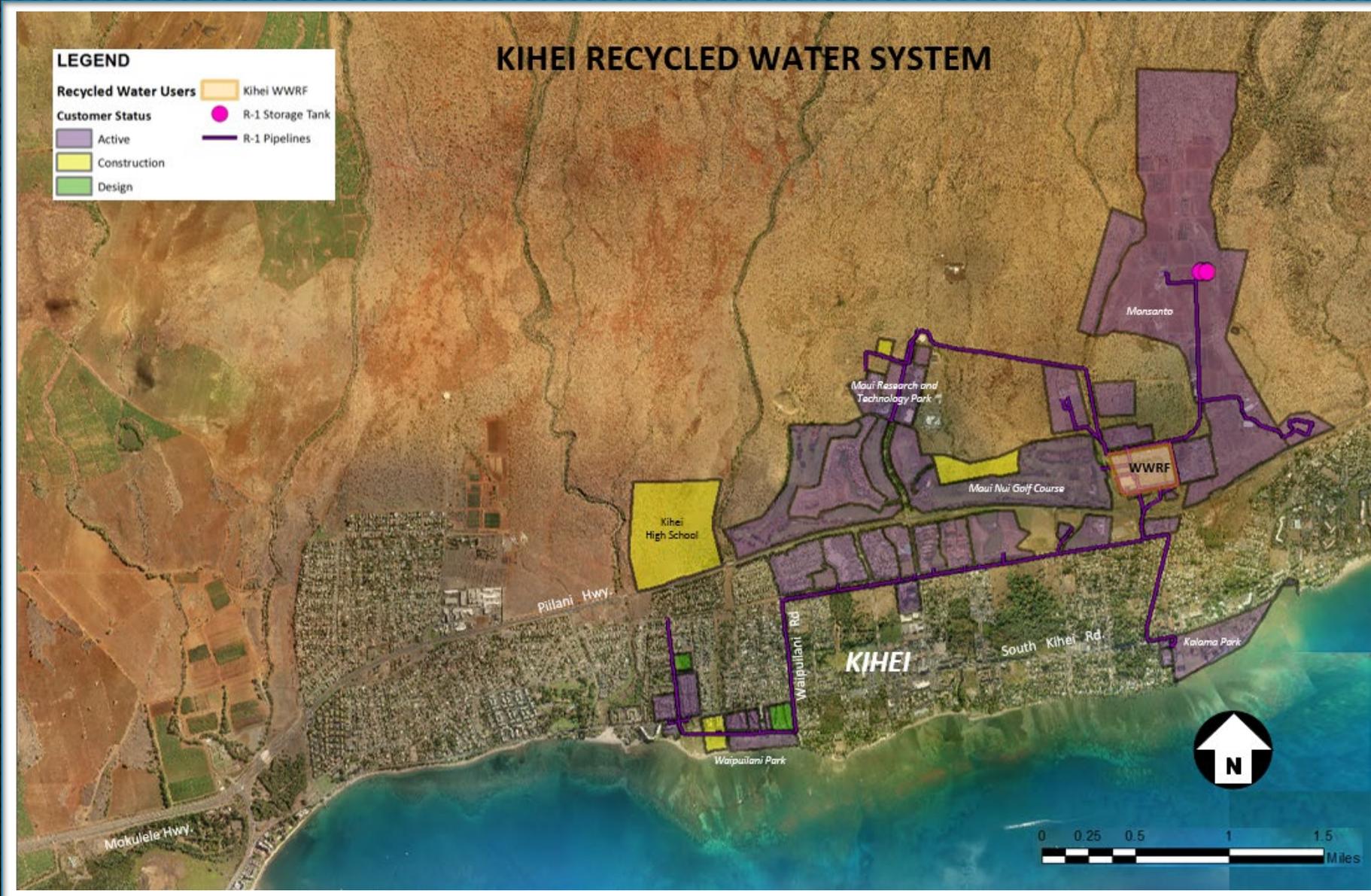
**COUNTY OF MAUI**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**WASTEWATER RECLAMATION DIVISION**

**KIHEI RECYCLED WATER UPDATE**

**INFRASTRUCTURE AND TRANSPORTATION COMMITTEE**

July 22, 2021

# SOUTH MAUI CURRENT REUSE



**KIHEI WWRF:**

**Average Daily  
Plant Flow**

**3.7 mgd**

**Average Daily  
Reuse**

**1.8 mgd**

**50%**

# KIHEI RECYCLED WATER SYSTEM FUTURE

**LEGEND**

**Recycled Water Users**

- Kihei WWRF

**Customer Status**

- Active
- Construction
- Design
- Future
- Possible Future

**Infrastructure**

- R-1 Storage Tank
- R-1 Pipelines
- Future R-1 Pipelines
- Future Land Application

**North Kihei System Expansion**  
Ph 1 FY2021 (\$1M)  
remainder 2025 (\$4M)

**Effluent Pump Station Upgrade**  
FY2021 (\$2.5M)

**New 1 MG Tank**  
Recently completed (\$6.3M)

**North Kihei Bayer Expansion**  
(with Bayer)  
2026 (\$9M)

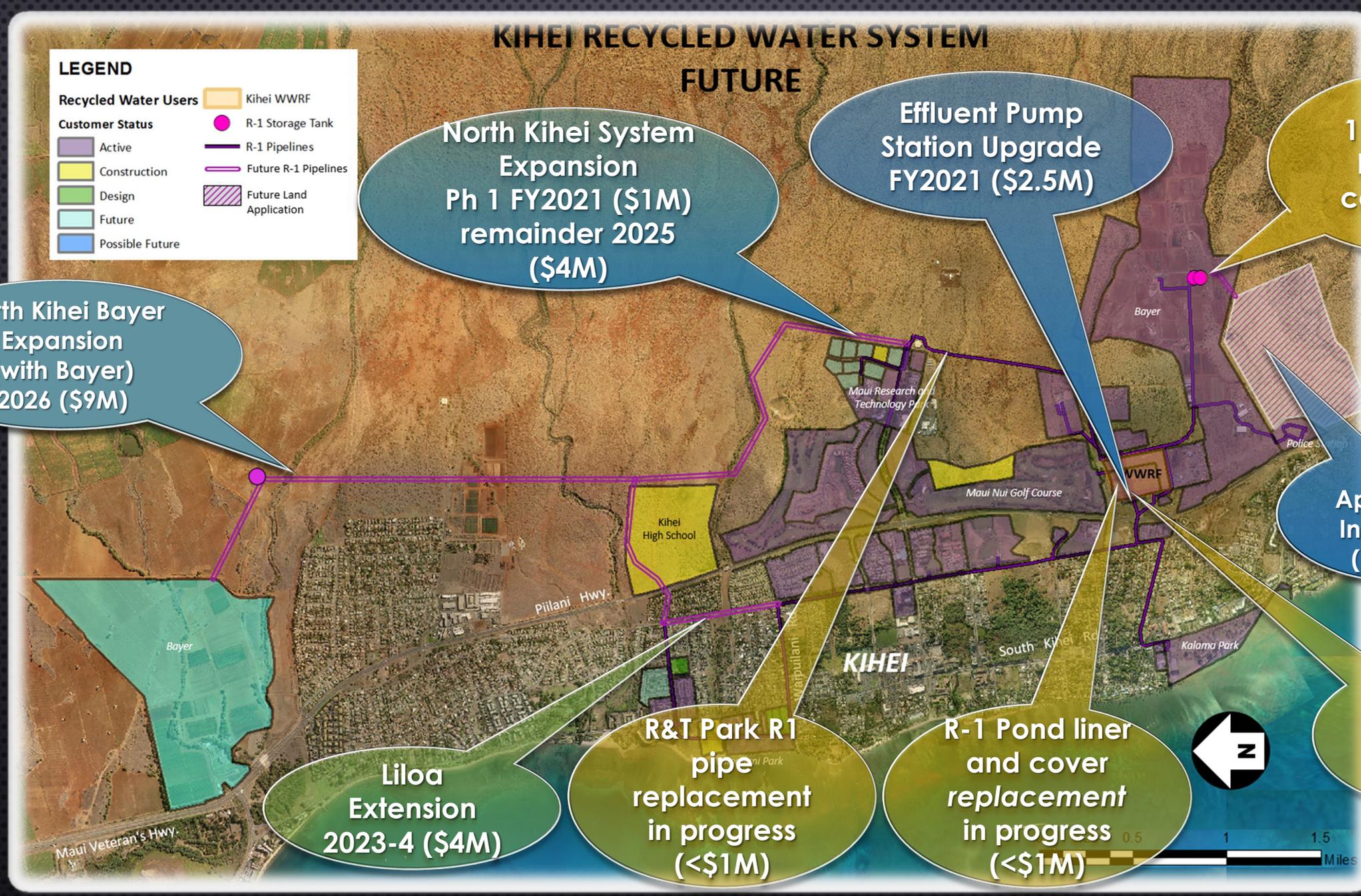
**Land Application**  
In progress (\$2-20M)

**Liloa Extension**  
2023-4 (\$4M)

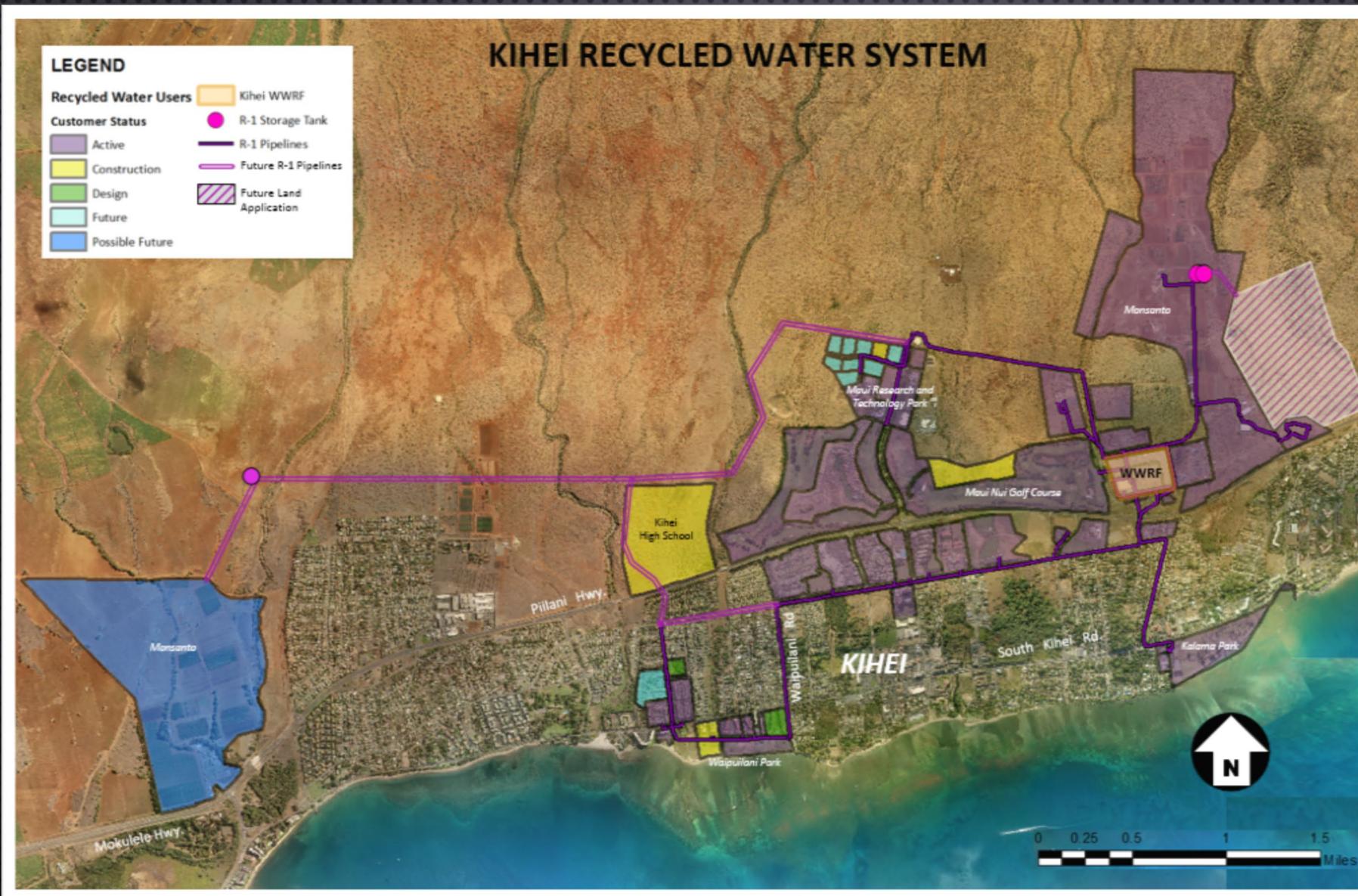
**R&T Park R1 pipe replacement**  
in progress (<\$1M)

**R-1 Pond liner and cover replacement**  
in progress (<\$1M)

**UV Upgrade**  
in progress (\$1M)



# SOUTH MAUI REUSE EXPANSION



KIHEI WWRF:

Average Daily  
Plant Flow

3.9 mgd

Average Daily  
Reuse

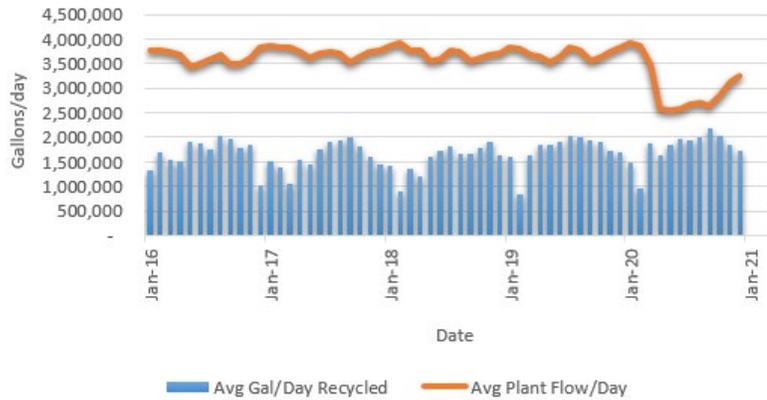
2.6 mgd

63%

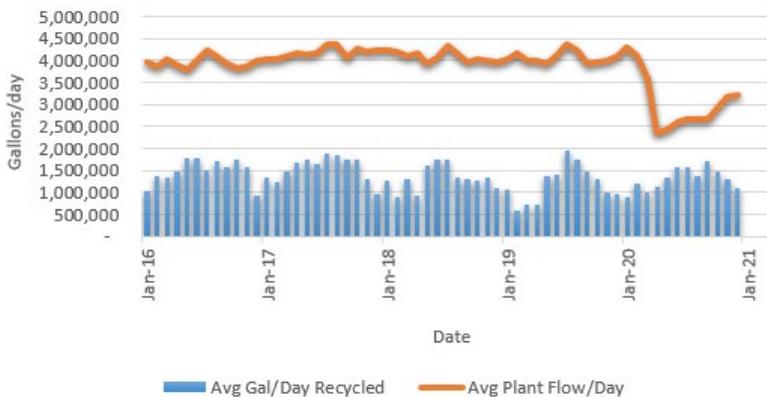
# REUSE per Month vs. Plant Flow

# REUSE Volumes and Percentages

Kihei WWRF Monthly Average Reuse per Day



Lahaina WWRF Monthly Average Reuse per Day

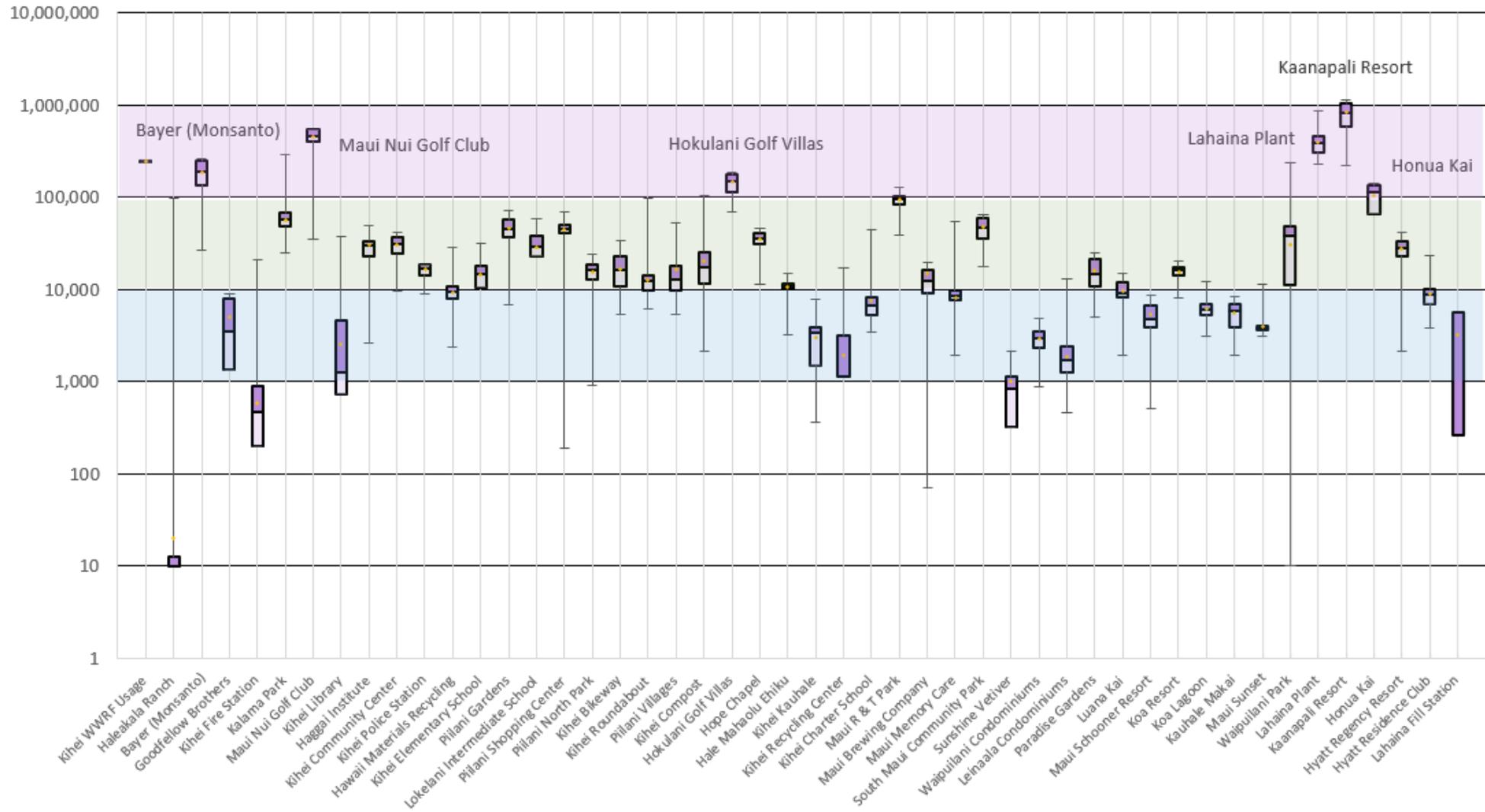


WWRF	Description	2016	2017	2018	2019	2020
Lahaina	TOTAL (Gallons Reused)	543,662,000	565,487,900	484,119,469	437,344,955	477,511,700
	Average (Gal/Day Reused)	1,485,415	1,549,282	1,326,355	1,198,205	1,304,677
	Average (Plant Flow/Day)	3,957,407	4,173,271	4,094,596	4,067,600	3,056,098
	% Effluent Reused vs Flow Proc	37.54%	37.12%	32.39%	29.46%	42.69%
Kihei	TOTAL (Gallons Reused)	617,789,610	590,083,223	569,174,435	638,887,885	655,505,693
	Average (Gal/Day Reused)	1,687,950	1,616,666	1,559,382	1,750,378	1,790,999
	Average (Plant Flow/Day)	3,634,434	3,728,786	3,707,022	3,704,952	3,012,967
	% Effluent Reused vs Flow Proc	46.44%	43.36%	42.07%	47.24%	53.21%
Kahului	TOTAL (Gallons Reused)	155,671,600	113,113,110	61,936,810	102,350,810	189,724,050
	Average (Gal/Day Reused)	464,691	309,899	169,690	280,413	518,372
	Average (Plant Flow/Day)	5,429,997	5,371,070	5,597,160	5,641,411	5,572,537
	% Effluent Reused vs Flow Proc	8.56%	5.77%	3.03%	5%	9.30%
Molokai	TOTAL (Gallons Reused)	2,160,000	2,160,000	-	-	-
	Average (Gal/Day Reused)	5,902	5,918	-	-	-
	Average (Plant Flow/Day)	276,450	287,566	277,330	273,808	280,920
	% Effluent Reused vs Flow Proc	2.13%	2.06%	0%	0%	0%
Lanai	TOTAL (Gallons Reused)	118,536,000	86,078,750	11,831,100	12,410,433	16,991,829
	Average (Gal/Day Reused)	323,022	235,832	32,414	34,001	46,426
	Average (Plant Flow/Day)	323,022	325,982	324,140	316,025	314,289
	% Effluent Reused vs Flow Proc	100.00%	72.35%	10.00%	10.76%	14.77%
OVERALL	TOTAL (Gallons Reused)	1,437,819,210	1,356,922,983	1,127,061,814	1,190,994,083	1,339,733,272
	Average (Gal/Day Reused)	3,928,468	3,717,597	3,087,841	3,262,997	3,660,473
	Average (Plant Flow/Day)	13,622,158	13,886,676	14,000,248	14,003,796	12,236,811
	TOTAL PLANT FLOW/YEAR	4,972,087,492	5,068,636,620	5,110,090,400	5,125,389,196	4,466,436,089
	% Effluent Reused vs Flow Proc	28.84%	26.77%	22.06%	23.30%	29.9%

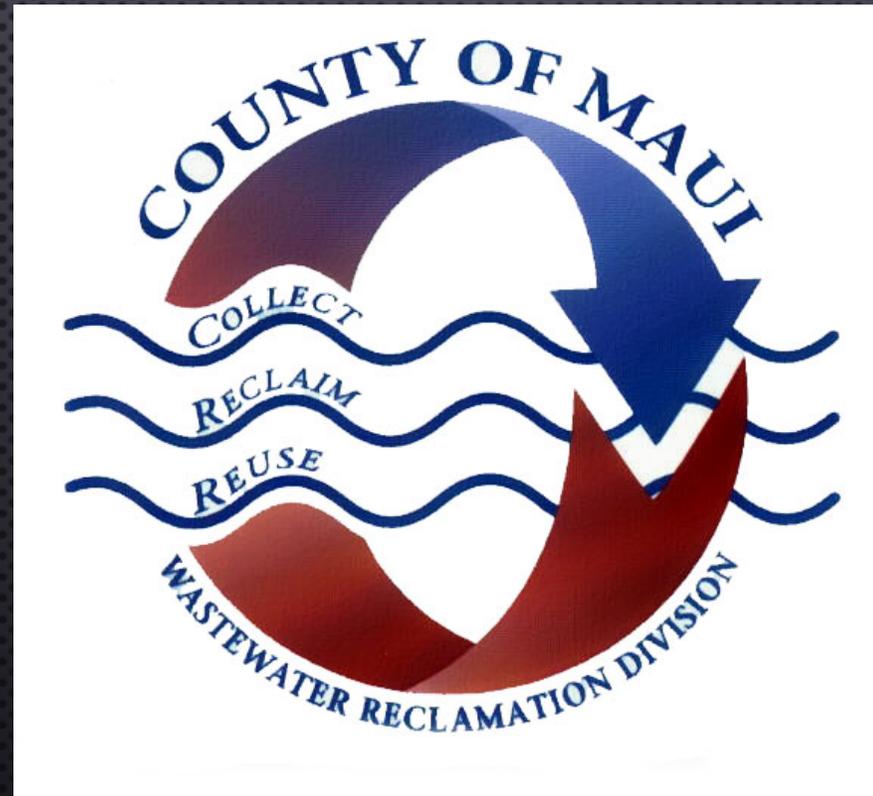
# Maui R-1 Water Usage (gallons/day)

## Jan 2016 - Dec 2020

Bottom    2Q Box    3Q Box    • Mean



MAHALO

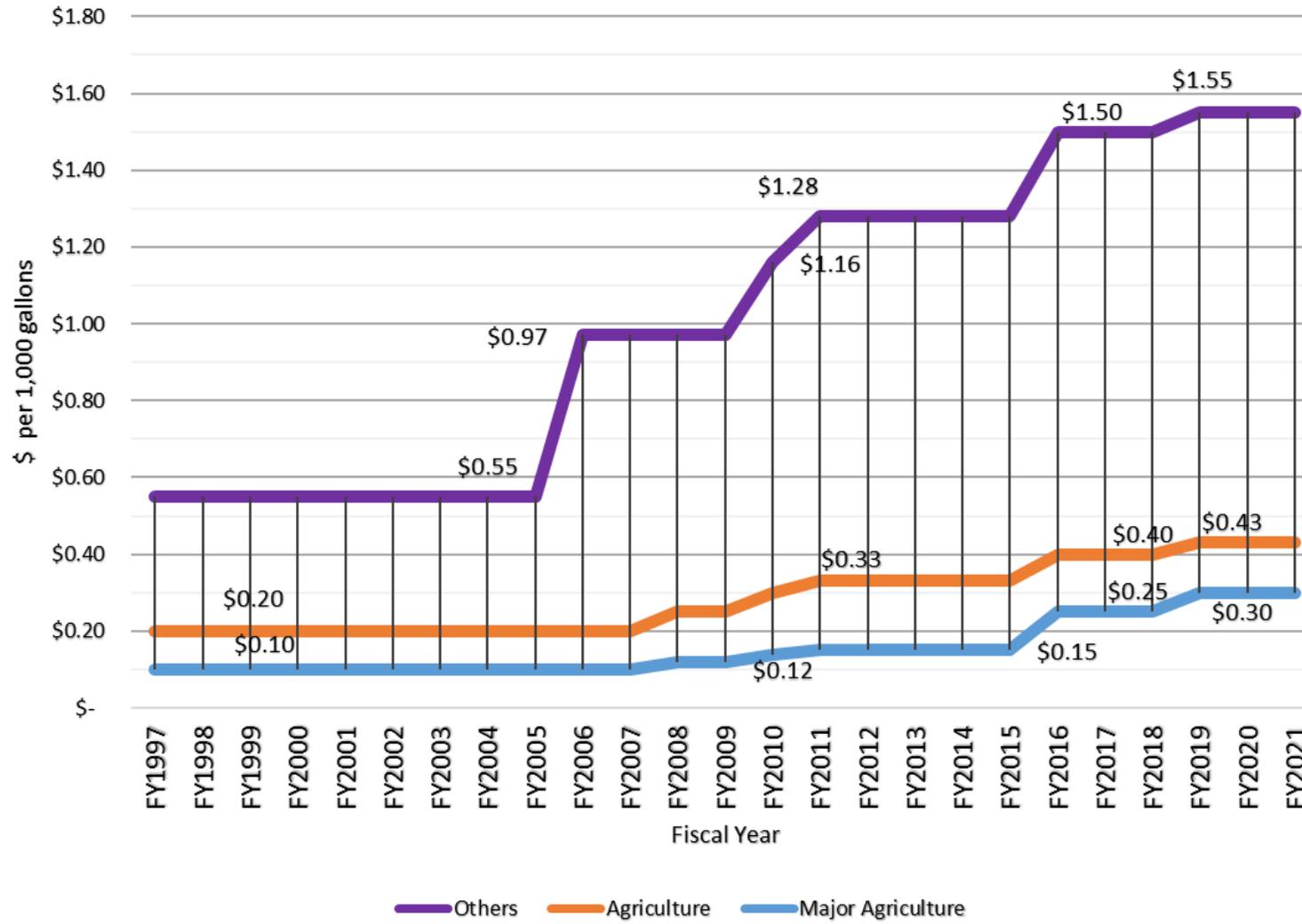




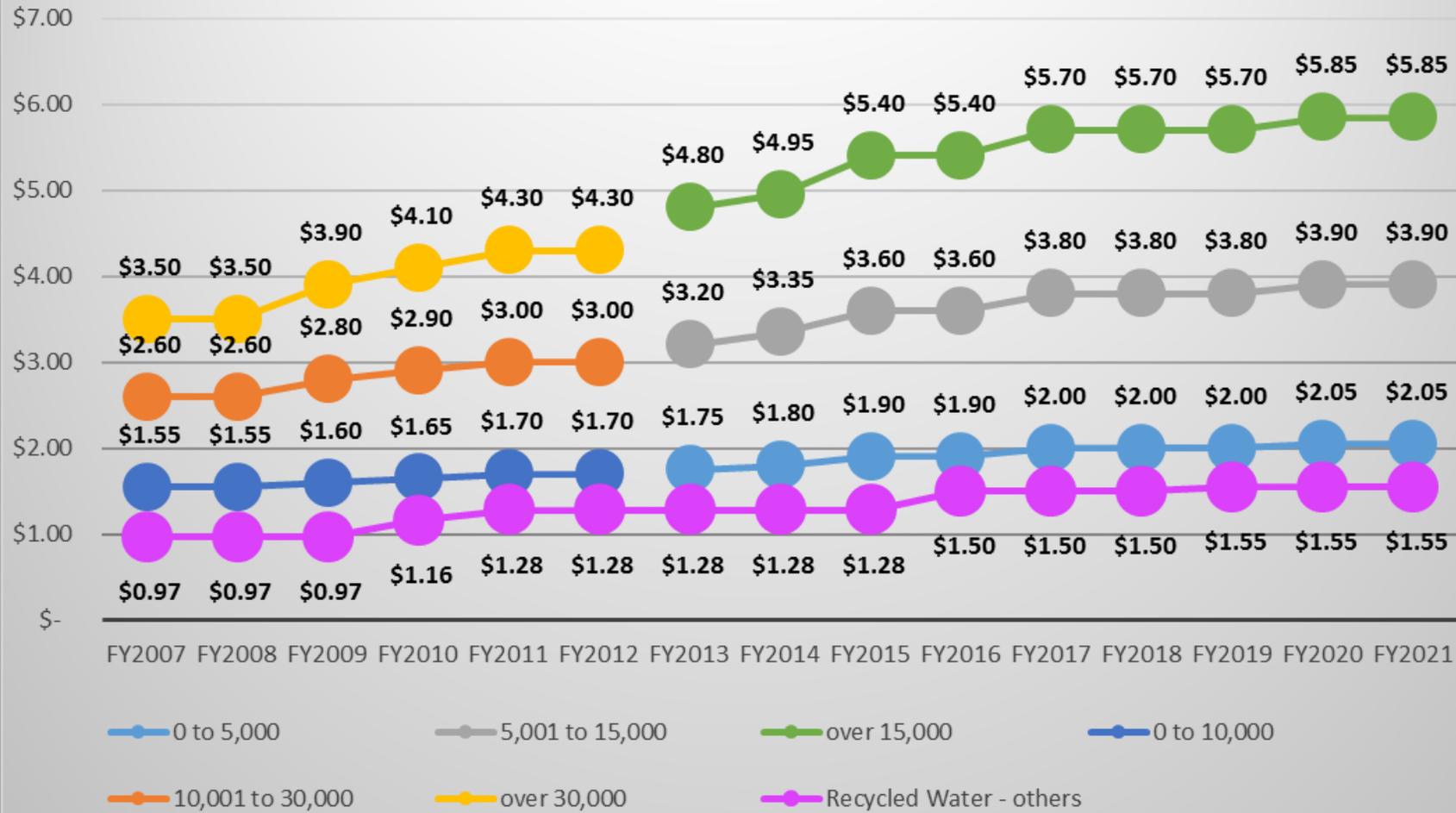
# MAUI'S EXISTING REUSE MANDATES

- **REDUCE/MINIMIZE INJECTION WELL USE**
- **MAUI COUNTY CODE**
- **20.30.050 - APPLICATION FOR RECLAIMED WATER SERVICE; MANDATORY SERVICE**
  - B. WHERE THERE EXISTS AVAILABLE RECLAIMED WATER SERVICE TO IMPROVED COMMERCIAL PROPERTY, ANY EXISTING IRRIGATION SYSTEM SHALL BE CONNECTED TO THE RECLAIMED WATER SYSTEM WITHIN ONE YEAR OF SERVICE AVAILABILITY IN ACCORDANCE WITH THE PROVISIONS OF THIS CHAPTER AND ANY RULES RELATING THERETO.**

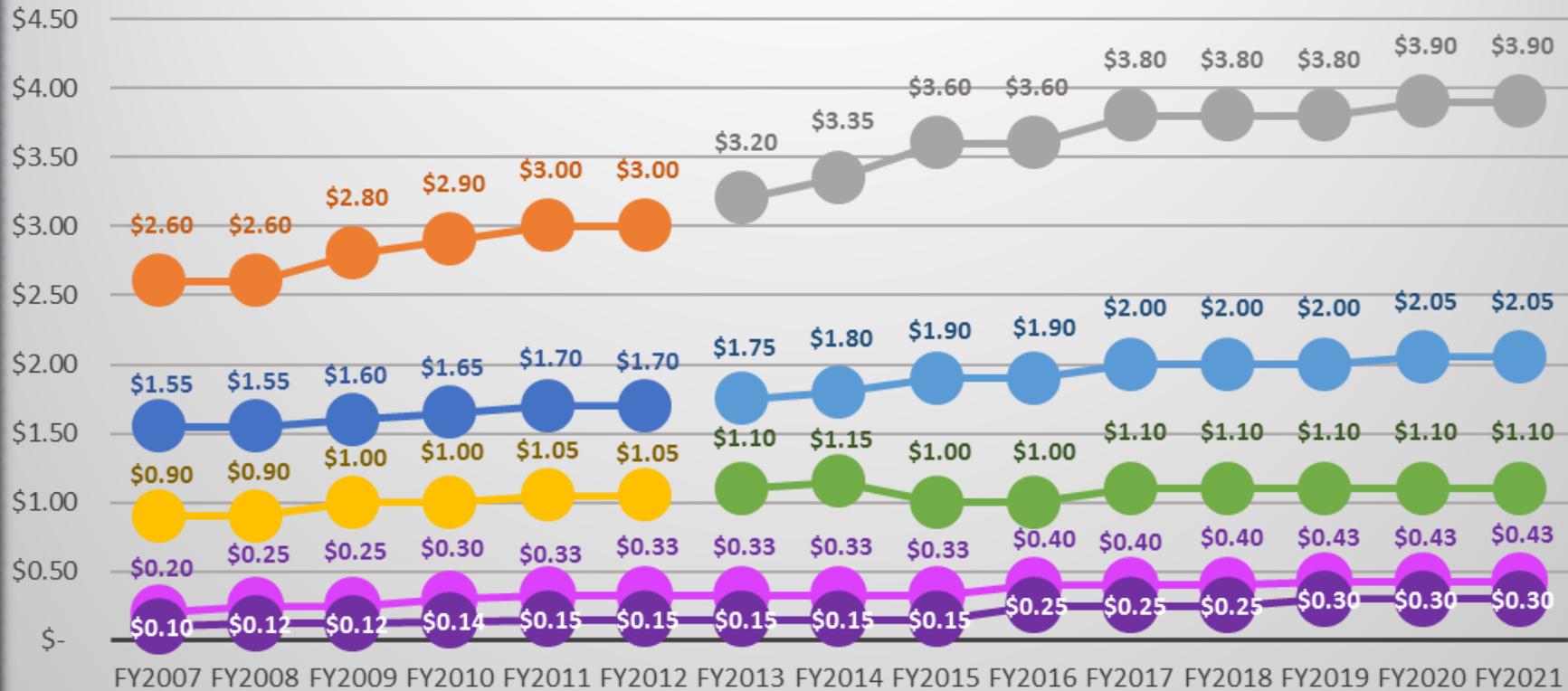
# RECYCLED WATER RATES



## Water Rates (DWS/WWRD) - Commercial/Others (\$/1,000 gallons)



# Agricultural Water Rates - Maui County (\$/1,000 gallons)



- 0 - 5,000
- 0 to 10,000
- 10,001 to 30,000
- 5,001-15,000
- Over 15,000
- Over 30,000
- Recycled Water - Ag rate
- Recycled Water - Major Ag rate