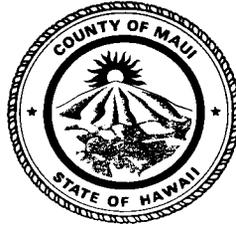


ALAN M. ARAKAWA
Mayor
STEWART STANT
Director
MICHAEL M. MIYAMOTO
Deputy Director



MICHAEL P. RATTE
Solid Waste Division
ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

**COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT**
2050 MAIN STREET, SUITE 2B
WAILUKU, MAUI, HAWAII 96793

April 6, 2018

OFFICE OF THE
COUNTY CLERK

2018 APR 10 AM 9:04

RECEIVED

Mr. Sananda Baz
Budget Director, County of Maui
200 South High Street
Wailuku, Hawaii 96793

Honorable Alan M. Arakawa
Mayor, County of Maui
200 South High Street
Wailuku, Hawaii 96793

A handwritten signature in black ink, appearing to read "Alan M. Arakawa", with the date "4/9/18" written to the right of the signature.

For Transmittal to:

Honorable Riki Hokama
Chair, Budget and Finance Committee
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

Dear Chair Hokama:

SUBJECT: FISCAL YEAR ("FY") 2019 BUDGET (EM-3) (BF-1)

The County is in receipt of the above Budget and Finance (BF) Committee requested information dated April 3, 2018. Your request and the corresponding answer is provided below by the Department of Environmental Management (DEM).

1. *Provide a copy of the Department's replacement vehicle policy and schedule.*
 - a. *Provide a copy of the Department's replacement policy and schedule for refuse trucks*

Please see attached Solid Waste Division equipment replacement procedure – "Asset Health Check Process" & "Solid Waste Division - Refuse Truck Replacement Schedule".

2. *Provide a copy of the Department's replacement equipment policy and schedule.*

The Wastewater Reclamation Division's equipment replacement policy is to utilize an asset management program which allows us to evaluate all of our equipment every year and determine the remaining useful life of each equipment and budget them accordingly. (See attached 20 year plan and list of assets)

Please see attached Solid Waste Division equipment replacement procedure – “Asset Health Check Process” & “Solid Waste Division – Asset Replacement Schedule”.

3. *What is the actual cost to provide residential refuse collection, per account? Provide a breakdown of the cost and the amount the service is subsidized.*

The estimated cost to provide residential refuse collection in FY19 is \$42/month/account, which includes the cost to collect and haul waste to the landfill and process the waste at the landfill. This cost takes into account the “A”, “B”, “C” budgets; fringe and overhead; and debt services.

The proposed Rate & Fee is \$32/month/acct. for FY 19, so this equates to a \$10 shortfall for refuse accounts only. (Per Budget office, the overall SWD budget and after incorporating all revenue streams allows for a fully funded Division).

4. *Provide the number of residential refuse accounts on Maui, Molokai, and Lanai for FY 2016 through FY 2018 to date.*

RESIDENTIAL REFUSE ACCOUNTS FY2016 THROUGH FY2018 (3RD QTR)			
LOCATION	FY2016	FY2017	FY2018 (Through 3rd Qtr)
MAUI	25,271	25,444	25,420
MOLOKAI	514	514	478
LANAI	729	763	785
TOTAL	26,514	26,721	26,683

5. *What is the actual cost to provide landfill service at each landfill, per ton? Provide a breakdown of the cost and the amount the service is subsidized.*

Below is a cost per ton to process waste at the each of the County landfills. The weighted average to process trash is estimated at \$88/ton for FY19. This cost takes into account the “A”, “B”, “C” budgets; fringe and overhead; and debt services. The overall proposed Rate & Fees requested for FY 19 cover all costs overall per Budget office. After incorporating all commercial account revenue, minus waivers to non-profits, free landfilling services allowed to other County Departments, and free residential drop offs allows for a fully funded, non-subsidized Division.

COST PER TON TO PROCESS WASTE AT EACH COUNTY LANDFILL			
LANDFILL	FY2017	FY2018	FY2019
Central Maui Landfill	\$58	\$59	\$61
Hana Landfill	\$1,862	\$1,909	\$1,957
Molokai Landfill	\$491	\$503	\$515
Lanai Landfill	\$247	\$253	\$260
Countywide weighted average:			\$88

6. *Provide the actual tonnage collected at each landfill for FY 2016 through FY 2018 to date.*

LANDFILLED TONNAGES FY2016 THROUGH FY2018 (3RD QTR)			
LANDFILL	FY2016	FY2017	FY2018 (3 Qtrs Only)
Central Maui Landfill	172,318	196,281	152,831
Hana Landfill	958	1,065	807
Molokai Landfill	5,714	5,963	4,385
Lanai Landfill	4,892	4,745	3,539

7. *The Department is requesting an expansion position for a Geographic Information Technician I in the Wastewater Administration Program (index code 919005A, page 5-14 of the Budget Details), and related expansion costs (index code 919005B, sub-object 6060, page 5-16 of the Budget*

Details; index code 919005B, sub-object 6244, page 5-17; and index code 919005C, sub-object 7031, page 5-21).

a. How does the Department utilize geographic information systems and how would this position expand GIS capabilities?

Currently our geographic information system is used for the following:

- i. Maps and exhibits for meetings, presentations, project analysis, consultants, engineers, division staff, administration, educational appearances, and the general public.
- ii. Line Inventory (sewer and reclaimed water)
- iii. Asset Inventory location/data management
- iv. Work Order spatial orientation and prioritization
- v. Hydraulic modeling
- vi. Public information request searches (500+ / year)
- vii. One Call Center filtering and information dissemination (800+ / year)
- viii. Website dissemination of system layout and asset information (<https://mauicounty.maps.arcgis.com/home/index.html>)
- ix. Spatial analysis (spills, aging, materials, flows etc.)
- x. As-built plan inventory/index

The second position would be utilized to expand usage by:

- i. Updating/maintaining current asset feature classes (layers for sewer, manholes, recycled water, force mains, valves, etc.) with new information from field work, as-built plans and file information. (excessive backlog of information currently exists)
- ii. Create an index and link to electronic records maintained by the division
- iii. Create and maintain new feature classes for easements, in-plant piping, pump station piping/valves, cleanouts, sewer laterals, sewer lots, CCTV index, creation of a recycled water network model, etc.
- iv. Acquiring more field coordinates via GPS equipment (force main, manholes, valves, cleanouts, meters etc.) to aid in utility locations for construction.

It is important to note that up to date information is critical as it:

- o Lowers costs when division information is consolidated and easy to find and share. (GIS functions as an interactive index for as-built information)
- o Assists us to manage our assets efficiently (maintenance, modeling etc.)

- Allows for faster response time for customers (general public, contractors, engineers etc.) making us more responsive and efficient.
- Permits field crews to quickly assess emergency situations and effects
- Assures that modeling, work orders, and mapping functions reflect the current system so fewer errors are made by our staff.
- Is utilized in nearly all studies, design and construction projects and presentations for base maps, route mapping or basis of flows.
- Is served to the public through web portals developed by the MAPPS project.

b. How will the duties of this position differ from the duties of the GIS Analyst III?

The GIS Analyst III is currently doing the work of both positions with assistance from other staff engineers who are working on an overtime basis. The Analyst III would be the primary position for developing/maintaining network models, completing asset analysis projects, production of complex studies and mapping products, creation or obtaining of new feature classes (data layers), creation of job workflows and best practices, responsible for quality control (QC) of all data, maintain web maps and files, organization of electronic links and document storage, lead for One Call Center and information requests, representative for the department on the County GIS governance board.

The Geographic Information Technician I would handle the bulk of One Call Center and information requests, update and correct GIS feature classes as new information becomes available, assist in creation of new feature classes, scanning, electronic storage and linking of paper documents to features, production of simple studies and mapping products, and dissemination of data as required.

8. Explain the proposed adjustments to overhead charges/administrative costs, and reimbursements to the General Fund for the Wastewater Administration program (index code 919017B, sub-object 6350, and index code 919045B, sub-object 7510, page 5-19 of the Budget Details) and Solid Waste Administration program (index code 919507B, sub-object 6350, and 919539B, sub-object 7510, page 5-62 of the Budget Details).

This is a Budget Director question but I believe the answer is this cost is based on the recent cost allocation report finance did to appropriate funds for supporting Departments such as Finance, Corporation Counsel, Budget, Mayor's office, etc.

9. *Explain increases in the Wastewater Operations program's costs for the following:*

a. *Electrical parts and supplies (index code 919044B, sub-object 6016, page 5-50 of the Budget Details) from Fiscal Year 2016 to Fiscal Year 2017.*

Over the past 5 years, the average cost to replace electrical equipment has been approximately \$2.2 million. Therefore, every year we try to increase this line item until we meet this average. This line item is used to purchase and replace electrical equipment, i.e. Variable Frequency Drives (VFD), Motor Control Centers (MCC), Switch Gears, Electrical breakers, Remote Terminal Units (RTU), etc., that has failed or are at its end useful life.

b. *Repairs and maintenance supplies (index code 919044B, sub-object 6031, page 5-50 of the Budget Details) from Fiscal Year 2017 to Fiscal Year 2018 adopted.*

Over the past 5 years, the average cost to replace mechanical equipment has been approximately \$1.7 million. Therefore, every year we try to increase this line item until we meet this average. This line item is used to purchase and replace mechanical equipment, i.e. submersible pumps, centrifuges, gate valves, mechanical fittings, etc., that has failed or are at its end useful life.

10. *Provide an explanation for requests relating to iNovah cashiering (index code 919500B sub-object 6060, page 5-60 of the Budget Details; and index code 919521B, sub-objects 6060, 6112, and 6132, pages 5-84 and 5-85 of the Budget Details). Explain whether these are one-time costs, provide a breakdown of the costs, and provide a timeline for implementation.*

The Department of Finance, in conjunction with the Department of Management and ITS, established iNOVAH as the standard cashiering platform for all County of Maui departments that accept payments. In order for the Solid Waste Division to comply with this directive, an interface between iNOVAH and our back of house customer management system (NorthStar) needs to be created. A cost estimate is as follows:

919500B-6060 Small Equipment \$3,600 – one time

- Purchase of receipt printers, scanners, and cash drawers needed for the iNOVAH cashiering system

919521B-6060 Small Equipment \$3,000 – one time

- Purchase of receipt printers, scanners, and cash drawers needed for the iNOVAH cashiering system

919521B-6112 Contractual Service \$5,000 – one time

- Funding for workstation modifications

919521B-6132 Professional Services \$112,000 – one time and annual

- One time costs – \$102,000
 - \$42,000 for NorthStar interface software license and professional services to develop NorthStar's portion of the interface
 - \$60,000 for iNOVAH interface development and professional services to develop iNOVAH's portion of the interface
- Annual costs - \$10,000
 - \$4,500 for NorthStar maintenance and support for the interface
 - \$5,500 for iNOVAH maintenance and support for the interface

The timeline for the interface to be completed is June 2019.

11. *Relating to the transfer of grants for Agricultural Promotion; Water and Environmental Resource and Protection and Conservation; and Renewable Energy and Energy Efficiency, from the Office of the Mayor's Economic Development Program (beginning on Budget Details page 11-22) to the Environmental Protection and Sustainability Program (index code 919292B, sub-object 6317, page 5-9 of the Budget Details).*

a. What is the rationale for the proposed transfer?

In the Charter of the County of Maui, Chapter 15, Section 8-15.3, item 4 refers to "Guide efforts to optimize opportunities for environmental, natural resource protection, sustainability, conservation, and restoration." It is with this in mind that we proposed the creation of the three positions in our Environmental Protection and Sustainability Division. As the three positions are currently appointed positions in the Office of Economic Development, we were looking to create permanent positions for long term planning for those areas. Appointees are limited to the length of their appointments.

b. What is the rationale for budgeting the funds as a lump-sum appropriation, rather than line-item grants?

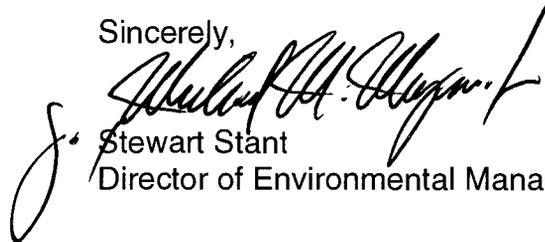
The proposal came at a very late stage of preparing the Mayor's proposed budget. As such all the grants related to the three areas were lumped together to make it into the Mayor's proposed budget. We are not opposed to returning to line-item grants.

12. *Explain the \$345,000 increase in contract costs related to the Environmental Protection and Sustainability Program's recycling program (index code 919730B, sub-object 6112, page 5-107 of the Budget Details).*

The explanation of the expansion request identifies three contracts that are currently in the Solid Waste Program that are being transferred to the Environmental Protection and Sustainability Program, Recycling Program. The Solid Waste Division operates the Olowalu Transfer Station which collects trash, recyclables and greenwaste and the transfer of greenwaste from Hana landfill to the Central Maui Landfill. Each item has a specified costs so the proposal is to transfer those costs that are related to recycling to the Environmental Protection and Sustainability Fund.

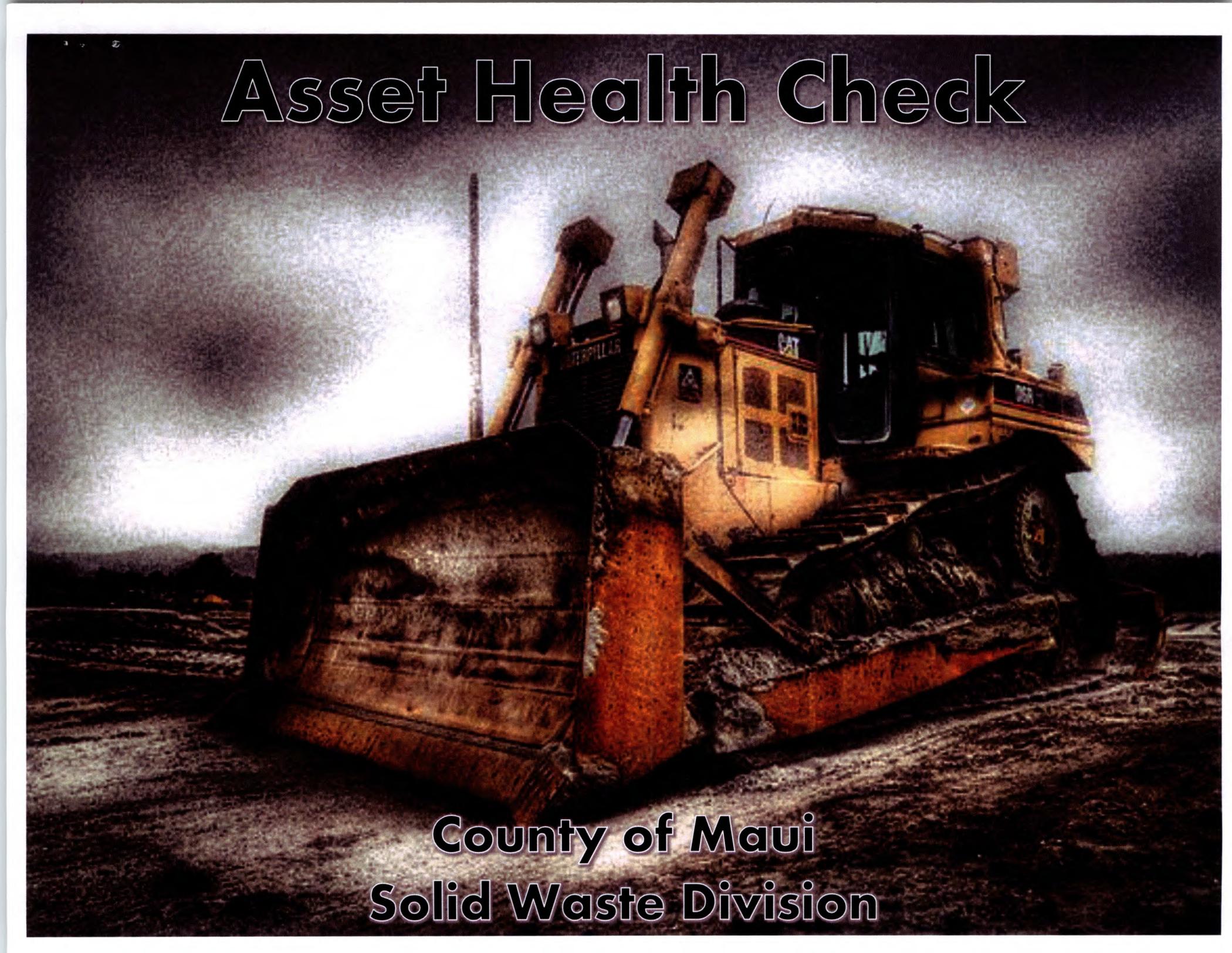
Should you have any questions, please contact me at ext. 8230.

Sincerely,

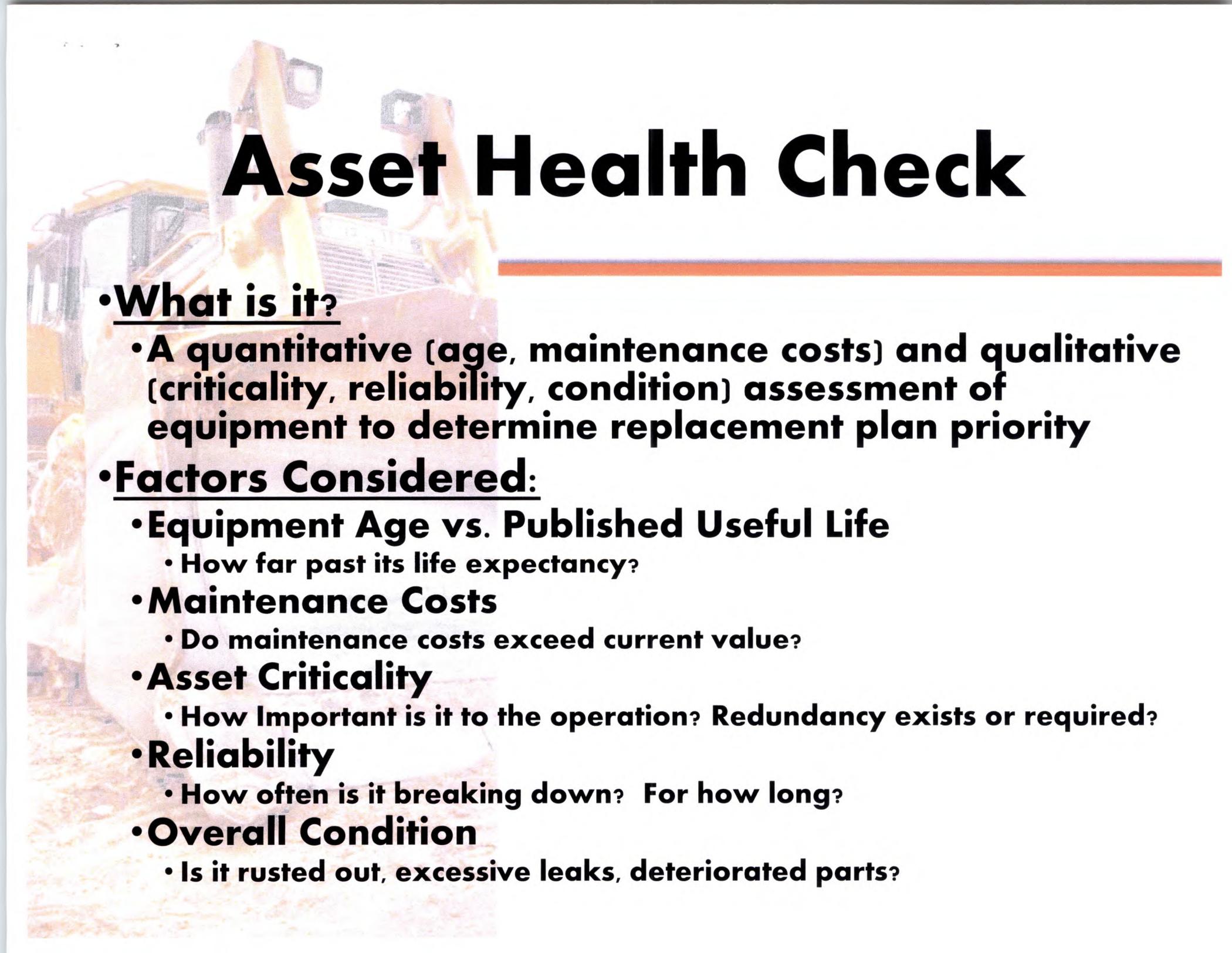


Stewart Stant
Director of Environmental Management

Asset Health Check



**County of Maui
Solid Waste Division**



Asset Health Check

• What is it?

- A quantitative (age, maintenance costs) and qualitative (criticality, reliability, condition) assessment of equipment to determine replacement plan priority

• Factors Considered:

• Equipment Age vs. Published Useful Life

- How far past its life expectancy?

• Maintenance Costs

- Do maintenance costs exceed current value?

• Asset Criticality

- How Important is it to the operation? Redundancy exists or required?

• Reliability

- How often is it breaking down? For how long?

• Overall Condition

- Is it rusted out, excessive leaks, deteriorated parts?

Asset Health Check Process

- **Data Needed (*Maintenance Connection*)**
 - **Current age, Current Maintenance Costs Life to Date, Number of Breakdown Events**
- **Alignment on Qualitative Definitions**

Assessment Area	Rank	Definition
Maintenance Costs	1	Maintenance Cost Less than Current Book Value
	2	Maintenance Cost Equal or Close to Current Book Value
	3	Maintenance Cost Greater than Current Book Value
Asset Criticality	1	Asset redundancy exists, not critical to compliance/operation
	2	Asset redundancy exists, critical to compliance/operation
	3	Asset redundancy does not exist, critical to compliance/operation
Asset Age	1	Asset age is below expected equipment life
	2	Asset age is between low and high end of expected equipment life
	3	Asset age is greater than expected equipment life
Asset Reliability	1	Asset is down for typically PMs, less than 6 times a year unplanned
	2	Asset is down for PMs, every month unplanned downtime
	3	Asset is down for PMs, several times a month unplanned downtime
Asset Condition	1	Asset shows minimal or no signs of damage or deterioration
	2	Asset shows minor damage or deterioration
	3	Asset shows major damage or deterioration

Asset Health Check Process

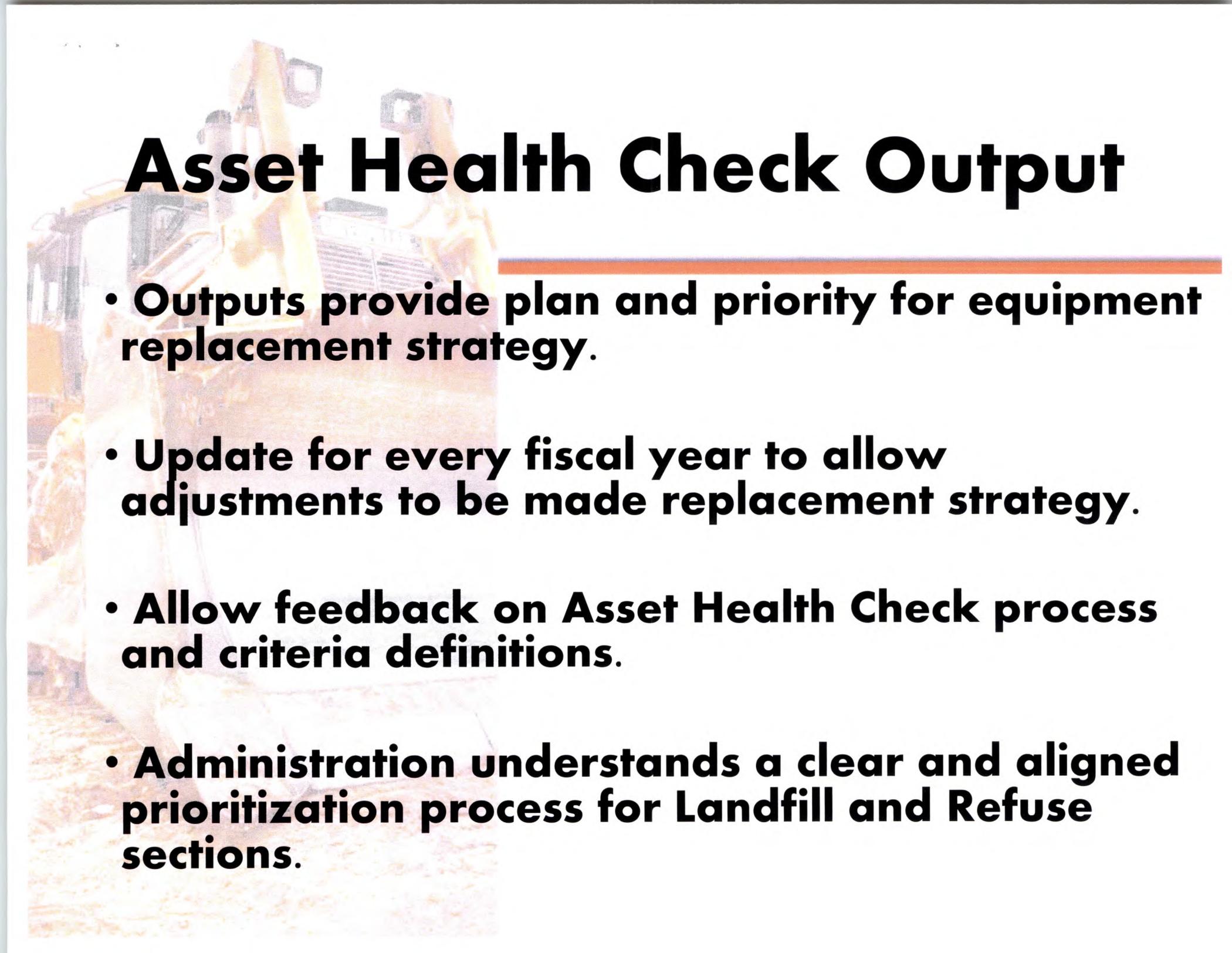
- Equipment is assessed on each of the criteria.
 - Equal distribution of all factors except maintenance cost.
 - Rank is out of 100 possible priority points.

Replacement Priority Calculation

$(\text{Maintenance Cost Assessment} \times 2) + \text{Asset Criticality Assessment} + \text{Asset Age Assessment} + \text{Asset Reliability Assessment} + \text{Asset Condition Assessment} \times 100$

18

Asset ID	Equipment Number	Section	Location	Equipment Type	Make	Model	Year	Purchase Cost	Current Book Value	Life to Date Maintenance Costs	Maintenance Costs	Asset Criticality	Asset Age	Asset Reliability	Asset Condition	Rank (out of 100)
CM2035	1233	REF	WAI	Manual Refuse Truck	Peterbilt	320 RH	2004	\$ 189,856.17	\$53,159.73	\$	104,468.00					83
CM1812	1100	REF	MAK	Manual Refuse Truck	GMC	F7B042	2000	\$ 135,696.69	\$5,427.87	\$	86,739.21					83
CM1811	1101	REF	WAI	Manual Refuse Truck	GMC	F7B042	2000	\$ 135,696.69	\$5,427.87	\$	111,989.89					78
12649	74	LF	CML	Large Dozer	Caterpillar	D8R II	2004	\$ 479,000.00	\$134,120.00	\$	607,914.56					78
CM1848	1120	LF	LLF	Automated Refuse Truck	Peterbilt	Auto 320	2002	\$ 154,676.25	\$24,748.20	\$	181,107.85					78
CM2188	1382	REF	MAK	Automated Refuse Truck	Peterbilt	MSTR	2007	\$ 217,694.42	\$100,139.43	\$	121,108.29					72
12650	106	LF	HLF	Loader	Caterpillar	953C	2004	\$ 182,000.00	\$50,960.00	\$	54,837.67					72
CM2330	1441	REF	WAI	Automated Refuse Truck	Autocar	320	2009	\$ 249,922.00	\$144,954.76	\$	190,327.37					72
CM2331	1442	REF	WAI	Automated Refuse Truck	Autocar	320	2009	\$ 249,922.00	\$144,954.76	\$	167,569.14					72
CM1887	1146	LF	CML	Dump Truck	International	4900	2002	\$ 100,006.00	\$16,000.96	\$	89,093.13					72
	101	LF	CML	Small Dozer	Caterpillar	D5 XL	2003	\$ 154,166.00	\$33,916.52	\$	206,345.04					72
15893	4	LF	CML	Compactor	Caterpillar	826H	2005	\$ 557,547.00	\$189,565.98	\$	518,416.41					72
CM1984	1217	LF	CML	Roll-off Truck	GMC/AutoCar	WXR64	2004	\$ 133,991.00	\$37,517.48	\$	62,357.97					72
CM1976	1214	LF	CML	Roll-off Truck	GMC/AutoCar	WXR64	2004	\$ 133,991.00	\$37,517.48	\$	44,297.07					72
CM1473	913	ADMIN	ADMIN	Vehicle	Jeep	Cherokee	1991	\$ 23,446.57	\$0.00	\$	7,300.00					72
18258	79	LF	LLF	Loader	Case	821E	2006	\$ 195,024.00	\$78,009.60	\$	39,828.38					67
CM2350	1458	LF	CML	Roll-off Truck	Peterbilt	320	2009	\$ 164,826.87	\$95,599.58	\$	107,243.14					67
CM2192	1386	REF	MAK	Automated Refuse Truck	Peterbilt	MSTR	2007	\$ 217,694.42	\$100,139.43	\$	93,273.10					67
CM2380	1506	LF	CML	Water Truck	Peterbilt	367	2009	\$ 210,473.52	\$122,074.64	\$	230,718.52					67
CM1986	1195	REF	WAI	Flatbed	Ford	F-350	2003	\$ 32,445.82	\$7,138.08	\$	31,165.96					61
23710	5	LF	CML	Compactor	Aljon	525C4	2008	\$ 699,504.00	\$363,742.08	\$	287,761.80					61



Asset Health Check Output

- **Outputs provide plan and priority for equipment replacement strategy.**
- **Update for every fiscal year to allow adjustments to be made replacement strategy.**
- **Allow feedback on Asset Health Check process and criteria definitions.**
- **Administration understands a clear and aligned prioritization process for Landfill and Refuse sections.**



**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
SOLID WASTE DIVISION
REFUSE TRUCK REPLACEMENT PLAN**

Site	Equipment ID	License	Model Year	Equipment Description	Replacement Year	Estimated Purchase Cost*
LAH	1121	CM2357	2000	GMC T-Series Rear Loader Refuse Truck	2018	\$ 350,000
WAI	1441	CM2330	2009	AutoCar 320 Automated Refuse Truck	2018	\$ 450,000
WAI	1442	CM2331	2009	AutoCar 320 Automated Refuse Truck	2018	\$ 450,000
WAI	1539	CM2415	2010	Peterbilt 320 Automated Refuse Truck	2018	\$ 450,000
MAK	1100	CM1812	2000	GMC F7B042 Rear Loading Refuse Truck	2019	\$ 350,000
LAH	1213	CM1978	2003	GMC Mini Refuse Truck	2019	\$ 175,000
MAK	1386	CM2192	2007	Peterbilt MSTR Automated Refuse Truck	2019	\$ 460,000
MAK	1239	CM2010	2004	GMC T-Series Rear Loader Refuse Truck	2020	\$ 370,000
LAH	1238	CM2009	2004	GMC T-Series Rear Loader Refuse Truck	2020	\$ 370,000
LLF	1551	CM246	2010	AutoCar ACX64R Automated Refuse Truck	2020	\$ 490,000
WAI	1561	CM2438	2012	AutoCar ACX64R Automated Refuse Truck	2020	\$ 470,000
WAI	1562	CM2439	2012	AutoCar ACX64R Automated Refuse Truck	2020	\$ 470,000
WAI	1568	CM2445	2012	AutoCar ACX64R Automated Refuse Truck	2020	\$ 470,000
MLF	1329	CM2201	2010	GMC T-Series Rear Loading Refuse Truck	2022	\$ 360,000
WAI	1569	CM2446	2013	Peterbilt 320 Manual Refuse Truck	2022	\$ 380,000
WAI	1584	CM2511	2014	AutoCar ACX64R Automated Refuse Truck	2023	\$ 460,000
WAI	1585	CM2513	2014	AutoCar ACX64R Automated Refuse Truck	2023	\$ 460,000
MAK	1605	CM2534	2015	AutoCar ACX64R Automated Refuse Truck	2023	\$ 480,000
MAK	1606	CM2533	2015	AutoCar ACX64R Automated Refuse Truck	2023	\$ 480,000
LAH	1607	CM2526	2015	AutoCar ACX64R Automated Refuse Truck	2024	\$ 490,000
WAI	1563	CM2567	2013	Isuzu W5 Mini Refuse Truck	2025	\$ 230,000
MAK	1581	CM2512	2014	Peterbilt 348 Rear Loading Refuse Truck	2026	\$ 390,000
MAK	1635	CM2575	2016	AutoCar ACX64R Automated Refuse Truck	2026	\$ 460,000
MAK	1636	CM2574	2016	AutoCar ACX64R Automated Refuse Truck	2026	\$ 460,000
HLF	1616	CM2543	2016	AutoCar ACMD Manual Refuse Truck	2026	\$ 390,000
LAH	1661	CM2633	2018	AutoCar ACX64R Automated Refuse Truck	2026	\$ 500,000
MAK	1604	CM2535	2015	Isuzu NRR Mini Refuse Truck	2027	\$ 220,000
WAI	1658	CM2630	2018	AutoCar ACX64R Automated Refuse Truck	2027	\$ 500,000
WAI	1659	CM2631	2018	AutoCar ACX64R Automated Refuse Truck	2027	\$ 500,000
MLF	1615	CM2541	2016	AutoCar ACMD Manual Refuse Truck	2027	\$ 400,000
LLF	1662	CM2634	2018	AutoCar ACX42R Automated Refuse Truck	2027	\$ 500,000
WAI	1663	CM2632	2018	AutoCar ACMD42 Manual Refuse Truck	2028	\$ 400,000
WAI	TBD	TBD	2019	Expansion Automated Truck	2029	\$ 460,000
LAH	TBD	TBD	2019	Expansion Automated Truck	2029	\$ 460,000
MAK	TBD	TBD	2019	Expansion Automated Truck	2029	\$ 460,000

Approved for Replacement Previous Years and Mayors Proposed FY2019

 Not Approved for Replacement Mayors Proposed FY2019



**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
SOLID WASTE DIVISION
ASSET REPLACEMENT PLAN**

FISCAL YEAR	2019
EQUIPMENT REPLACEMENT REQUEST	\$ 4,730,000.00

\$ 2,175,000 Mayor Approved

\$ 1,085,000 CDBG Approved

\$ 1,470,000 Mayor Not Approved

SECTION	LOCATION	ASSET ID	MODEL YEAR	MAKE & MODEL	EQUIPMENT TYPE	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
LF	CML	913	1993	Cherokee	Small Pickup	\$ 35,000												\$ 50,000			
LF	CML	966	1994	Ford Ranger	Small Pickup		\$ 65,000													\$ 50,000	
LF	CML	1146	2002	International Dump	Dump Truck			\$ 200,000													\$ 230,000
LF	CML	1214	2004	AutoCar WX64	Roll off			\$ 280,000										\$ 220,000			
LF	CML	1217	2004	AutoCar WX64	Roll off			\$ 280,000									\$ 220,000				
LF	CML	15893	2005	CAT 826H	Compactor							\$ 870,000									\$ 950,000
LF	CML	101	2003	CAT D5M	Small Dozer			\$ 620,000									\$ 680,000				
LF	CML	18257	2007	Case 580M	Backhoe					\$ 120,000											\$ 130,000
LF	CML	23376	2007	CAT D8T	Large Dozer						\$ 1,030,000								\$ 1,120,000		
LF	CML	12649	2004	CAT D8R	Large Dozer			\$ 990,000								\$ 1,080,000					
LF	CML	23369	2008	Kawasaki K-4 Mule	ATV		\$ 20,000										\$ 30,000				
LF	CML	23374	2008	Kawasaki K-5 Mule	ATV		\$ 20,000										\$ 30,000				
LF	CML	23371	2008	Kawasaki K-6 Mule	ATV			\$ 20,000										\$ 30,000			
LF	CML	23625	2008	Kawasaki K-7 Mule	ATV			\$ 20,000										\$ 30,000			
LF	CML	23710	2008	Aljon 525C4	Compactor				\$ 830,000								\$ 910,000				
LF	CML	1436	2008	Ford Explorer SportTrac	Small Pickup				\$ 40,000												\$ 50,000
LF	CML	1466	2008	Ford F-150	Small Pickup			\$ 40,000												\$ 50,000	
LF	CML	1392	2008	Service Truck	Truck					\$ 180,000											
LF	CML	24423	2009	Case 921E	Loader					\$ 550,000											\$ 630,000
LF	CML	1509	2009	Ford F-150	Small Pickup				\$ 40,000												\$ 50,000
LF	CML	1510	2009	Ford F-350	Large Pickup				\$ 50,000												\$ 60,000
LF	CML	1458	2009	Peterbilt 320	Roll off		\$ 280,000								\$ 210,000						
LF	CML	1459	2009	Peterbilt 320	Roll off		\$ 280,000								\$ 210,000						
LF	CML	1506	2009	Water Truck	Water Truck			\$ 260,000							\$ 280,000						\$ 300,000
LF	CML	24857	2010	Komatsu D155-AX-6	Large Dozer			\$ 990,000								\$ 1,080,000					
LF	CML	1517	2010	Ford F-150	Small Pickup					\$ 50,000											
LF	CML	TBD	2019	Expansion Request	Loader		\$ 525,000											\$ 610,000			
LF	CML	26650	2012	Tarpo-matic	Automatic Tarper										\$ 140,000						
LF	HLF	106	2004	Caterpillar 953C	Small Dozer		\$ 530,000								\$ 660,000						
LF	HLF	K-3	2008	Kawasaki Mule	ATV			\$ 20,000											\$ 30,000		
LF	HLF	81	2009	Komatsu D85-EX-15	Large Dozer					\$ 1,010,000							\$ 1,110,000				
LF	HLF	1545	2010	Ford F-150	Small Pickup					\$ 50,000											
LF	HLF	107	2014	Caterpillar 950K	Loader								\$ 570,000								
LF	HLF	CM2530	2015	Peterbilt	Water Truck										\$ 280,000						
LF	HLF	CM2496	2015	Peterbilt 365	Dump Truck											\$ 220,000					
LF	HLF	TBD	2019	Potential Expansion Request	Chipper		\$ 35,000														
LF	LLF	79	2006	Case 821E	Loader	\$ 400,000											\$ 600,000				
LF	LLF	110	2007	Caterpillar D7RDSII	Large Dozer					\$ 1,010,000											
LF	LLF	1352	2007	Ford F-150	Small Pickup		\$ 55,000												\$ 50,000		
LF	LLF	K-2	2008	Kawasaki Mule	ATV	\$ 20,000										\$ 30,000					
LF	LLF	CM2309	2008	Peterbilt	Water Truck						\$ 270,000										
LF	LLF	1493	2010	Peterbilt 365	Dump Truck							\$ 210,000									
LF	LLF	1517	2010	Ford F-150	Small Pickup					\$ 50,000											
LF	LLF	114	2011	Caterpillar D6T	Small Dozer								\$ 650,000								
LF	MLF	81	2013	Caterpillar D6R	Small Dozer									\$ 650,000							
LF	MLF	89	1993	CASE SkidSteer	Skid Steer										\$ 150,000						
LF	MLF	106	2006	Caterpillar 953C	Loader		\$ 530,000														
LF	MLF	1518	2010	Ford F-150	Small Pickup					\$ 50,000											
LF	MLF	1549	2011	Peterbilt 367 Water Truck	Truck						\$ 180,000										
LF	MLF	1600	2015	Peterbilt 365	Dump Truck											\$ 220,000					
LF	MLF	80A	2009	Caterpillar D7RII	Large Dozer					\$ 1,010,000										\$ 1,130,000	
LF	MLF	K-1	2007	Kawasaki Mule	ATV											\$ 30,000					
LF	MLF	TBD	2019	Expansion Request	Fuel Tank		\$ 25,000														
REF	HLF	1616	2016	AutoCar Xpert	Manual Refuse										\$ 390,000						
REF	LAH	1121	2004	GMC T Series	Manual Refuse	\$ 350,000											\$ 410,000				
REF	LAH	1213	2003	GMC C Series Mini	Manual Refuse		\$ 275,000												\$ 420,000		
REF	LAH	1238	2004	GMC T Series	Manual Refuse			\$ 370,000												\$ 420,000	
REF	LAH	1661	2018	AutoCar ACX64R	Automated Refuse									\$ 500,000					\$ 530,000		
REF	LAH	1480	2009	Ford F-350	Flatbed				\$ 60,000												\$ 70,000
REF	LAH	1572	2013	Nissan Frontier	Small Pickup								\$ 50,000								
REF	LAH	1607	2014	AutoCar ACX64R	Automated Refuse							\$ 490,000									
REF	LAH	TBD	2019	Expansion Request	Automated Refuse		\$ 450,000										\$ 520,000				
REF	LLF	1662	2018	AutoCar Xpeditor	Automated Refuse										\$ 500,000						



**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
SOLID WASTE DIVISION
ASSET REPLACEMENT PLAN**

FISCAL YEAR	2019
EQUIPMENT REPLACEMENT REQUEST	\$ 4,730,000.00

\$ 2,175,000 Mayor Approved

\$ 1,085,000 CDBG Approved

\$ 1,470,000 Mayor Not Approved

SECTION	LOCATION	ASSET ID	MODEL YEAR	MAKE & MODEL	EQUIPMENT TYPE	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
REF	LLF	1551	2010	AutoCar Xpeditior	Automated Refuse			\$ 470,000									\$ 520,000					
REF	MAK	1100	2000	GMC F7B042	Manual Refuse		\$ 350,000												\$ 420,000			
REF	MAK	1239	2004	GMCT Series	Manual Refuse			\$ 370,000													\$ 420,000	
REF	MAK	1293	2006	Ford F-150	Small Pickup			\$ 40,000													\$ 50,000	
REF	MAK	1386	2008	Peterbilt MSTR	Automated Refuse		\$ 460,000										\$ 520,000					
REF	MAK	1559	2011	Ford F-350	Flatbed							\$ 60,000										
REF	MAK	1581	2014	Peterbilt 348	Manual Refuse									\$ 390,000								
REF	MAK	1604	2015	Isuzu NRR	Manual Refuse										\$ 220,000							
REF	MAK	1605	2015	AutoCar ACX64R	Automated Refuse						\$ 480,000											\$ 540,000
REF	MAK	1606	2015	AutoCar ACX64R	Automated Refuse						\$ 480,000											\$ 540,000
REF	MAK	TBD	2019	Expansion Request	Automated Refuse		\$ 460,000										\$ 520,000					
REF	MLF	1329	2006	GMC	Manual Refuse					\$ 360,000								\$ 410,000				
REF	MLF	1615	2015	AutoCar Xpert	Manual Refuse										\$ 400,000							
REF	WAI	1663	2018	AutoCar ACMD	Manual Refuse											\$ 400,000						
REF	WAI	1166	2003	Ford	Large Pickup				\$ 50,000													\$ 60,000
REF	WAI	1195	2003	Ford F-350	Flatbed			\$ 60,000													\$ 70,000	
REF	WAI	1659	2018	AutoCar ACX64R	Automated Refuse										\$ 500,000							
REF	WAI	1402	2008	Ford F-150	Small Pickup				\$ 40,000													\$ 50,000
REF	WAI	1441	2009	Auto320	Automated Refuse	\$ 450,000										\$ 510,000						
REF	WAI	1442	2009	Auto320	Automated Refuse	\$ 450,000										\$ 510,000						
REF	WAI	1658	2018	AutoCar ACX64R	Automated Refuse											\$ 510,000						
REF	WAI	1539	2010	Peterbilt 320	Automated Refuse	\$ 450,000									\$ 500,000							
REF	WAI	1561	2012	AutoCar ACX64R	Automated Refuse			\$ 470,000										\$ 520,000				
REF	WAI	1562	2012	AutoCar ACX64R	Automated Refuse			\$ 470,000										\$ 520,000				
REF	WAI	1563	2013	Isuzu W5	Manual Refuse								\$ 230,000									
REF	WAI	1567	2012	Ford F-450 DRW	Flatbed							\$ 60,000										
REF	WAI	1568	2012	AutoCar ACX64R	Automated Refuse			\$ 470,000													\$ 530,000	
REF	WAI	1569	2013	Peterbilt 320	Manual Refuse					\$ 380,000												
REF	WAI	1584	2014	AutoCar ACX64R	Automated Refuse						\$ 480,000											\$ 540,000
REF	WAI	1585	2014	AutoCar ACX64R	Automated Refuse						\$ 480,000											\$ 540,000
REF	WAI	TBD	2019	Expansion Request	Automated Refuse		\$ 460,000															
			Assets in Service	81	TOTAL	\$ 2,155,000	\$ 4,730,000	\$ 5,360,000	\$ 2,190,000	\$ 4,820,000	\$ 3,400,000	\$ 820,000	\$ 2,370,000	\$ 1,930,000	\$ 4,050,000	\$ 4,590,000	\$ 4,440,000	\$ 4,430,000	\$ 3,100,000	\$ 2,190,000	\$ 4,740,000	

Kahului RPM 2018

Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
BLD-24	Chlorine Mixing Area	Chlorine Mixing Room	1/1/1980	1/1/2017	37	250000			under construction
FLW-71	Clarifier Area	Flowmeter - Effluent Disposal Well #1	1/1/1998	1/1/2017	19	2100			CIP - FY2019 - upgrade
FLW-72	Clarifier Area	Flowmeter - Effluent Disposal Well #2	1/1/1998	1/1/2017	19	2100			CIP - FY2019 - upgrade
FLW-73	Clarifier Area	Flowmeter - Effluent Disposal Well #3	1/1/1998	1/1/2017	19	2100			CIP - FY2019 - upgrade
FLW-74	Clarifier Area	Flowmeter - Effluent Disposal Well #4	1/1/1998	1/1/2017	19	2100			CIP - FY2019 - upgrade
FLW-76	Clarifier Area	Flowmeter - Effluent Disposal Well #6	1/1/1998	1/1/2017	19	2100			CIP - FY2019 - upgrade
FLW-77	Clarifier Area	Flowmeter - Effluent Disposal Well #7	1/1/1998	1/1/2017	19	2100			CIP - FY2019 - upgrade
FLW-78	Clarifier Area	Flowmeter - Effluent Disposal Well #8	1/1/1998	1/1/2017	19	2100			CIP - FY2019 - upgrade
BLD-42	Dewatering Area	Dewatering Building	1/1/1978	1/1/2017	39	500000			Current CIP
RTU-25	Dewatering Area	Kahului Plant Rtu'S	1/1/1993	1/1/2017	24	500000			CIP - design
MCC-29	Headworks Area	Septage Bldg. Mcc	1/1/1980	1/1/2017	37	50000			Current CIP
BLD-26	Headworks Area	Septage MCC Building	1/1/1978	1/1/2017	39	1000000			Current CIP
PMP-152	Pond Area	Emergency Effluent Pump #1	1/1/2000	1/1/2017	17	50000			
RTU-31	Pump Station - Kahului	RADIO TRANSMITTER UNIT	1/1/2006	1/1/2017	11	15000			
GEN-40	Pump Station - Paia	Emergency Standby Generator	1/1/2001	1/1/2017	16	30000			
TSW-34	Pump Station - Waiehu Kou	AUTO-TRANSFER SWITCH	1/1/2001	1/1/2017	16	8000			
RTU-27	Pump Station - A & B	RADIO TRANSMITTER UNIT	3/19/2008	3/19/2017	9	10000			
RTU-29	Pump Station - Ho O Hui Ana	RADIO TRANSMITTER UNIT	3/19/2008	3/19/2017	9	10000			
RTU-37	Pump Station - Paia	RADIO TRANSMITTER UNIT	3/19/2008	3/19/2017	9	10000			
RTU-40	Pump Station - Waiehu Kou	RADIO TRANSMITTER UNIT	3/19/2008	3/19/2017	9	10000			
SCD-2	Ops Bldg & Maint Shops	SCADA system	11/16/2009	11/16/2017	8	1000000			current CIP
CLS-41	Chlorine Storage Area	Chlorine Bldg. Scrubber	1/1/1993	1/1/2018	25	500000			
CNT-8	Dewatering Area	Centrifuge #2 (Humbolt)	1/1/1990	1/1/2018	28	600000			
1206	Kahului Vehicles	2003 Ford F150 Heritage 4X2	1/1/2003	1/1/2018	15	30000			
GEN-63	Pump Station - Kuau #1	Emergency Generator	1/1/2012	1/1/2018	6	35000			
GEN-33	Pump Station - Wailuku	Emergency Standby Generator	1/1/1998	1/1/2018	20	110000			
MCC-8	Ras/Was Pipe Gallery Area	Pipe Gallery MCC	1/1/2005	1/1/2018	13	60000			Curent CIP
GEN-57	Pump Station - Sprecklesville	Emergency Generator	1/31/2011	1/31/2018	7	35000			
CLS-35	Chlorine Mixing Area	Chlorine System	1/1/2005	1/1/2019	14	50000			
CNT-7	Dewatering Area	Centrifuge #3, Bowl Assembly	1/1/1989	1/1/2019	30	600000			
GEN-38	Pump Station - Kaa	Emergency Standby Generator	1/1/2000	1/1/2019	19	35000			
SUB-11	Pump Station - Waiehu Kou	Waiehou Kou Pump #2	1/1/1999	1/1/2019	20	12000			
TNK-109	Pump Station - Kuau #1	Generator Mounted Diesel Tank - 145 gal	1/1/2012	1/1/2019	7	3000			

Kahului RPM 2018

Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
FLW-65	Dewatering Area	Sludge Flowmeter #1	1/1/2009	1/1/2020	11	3500			
FLW-66	Dewatering Area	Sludge Flowmeter #2	1/1/2009	1/1/2020	11	3500			
FLW-67	Dewatering Area	Sludge Flowmeter #3	1/1/2009	1/1/2020	11	3500			
PMP-166	Headworks Area	Septage Receiving Station	1/1/2009	1/1/2020	11	0			Does not work
TUG-3	Kahului Vehicles	Kawasaki Mule	1/1/2005	1/1/2020	15	8000			
PND-2	Pond Area	Pond	1/1/1973	1/1/2020	47	250000			current CIP to seal asphalt
FLW-60	Pump Station - Waiehu Kou	Flowmeter 4	1/1/2004	1/1/2020	16	3500			
TNS-10	Pump Station - Wailuku	Transformer	1/1/2003	1/1/2020	17	15000			
MCC-43	Pump Station - Wailuku	MOTOR CONTROL CENTER	1/1/1998	1/1/2020	22	300000			Current CIP
TNK-87	Pump Station - Sprecklesville	1000 Gallon Sprecks Diesel Tank	5/17/2010	5/17/2020	10	25000			
COM-22	Blower Building Area	Utility Air Compressor #2	1/1/1998	1/1/2021	23	9000			
POL-8	Dewatering Area	Poly Feed System #1	1/1/2000	1/1/2021	21	11000			
POL-9	Dewatering Area	Poly Feed System #2	1/1/2000	1/1/2021	21	11000			
1179	Kahului Vehicles	2003 Ford 3/4 Ton Truck - PS truck	1/1/2003	1/1/2021	18	28000			
1145	Kahului Vehicles	2002 Chevy S-10 Truck	1/1/2002	1/1/2021	19	28000			
LAWN-1	Kahului Vehicles	Lawnmower	1/1/2002	1/1/2021	19	10000			
TNK-106	Pump Station - Kuau #2	Generator Mounted Diesel Tank - 145 ga	1/1/2012	1/1/2021	9	3000			
CEN-98	Clarifier Area	Utility Water Pump #1	1/13/2010	1/13/2021	11	24000			
TNK-115	Pump Station - Sprecklesville	Generator mounted diesel tank	4/9/2014	4/9/2021	7	5000			
BLW-29	Blower Building Area	Blower #1	1/1/2005	1/1/2022	17	250000			
BLW-30	Blower Building Area	Blower #2	1/1/2005	1/1/2022	17	250000			
BLW-31	Blower Building Area	Blower #3	1/1/2005	1/1/2022	17	250000			
GEN-59	Pump Station - Kuau #2	Emergency Generator	1/1/2012	1/1/2022	10	35000			
BYP-31	Pump Station - Naska	Piping and Appurtenances	1/1/1975	1/1/2022	47	200000			
FLW-58	Pump Station - Wailuku	Station Flow Meter (3)	1/1/1999	1/1/2022	23	39000			
GEN-56	Pump Station - Kuau #3	Emergency Generator	1/31/2011	1/31/2022	11	35000			
GEN-58	Pump Station - Kuau #4	Emergency Generator	1/31/2011	1/31/2022	11	35000			
1422	Kahului Vehicles	2008 Ford Pick Up Truck	7/9/2008	7/9/2022	14	25000			
DRY-3	Blower Building Area	Utility Air Dryer #1	1/1/2005	7/10/2022	17	7500			
DRY-4	Blower Building Area	Utility Air Dryer #2	1/1/2005	7/10/2022	17	7500			
PMP-146	Clarifier Area	Utility Water Pump #2 (P-40)	1/1/2007	1/1/2023	16	24000			
BYP-99	Dewatering Area	Dewatering Piping and Appurtenances (C	1/1/2009	1/1/2023	14	150000			
POL-11	Dewatering Area	Polymer Feed System #3	1/1/2008	1/1/2023	15	11000			

Kahului RPM 2018

Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
FLW-45	Pump Station - Kahului	Flowmeter # 3	1/1/2006	1/1/2023	17	13000			
PMP-147	Ras/Was Pipe Gallery Area	Digested Sludge Pump #1	1/1/2006	1/1/2023	17	8000			
PMP-148	Ras/Was Pipe Gallery Area	Digested Sludge Pump #2	1/1/2006	1/1/2023	17	8000			
DSB-9	Pump Station - Kahului	Pump #1	6/1/2007	6/1/2023	16	22000			
DSB-10	Pump Station - Kahului	Pump #2	6/1/2007	6/1/2023	16	22000			
DSB-11	Pump Station - Kahului	Pump #3	6/1/2007	6/1/2023	16	22000			
1490	Kahului Vehicles	2009 Ford Ranger	8/5/2009	8/5/2023	14	28000			
FRK-4	Kahului Vehicles	Forklift	11/26/2007	11/26/2023	16	30000			
TSW-21	Blower Building Area	Blower Bldg. Automatic Transfer Switch	1/1/2005	1/1/2024	19	50000			
HMI-2	Dewatering Area	Centrifuge #2 Control Panel	10/5/2009	1/1/2024	14	100000			
HMI-3	Dewatering Area	Centrifuge #1 Control Panel	10/5/2009	1/1/2024	14	100000			
HMI-4	Dewatering Area	Centrifuge #3 Control Panel	10/5/2009	1/1/2024	14	100000			
PST-36	Pump Station - Kaa	Kaa Pump Station	1/1/1977	1/1/2024	47	1500000			
PST-35	Pump Station - Naska	Naska Pump Station	1/1/1974	1/1/2024	50	1500000			
MCC-38	Pump Station - Naska	Motor Control Center	1/1/1985	1/1/2024	39	20000			
PST-31	Pump Station - Wailuku	Wailuku Pump Station	1/1/1977	1/1/2024	47	2000000			
BYP-44	Ras/Was Pipe Gallery Area	Decant Piping and App	1/1/1973	1/1/2024	51	500000			
DSB-14	Pump Station - Paia	Pump #1	8/1/2009	8/1/2024	15	32037			
DSB-15	Pump Station - Paia	Pump #2	8/1/2009	8/1/2024	15	32037			
SUB-36	Pump Station- Paukukalo	WET SUBMERSIBLE PUMP	9/4/2009	9/4/2024	15	35000			
SUB-37	Pump Station- Paukukalo	WET SUBMERSIBLE PUMP	9/4/2009	9/4/2024	15	35000			
TNK-58	Aeration Basin Area	MLSS Channel	1/1/1973	1/1/2025	52	1000000			
ACU-40	Blower Building Area	Blower Building Air Handling Unit	5/4/2015	1/1/2025	9	5000			
BLD-25	Chlorine Storage Area	Chlorine Storage Building	1/1/1980	1/1/2025	45	1000000			
WEL-17	Clarifier Area	Effluent Disposal Well #5	1/1/1993	1/1/2025	32	500000			pipe deteriorated- requires maintenance
CLR-14	Clarifier Area	# 4 Clarifier	1/1/1993	1/1/2025	32	100000			
SCR-21	Clarifier Area	Sand Filter Step Screen	1/1/2004	1/1/2025	21	250000			
CON-5	Dewatering Area	Dewatering Incline Conveyor	1/1/2009	1/1/2025	16	192400			
CON-6	Dewatering Area	Dewatering Transverse Conveyor	1/1/2009	1/1/2025	16	200000			
PMP-154	Dewatering Area	No.1 Pump (Plant Lift Station)	1/1/2009	1/1/2025	16	30000			
PMP-155	Dewatering Area	No.2 Pump (Plant Lift Station)	1/1/2009	1/1/2025	16	30000			
POS-13	Dewatering Area	No.1 Sludge Feed Pump	1/1/2009	1/1/2025	16	18000			
POS-15	Dewatering Area	No.3 Sludge Feed Pump	1/1/2009	1/1/2025	16	18000			

Kahului RPM 2018

Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
ACU-38	Ops Bldg & Maint Shops	Lunchroom ACU	9/15/2014	1/1/2025	10	10000			
FLW-44	Pump Station - Kahului	Flowmeter # 2	1/1/2006	1/1/2025	19	13000			
TNS-5	Pump Station - Kahului	Kahului P.S. Transformer	1/1/2006	1/1/2025	19	150000			
GEN-37	Pump Station - Naska	Emergency Standby Generator	1/1/2000	1/1/2025	25	25000			
BYP-27	Pump Station - Wailuku	Piping and Appurtenances	1/1/1998	1/1/2025	27	1000000			
MCC-23	Pump Station - Wailuku	Wailuku Ps Main Breakers	1/1/1998	1/1/2025	27	8000			
MCC-24	Pump Station - Wailuku	Wailuku Power Dist. Panels	1/1/1998	1/1/2025	27	75000			
HMI-1	Pump Station- Paukukalo	HMI Panel	9/4/2009	1/1/2025	15	10000			
SCR-22	Clarifier Area	Sand Filter WAP	1/2/2004	1/2/2025	21	0			
ACU-39	Ops Bldg & Maint Shops	Main ACU	9/15/2014	1/2/2025	10	10000			
CEN-99	Clarifier Area	Scum Pump #1	1/6/2011	1/6/2025	14	18000			
CEN-100	Clarifier Area	Scum Pump #2	1/6/2011	1/6/2025	14	18000			
TNK-126	Pump Station - Ho O Hui Ana	200 Gallon Diesel Tank	1/1/2001	1/7/2025	24	6000			
SUB-51	Pump Station - Kuau #3	Pump #1	1/31/2011	1/31/2025	14	18000			
SUB-52	Pump Station - Kuau #3	Pump #2	1/31/2011	1/31/2025	14	18000			
CEN-105	Ras/Was Pipe Gallery Area	RAS Chopper Pump #1	4/1/2011	4/1/2025	14	30000			
CEN-109	Ras/Was Pipe Gallery Area	RAS Chopper Pump #2	4/1/2011	4/1/2025	14	30000			
CEN-110	Ras/Was Pipe Gallery Area	RAS Chopper Pump #3	4/1/2011	4/1/2025	14	30000			
CEN-111	Ras/Was Pipe Gallery Area	RAS Chopper Pump #4	4/1/2011	4/1/2025	14	30000			
CEN-112	Ras/Was Pipe Gallery Area	RAS Chopper Pump #5	4/1/2011	4/1/2025	14	30000			
CEN-113	Ras/Was Pipe Gallery Area	RAS Chopper Pump #6	4/1/2011	4/1/2025	14	30000			
CEN-114	Ras/Was Pipe Gallery Area	RAS Chopper Pump #7	4/1/2011	4/1/2025	14	30000			
FLW-49	Pump Station - Kahului	Flowmeter # 1	6/1/2007	6/1/2025	18	13000			
SUB-54	Pump Station - Sprecklesville	Pump #1	11/1/2011	11/1/2025	14	20000			
SUB-55	Pump Station - Sprecklesville	Pump #2	11/1/2011	11/1/2025	14	20000			
CEN-118	Ras/Was Pipe Gallery Area	Digested Sludge Pump #3	11/1/2011	11/1/2025	14	8000			
CEN-120	Ras/Was Pipe Gallery Area	Decant Pump #2	11/1/2011	11/1/2025	14	8000			
ABS-10	Aeration Basin Area	Aeration Basin #1 - Structural	1/1/1992	1/1/2026	34	2000000			
ABS-11	Aeration Basin Area	Aeration Basin #2 - Structural	1/1/1992	1/1/2026	34	2000000			
TNK-70	Clarifier Area	Clarifier 1 - 7 Structural	1/1/1977	1/1/2026	49	4000000			
TNK-54	Clarifier Area	Sand Filters 1 & 2 Structural	1/1/1980	1/1/2026	46	2000000			
GEN-36	Pump Station - Ho O Hui Ana	Emergency Standby Generator	1/1/2001	1/1/2026	25	30000			
SUB-75	Pump Station - Kuau #1	Pump #1	1/1/2012	1/1/2026	14	18000			

Kahului RPM 2018

Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
SUB-76	Pump Station - Kuau #1	Pump #2	1/1/2012	1/1/2026	14	18000			
SUB-62	Pump Station - Kuau #2	Pump #1	1/1/2012	1/1/2026	14	18000			
SUB-63	Pump Station - Kuau #2	Pump #2	1/1/2012	1/1/2026	14	18000			
FLW-59	Pump Station - Naska	Magnetic Flow Meter	1/1/2008	1/1/2026	18	7500			
TSW-20	Pump Station - Paia	Auto Transfer Switch	1/1/2009	1/1/2026	17	8000			
GEN-12	Pump Station - Waiehu Kou	Emergency Generator Waiehu Kou	1/1/2001	1/1/2026	25	30000			
SUB-57	Pump Station - Kuau #4	Pump #1 - Kuau #4	1/24/2012	1/24/2026	14	18000			
SUB-58	Pump Station - Kuau #4	Pump #2 - Kuau #4	1/24/2012	1/24/2026	14	18000			
ATV-5	Kahului Vehicles	2014 Deere Cart	3/12/2014	3/12/2026	12	10000			
TSW-26	Pump Station - Kahului	AUTO-TRANSFER SWITCH	3/19/2008	3/19/2026	18	10000			
TSW-35	Pump Station - Wailuku	AUTO-TRANSFER SWITCH	3/19/2008	3/19/2026	18	10000			
DD-11	Dewatering Area	No. 2 Sludge Feed Pump - 6DD	4/11/2011	4/11/2026	15	18000			
CEN-121	Pond Area	Emergency Effluent Pump #2	5/1/2012	5/1/2026	14	50000			
CEN-119	Ras/Was Pipe Gallery Area	Decant Pump #1	11/1/2011	11/1/2026	15	8000			
DSB-16	Pump Station - A & B	A & B Pump #1	12/1/2012	12/1/2026	14	20000			
DSB-17	Pump Station - A & B	A & B Pump #2	12/1/2012	12/1/2026	14	20000			
DSB-18	Pump Station - A & B	A & B Pump #3	12/1/2012	12/1/2026	14	20000			
FLW-62	Ras/Was Pipe Gallery Area	Digester Air Flow Meter #1	1/1/2010	1/1/2027	17	8000			
PMP-144	Ras/Was Pipe Gallery Area	Digester Decant Pump #2 (P-30)	1/1/2013	1/1/2027	14	7500			
SUB-80	Pump Station - Kaa	Pump #1	4/1/2013	4/1/2027	14	20000			
SUB-81	Pump Station - Kaa	Pump #2	4/1/2013	4/1/2027	14	20000			
ACU-17	Blower Building Area	Air Conditioner	1/1/2005	7/10/2027	22	25000			
FLW-109	Pump Station- Paukukalo	Flow Meter	9/1/2009	9/1/2027	18	9500			
TSW-45	Pump Station- Paukukalo	Auto transfer Switch	9/4/2009	9/4/2027	18	10000			
SUB-83	Pump Station - Waiehu Kou	Waiehu Kou Pump #1	11/26/2013	11/26/2027	14	12000			
GEN-47	Blower Building Area	Plant Emerg Generator	1/1/2005	1/1/2028	23	150000			
WEL-14	Clarifier Area	Effluent Disposal Well #2	1/1/1977	1/1/2028	51	500000			
PNL-43	Pump Station - Kahului	Pump Station Control Panel	1/1/2006	1/1/2028	22	20000			
FLW-114	Pump Station - Kuau #3	6 Flowmeter	1/1/2011	1/1/2028	17	5500			
RTU-34	Pump Station - Kuau #3	RADIO TRANSMITTER UNIT	1/1/2011	1/1/2028	17	10000			
RTU-35	Pump Station - Kuau #4	RADIO TRANSMITTER UNIT	1/1/2011	1/1/2028	17	10000			
FLW-123	Pump Station - Kuau #4	6 Flowmeter	1/1/2011	1/1/2028	17	5500			
MCC-39	Pump Station - Paia	Pump Control Panel	1/1/1960	1/1/2028	68	15000			

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
RTU-38	Pump Station - Sprecklesville	RADIO TRANSMITTER UNIT	1/1/2011	1/1/2028	17	10000			
TSW-32	Pump Station - Sprecklesville	AUTO-TRANSFER SWITCH	1/1/2011	1/1/2028	17	8000			
BYP-40	Pump Station - Waiehu Kou	Piping and Appurtenances	1/1/1999	1/1/2028	29	250000			
FLW-64	Ras/Was Pipe Gallery Area	Ras Flow Meter	1/1/2011	1/1/2028	17	22000			
TSW-47	Pump Station - Kuau #3	Auto Transfer Switch	1/31/2011	1/31/2028	17	8000			
TSW-48	Pump Station - Kuau #4	Auto Transfer Switch	1/31/2011	1/31/2028	17	8000			
BLW-28	Blower Building Area	Blower #5 Turblex	10/28/2009	10/28/2028	19	650000			
DIF-1	Aeration Basin Area	Diffuser - Aeration Basin #1	1/1/2005	1/1/2029	24	250000			
DIF-2	Aeration Basin Area	Diffuser - Aeration Basin #2	1/1/2005	1/1/2029	24	250000			
DIF-3	Aeration Basin Area	Diffuser - Aeration Basin #3	1/1/2005	1/1/2029	24	250000			
WEL-15	Clarifier Area	Effluent Disposal Well #3	1/1/1977	1/1/2029	52	500000			
WEL-16	Clarifier Area	Effluent Disposal Well #4	1/1/1977	1/1/2029	52	500000			
TNK-55	Clarifier Area	Sand Filter 3 Structural	1/1/1992	1/1/2029	37	1000000			
TNK-56	Clarifier Area	Chlorine contact chamber 1	1/1/1992	1/1/2029	37	1000000			
TNK-68	Clarifier Area	Chlorine contact chamber 2	1/1/1992	1/1/2029	37	1000000			
TNK-36	Dewatering Area	#1 Sludge Holding Tank (Old)	1/1/1977	1/1/2029	52	500000			
BLD-12	Ops Bldg & Maint Shops	Admin Building - Kahului-Wailuku Treatr	1/1/1977	1/1/2029	52	1000000			
BYP-30	Pump Station - Ho O Hui Ana	Piping and Appurtenances	1/1/2001	1/1/2029	28	250000			
RTU-32	Pump Station - Kuau #1	RADIO TRANSMITTER UNIT	1/1/2012	1/1/2029	17	10000			
TSW-27	Pump Station - Kuau #1	Auto Transfer Switch	1/1/2012	1/1/2029	17	8000			
RTU-58	Pump Station - Kuau #2	RADIO TRANSMITTER UNIT	1/1/2012	1/1/2029	17	10000			
BLD-14	Ras/Was Pipe Gallery Area	Ras/Was Pipe Gallery	1/1/1977	1/1/2029	52	2000000			
FLW-63	Ras/Was Pipe Gallery Area	Dig. Air Flow Meter #2	1/1/2012	1/1/2029	17	3700			
BYP-43	Ras/Was Pipe Gallery Area	Sludge Piping and App.	1/1/1973	1/1/2029	56	500000			
RTU-41	Pump Station - Wailuku	RADIO TRANSMITTER UNIT	3/19/2008	3/19/2029	21	15000			
RTU-36	Pump Station - Naska	RADIO TRANSMITTER UNIT	3/19/2008	3/19/2029	21	0			
TSW-31	Pump Station - Naska	AUTO-TRANSFER SWITCH	3/19/2008	3/19/2029	21	0			
FLW-126	Pump Station - Kuau #2	6 Flowmeter	4/1/2012	4/1/2029	17	5500			
TSW-49	Pump Station - Kuau #2	Auto Transfer Switch	4/1/2012	4/1/2029	17	8000			
PNL-25	Pump Station - Kuau #1	Touchscreen Control Panel	4/27/2012	4/27/2029	17	10000			
PNL-23	Pump Station - Kuau #2	Touchscreen Control Panel	4/27/2012	4/27/2029	17	10000			
PNL-22	Pump Station - Kuau #3	Touchscreen Control Panel	4/27/2012	4/27/2029	17	10000			
PNL-21	Pump Station - Kuau #4	Touchscreen Control Panel	4/27/2012	4/27/2029	17	10000			

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
FLW-130	Pump Station - Kuau #1	6 Flowmeter	6/1/2012	6/1/2029	17	5500			
TNK-52	Headworks Area	Influent Channel	1/1/2000	1/1/2030	30	1000000			
PIP-1	Headworks Area	Influent Piping	1/1/1977	1/1/2030	53	1000000			
TSW-22	Pump Station - A & B	Auto- Transfer Switch	1/1/2013	1/1/2030	17	8000			
TSW-24	Pump Station - Ho O Hui Ana	AUTO-TRANSFER SWITCH	1/1/2013	1/1/2030	17	8000			
TNK-110	Pump Station - Kaa	500 Gallon generator mount Diesel Tank	1/1/2000	1/1/2030	30	4000			
GEN-32	Pump Station - Kahului	Emergency Standby Generator	1/1/2009	1/1/2030	21	125000			
RTU-30	Pump Station - Kaa	RADIO TRANSMITTER UNIT	3/19/2013	3/19/2030	17	10000			
TSW-50	Pump Station - Kaa	AUTO-TRANSFER SWITCH	4/1/2013	4/1/2030	17	8000			
FLW-132	Pump Station - Kaa	8 Flowmeter	4/1/2013	4/1/2030	17	5500			
DSB-21	Pump Station - Wailuku	Wailuku Pump #1	6/1/2015	6/10/2030	15	100000			
DSB-24	Pump Station - Wailuku	Wailuku Pump #2	12/1/2016	6/10/2030	13	100000			
DSB-25	Pump Station - Wailuku	Wailuku Pump #1	6/1/2016	6/10/2030	14	100000			
RTU-57	Pump Station- Paukukalo	RADIO TRANSMITTER UNIT	12/29/2009	12/29/2030	21	10000			
ABS-12	Aeration Basin Area	Aeration Basin #3 - Structural	1/1/2005	1/1/2031	26	2000000			
TNK-69	Aeration Basin Area	Digester 1 & 2 Structural	1/1/1980	1/1/2031	51	2000000			
BLD-13	Blower Building Area	Blower Building	1/1/2005	1/1/2031	26	2500000			
COM-34	Blower Building Area	Utility Air Compressor #1	1/1/2013	1/1/2031	18	10000			
SUB-90	Pump Station - Ho O Hui Ana	Ho'o Chopper Pump #1	8/9/2016	1/1/2031	14	20000			
SUB-91	Pump Station - Ho O Hui Ana	Ho'o Chopper Pump #1	8/9/2016	1/1/2031	14	20000			
PST-38	Pump Station - Paia	Paia Pump Station	1/1/1970	1/1/2031	61	1500000			
FLW-46	Pump Station - Sprecklesville	10 Flowmeter	1/1/2011	1/1/2031	20	5500			
PNL-42	Dewatering Area	Plant Lift Station Control Panel	5/5/2015	5/5/2031	16	0			
BLW-39	Blower Building Area	Blower #4- Turblex 400Hp	6/1/2013	6/1/2031	18	500000			
GEN-53	Pump Station- Paukukalo	Generator	9/4/2009	9/4/2031	22	50000			
FLW-75	Clarifier Area	Flowmeter - Effluent Disposal Well #5	1/1/2017	1/1/2032	15	2100			
FNC-1	Ops Bldg & Maint Shops	Perimeter Fence	1/1/2012	1/1/2032	20	50000			
BYP-34	Pump Station - Paia	Piping and Appurtenances	1/1/1987	1/1/2032	45	250000			
OCU-22	Pump Station- Paukukalo	Biocube OCU	9/4/2009	9/4/2032	23	100000			
TNS-6	Blower Building Area	Transformer	1/1/2017	1/1/2033	16	150000			
TNK-37	Dewatering Area	#2 Sludge Holding Tank (New)	1/1/1992	1/1/2033	41	500000			
SCR-23	Headworks Area	Step Screen #1	1/1/2015	1/1/2033	18	250000			
SCR-24	Headworks Area	Step Screen #2	1/1/2015	1/1/2033	18	250000			

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
PST-33	Pump Station - A & B	A & B Pump Station Building	1/1/1977	1/1/2033	56	1000000			
FLW-131	Clarifier Area	Effluent Flow Meter	3/1/2013	3/1/2033	20	3000			
BYP-56	Pump Station- Paukukalo	Piping and Apputenances	9/4/2009	9/4/2033	24	20000			
BYP-57	Pump Station - Sprecklesville	Piping and Appurtenances	11/1/2011	11/1/2033	22	100000			
ACU-31	Dewatering Area	Air Conditioning system - 4 ton	5/17/2013	1/1/2034	20	0			
PST-37	Pump Station - Sprecklesville	Sprecklesville Pump Station	1/1/1977	1/1/2034	57	0			
BYP-64	Pump Station - Kuau #2	Piping and Appurtenances	4/1/2012	4/1/2034	22	100000			
BYP-70	Pump Station - Kuau #1	Piping and Appurtenances	6/1/2012	6/1/2034	22	100000			
TNK-90	Pump Station - Kuau #3	Generator Mounted Diesel Tank - 145 ga	6/16/2011	6/16/2034	23	3000			
TNK-95	Pump Station - Kuau #4	Generator Mounted Diesel Tank - 145 ga	6/16/2011	6/16/2034	23	3000			
WEL-13	Clarifier Area	Effluent Disposal Well #1	1/1/1977	1/1/2035	58	500000			
SCR-25	Headworks Area	Step Screen WAP	1/1/2015	1/1/2035	20	0			
TNK-57	Pond Area	Pond Valve Box	1/1/1973	1/1/2035	62	50000			
MCC-40	Pump Station - Sprecklesville	MOTOR CONTROL CENTER	1/1/1987	1/1/2035	48	10000			
CNT-10	Dewatering Area	Centrifuge #1	5/5/2015	5/5/2035	20	500000			
BLD-27	Dewatering Area	Sludge Pump Building	1/1/1978	1/1/2036	58	500000			
TNK-127	Pump Station - Waiehu Kou	Diesel Tank - 500 Gallons	4/8/2016	1/1/2036	19	10000			
FIL-29	Clarifier Area	Aqua Diamond Filter	4/28/2017	1/1/2037	19	1000000			
CLR-11	Clarifier Area	# 1 Clarifier	1/1/2011	1/1/2038	27	100000			
TNK-101	Headworks Area	Grit Chamber	1/1/1977	1/1/2038	61	0			
PST-41	Pump Station - Kuau #3	Kuau Pump Station #3	1/1/1977	1/1/2038	61	0			
PST-42	Pump Station - Kuau #4	Kuau Ps#4 Station (Mantokuji)	1/1/1977	1/1/2038	61	0			
CLR-22	Clarifier Area	Clarifier #5	1/1/2011	1/1/2039	28	100000			
CLR-23	Clarifier Area	Clarifier #6	1/1/2011	1/1/2039	28	100000			
DIF-6	Aeration Basin Area	Diffusers - Digester #1	2/1/2012	2/1/2039	27	100000			
DIF-7	Aeration Basin Area	Diffusers - Digester #2	2/1/2012	2/1/2039	27	100000			
CLR-17	Clarifier Area	# 7 Clarifier	5/1/2012	5/1/2039	27	100000			
CLR-12	Clarifier Area	# 2 Clarifier	1/1/2013	1/1/2040	27	100000			
CLR-21	Clarifier Area	Clarifier #3	1/1/2013	1/1/2040	27	100000			
PST-32	Pump Station- Paukukalo	Hawaiian Homes Pump Station	1/1/1987	1/1/2040	53	0			
DIF-8	Headworks Area	Grit Chamber Diffusers	1/1/2012	1/1/2042	30	0			
GEN-69	Pump Station - A & B	GENERATOR	5/6/2016	1/1/2042	25	25000			
MCC-25	Pump Station - Kuau #1	Sub Panel Enclosure	1/1/1997	1/1/2042	45	0			

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
WEL-18	Clarifier Area	Effluent Disposal Well #6	1/1/1993	1/1/2043	50	500000			
WEL-19	Clarifier Area	Effluent Disposal Well #7	1/1/1993	1/1/2043	50	500000			
WEL-20	Clarifier Area	Effluent Disposal Well #8	1/1/1993	1/1/2043	50	500000			
BYP-55	Pump Station - Kahului	Piping and App.	1/1/2006	1/1/2043	37	500000			
MCC-42	Pump Station - Waiehu Kou	MOTOR CONTROL CENTER	3/19/1999	3/19/2043	44	30000			
MCC-36	Pump Station - Ho O Hui Ana	Control Panel	1/1/2001	1/1/2045	44	10000			
BYP-32	Pump Station - Kaa	Piping and Appurtenances	4/1/2013	4/1/2045	32	300000			
BYP-67	Dewatering Area	Dewatering Piping and Appurtenances (I	1/1/2009	1/1/2046	37	150000			
PST-34	Pump Station - Ho O Hui Ana	Ho'O Hui Ana Pump Station	1/1/1998	1/1/2046	48	250000			
MCC-80	Blower Building Area	Blower Building MCC (1299-1307)	1/1/1994	1/1/2047	53	175000			
TNK-122	Blower Building Area	Diesel Day Tank	1/1/1994	1/1/2047	53	6000			
BYP-37	Pump Station - Kuau #3	Piping and Appurtenances	1/1/2011	1/1/2047	36	100000			
PST-44	Pump Station - Waiehu Kou	Waiehu Kou Pump Station	1/1/1999	1/1/2047	48	500000			
BYP-42	Ras/Was Pipe Gallery Area	Ras Piping and Appurtenances	1/1/2011	1/1/2047	36	500000			
BYP-41	Ras/Was Pipe Gallery Area	Digester Air Piping	1/1/2011	1/1/2047	36	500000			
MCC-65	Clarifier Area	Filter Area Pump Control Cabinet	1/1/2012	1/1/2048	36	18000			
MCC-22	Pump Station - Kahului	MCC	1/1/2006	1/1/2048	42	100000			
BYP-58	Pump Station - Kuau #4	Piping and Appurtenances	1/1/2012	1/1/2048	36	100000			
BYP-29	Pump Station - A & B	Piping and Appurtenances	11/1/2012	11/1/2048	36	250000			
MCC-64	Dewatering Area	Dewatering MCC	1/1/2009	1/1/2050	41	500000			
TNK-123	Pump Station - Wailuku	Diesel Day Tank	1/1/1998	1/1/2050	52	2000			
MCC-70	Pump Station- Paukukalo	MOTOR CONTROL CENTER	9/4/2009	9/4/2050	41	50000			
PST-30	Pump Station - Kahului	Kahului Pump Station	1/1/2006	1/1/2052	46	2500000			
MCC-27	Pump Station - Kuau #3	Sub Panel Enclosure	1/1/2011	1/1/2052	41	10000			
MCC-28	Pump Station - Kuau #4	Sub Panel Enclosure	1/1/2012	1/1/2053	41	10000			
MCC-74	Pump Station - A & B	Process Control Panel	12/1/2012	12/1/2053	41	10000			
MCC-75	Pump Station - Kaa	MOTOR CONTROL CENTER	4/1/2013	4/1/2054	41	10000			
PST-45	Dewatering Area	Plant Lift Station	1/1/2009	1/1/2055	46	2000000			
TNK-88	Pump Station - Kahului	Day Tank	8/2/2010	8/2/2056	46	3000			
TNK-102	Pump Station - Kahului	2000 Gal Diesel Tank -Kah PS	3/2/2012	3/2/2057	45	50000			
TNK-103	Pump Station - Paia	1000 Gal Diesel Tank -Paia PS	3/2/2012	3/2/2057	45	30000			
TNK-104	Pump Station - Wailuku	2000 Gal Diesel Tank -Wai PS	3/2/2012	3/2/2057	45	50000			
TNK-92	Blower Building Area	Diesel Tank - 6000 gallon- concrete	11/23/2011	11/23/2057	46	70000			

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Cond Rate	Perf Rate	Comments
TNK-85	Pump Station- Paukukalo	Day Tank	9/4/2009	9/4/2059	50	5000			
MCC-73	Pump Station - Kuau #2	Sub Panel Enclosure	1/1/2012	1/1/2062	50	10000			
ACU-23	Pump Station - Kahului	Air Conditioner	11/1/2012		#NUM!	4000			
TNK-129	Pump Station - Naska	200 Gal Diesel Tank	4/26/2017		#NUM!	0			
FLW-137	Pump Station - Paia	8 Flowmeter	10/20/2014		#NUM!	6000			

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
PMP-17	Kihei Pump Station #8	Pump #2	1/1/1995	1/1/2013		34000	
RTU-60	Effluent Area	Reuse RTU	1/1/1997	1/1/2016	19	0	CIP - 2017, Under Construction
RTU-18	Filter Area	In Plant Rtu #9	1/1/1997	1/1/2016	19	0	CIP - 2017, Under Construction
PMP-3	Kihei Pump Station #3	Pump #1	1/1/1995	1/1/2016	21	16000	
PMP-4	Kihei Pump Station #3	Pump #2	1/1/1995	1/1/2016	21	16000	
PMP-12	Kihei Pump Station #6	Pump #4	1/1/1995	1/1/2016		48000	
GEN-6	Kihei Pump Station #8	Emergency Standby Generator	1/1/1985	1/1/2016	31	50000	
DIF-5	Activated Sludge Area	MLSS Aeration Channel Internals	1/1/1988	1/1/2017	29	250000	
RTU-20	Aeration Basin Area	In Plant Rtu #11	1/1/1997	1/1/2017	20	0	
CLR-2	Clarifier Area	Clarifier #4	1/1/1989	1/1/2017	28	500000	
PMP-40	Clarifier Area	No.2 Plant Drain Pump	1/1/1989	1/1/2017	28	16000	
RTU-12	Clarifier Area	In Plant Rtu #3	1/1/1997	1/1/2017	20	0	Current CIP
BYP-66	Clarifier Area	In Plant Lift Station #2 Piping and App.	1/1/1994	1/1/2017	23	0	Proposed CIP
CNT-3	Dewatering Area	No.3 Centrifuge	1/1/1995	1/1/2017	22	600000	
FLW-13	Dewatering Area	Sludge Flow Meters (3)	1/1/2002	1/1/2017	15	13000	
POL-3	Dewatering Area	Polymer Feed System #3	1/1/2004	1/1/2017	13	21000	
RTU-15	Dewatering Area	In Plant Rtu #6	1/1/1997	1/1/2017	20	0	Current CIP
RTU-16	Dewatering Area	In Plant Rtu #7	1/1/1997	1/1/2017	20	0	Current CIP
RTU-13	Digester Area	In Plant Rtu #4	1/1/1997	1/1/2017	20	0	
RTU-11	Effluent Area	In Plant Rtu #2	1/1/1997	1/1/2017	20	0	CIP - 2017, Under Construction
RTU-19	Effluent Area	In Plant Rtu #10	1/1/1997	1/1/2017	20	0	CIP - 2017, Under Construction
GRT-7	Headworks Area	Grit System	1/1/1993	1/1/2017	24	1000000	Study - not worth it to replace
RTU-14	Headworks Area	In Plant Rtu #5	1/1/1997	1/1/2017	20	0	Current CIP to replace
OCU-16	Headworks Area	Odor Control Unit	1/1/1994	1/1/2017	23	1000000	Do not need - no odor complaints
RTU-26	Kihei Pump Station #2	RADIO TRANSMITTER UNIT	1/1/1995	1/1/2017	22	10000	
PMP-3	Kihei Pump Station #3	Pump #1	1/1/2013	1/1/2017	4	16000	
PMP-4	Kihei Pump Station #3	Pump #2	1/1/2113	1/1/2017	#NUM!	16000	
PMP-5	Kihei Pump Station #4	Pump #1	1/1/1995	1/1/2017	22	28000	
PMP-6	Kihei Pump Station #4	Pump #2	1/1/1995	1/1/2017	22	28000	
PMP-7	Kihei Pump Station #5	Pump #1	1/1/1995	1/1/2017	22	30000	
PMP-8	Kihei Pump Station #5	Pump #2	1/1/1995	1/1/2017	22	30000	
PMP-12	Kihei Pump Station #6	Pump #4	1/1/1995	1/1/2017	22	48000	

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
RTU-05	Kihei Pump Station #7	RADIO TRANSMITTER UNIT	1/1/1995	1/1/2017	22	0	
TSW-41	Kihei Pump Station #7	AUTO-TRANSFER SWITCH	1/1/1995	1/1/2017	22	0	
PMP-17	Kihei Pump Station #8	Pump #2	1/1/1995	1/1/2017	22	34000	
RTU-06	Kihei Pump Station #8	RADIO TRANSMITTER UNIT	1/1/1995	1/1/2017	22	0	
RTU-07	Kihei Pump Station #9	RADIO TRANSMITTER UNIT	1/1/1995	1/1/2017	22	0	
FRK-2	Vehicles/Portable Equip	Forklift	1/1/1997	1/1/2017	20	70000	
SCD-1	Kihei	SCADA /PLC device	3/10/2011	3/10/2017	6	333000	CIP - 2017, Under Construction
TSW-39	Kihei Pump Station #5	Auto Transfer Switch	9/1/1993	9/1/2017	24	10000	
PMP-39	Clarifier Area	No.1 Plant Drain Pump	1/1/1989	1/1/2018	29	16000	
PMP-46	Effluent Area	Effluent Pump #1	1/1/1977	1/1/2018	41	80000	Proposed CIP
PMP-47	Effluent Area	Effluent Pump #2	1/1/1977	1/1/2018	41	80000	Proposed CIP
PMP-48	Effluent Area	Effluent Pump #3	1/1/1977	1/1/2018	41	80000	Proposed CIP
PST-1	Kihei Pump Station #2	Building Pump Station #2	1/1/1977	1/1/2018	41	1500000	
TUG-2	Vehicles/Portable Equip	Yard TUG #2	1/1/1993	1/1/2018	25	30000	
CLS-38	Chlorine Area	Chlorine System	1/1/1994	1/1/2019	25	250000	
CLS-11	Chlorine Area	Chlorine Scrubber.	1/1/1994	1/1/2019	25	100000	
POS-6	Clarifier Area	Clarifier #3 Scum Pump	1/1/1994	1/1/2019	25	25000	
POS-7	Clarifier Area	Clarifier #4 Scump Pump	1/1/1994	1/1/2019	25	25000	
PST-11	Clarifier Area	In Plant Lift Station #2	1/1/1994	1/1/2019	25	250000	Proposed CIP
CNT-1	Dewatering Area	Centrifuge #1	1/1/1994	1/1/2019	25	600000	
CNT-2	Dewatering Area	Centrifuge #2	1/1/1994	1/1/2019	25	600000	
POS-2	Digester Area	No.2 Digested Sludge Pump	1/1/2001	1/1/2019	18	25000	
POS-3	Digester Area	No.3 Digester Sludge Pump	1/1/2001	1/1/2019	18	25000	
UVS-9	Effluent Area	UV Channel #3	1/1/2012	1/1/2019	7	400000	
TSW-36	Kihei Pump Station #2	Auto Transfer Switch	1/1/1995	1/1/2019	24	50000	
TSW-37	Kihei Pump Station #3	Auto Transfer Switch	1/1/1995	1/1/2019	24	10000	
TSW-40	Kihei Pump Station #6	AUTO-TRANSFER SWITCH	1/1/1995	1/1/2019	24	10000	
RTU-04	Kihei Pump Station #6	RADIO TRANSMITTER UNIT	1/1/1995	1/1/2019	24	15000	
1048	Vehicles/Portable Equip	1999 Ford Ranger P/U, Extended Cab	1/1/1999	1/1/2019	20	28000	
POS-5	Activated Sludge Area	Was Pump #5	1/1/2000	1/1/2020	20	15000	
FLW-12	Aeration Basin Area	Air Flow Meter (4)	1/1/2000	1/1/2020	20	16000	
PMP-51	Filter Area	Plant Utility Water Pump #1	1/1/1998	1/1/2020	22	0	CIP - 2017, Under Construction

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
PMP-52	Filter Area	Plant Utility Water Pump #2	1/1/1998	1/1/2020	22	0	CIP - 2017, Under Construction
PMP-53	Filter Area	Plant Utility Water Pump #3	1/1/1998	1/1/2020	22	0	CIP - 2017, Under Construction
ELV-14	Kihei Pump Station #9	Elevator	1/1/1989	1/1/2020	31	50000	
1141	Vehicles/Portable Equip	2002 Chevy 2500 Hd	1/1/2001	1/1/2020	19	30000	
POS-4	Activated Sludge Area	Was Pump #4	1/1/2000	1/1/2021	21	15000	
PMP-43	Clarifier Area	Clarifier #4, Ras Pump #6	1/1/1994	1/1/2021	27	25000	
POL-2	Dewatering Area	Polymer Feed System #2	1/1/2004	1/1/2021	17	21000	
TSW-2	Generator Building	Kihei Plant Transfer Switch	1/1/1994	1/1/2021	27	0	
RTU-09	Kihei Pump Station #16	RADIO TRANSMITTER UNIT	1/1/2015	1/1/2021	6	7000	
PMP-19	Kihei Pump Station #9	Pump #2	1/1/2007	1/1/2021		16000	
PMP-19	Kihei Pump Station #9	Pump #2	1/1/2007	1/1/2021	14	16000	
ATV-3	Vehicles/Portable Equip	All Terrain Vehicle	1/1/2007	1/1/2021	14	9000	
1336	Vehicles/Portable Equip	2007 Ford F350 Xi Super Duty Pickup	1/1/2006	1/1/2021	15	32000	
PNL-19	Filter Area	Filter Reject Water Pump Panel	8/15/2011	8/15/2021	10	0	
BLW-8	Aeration Basin Area	Aeration Blower #3 - B3703 300Hp	1/1/1994	1/1/2022	28	300000	
PMP-42	Clarifier Area	Clarifier #3, Ras Pump #5	1/1/2001	1/1/2022	21	25000	
TNS-23	Dewatering Area	Dewatering Transformer	1/1/1994	1/1/2022	28	20000	
POL-1	Dewatering Area	Polymer Feed System #1	1/1/2007	1/1/2022	15	21000	
BLW-1	Digester Area	No.1 Digester Jet Aeration Blower	1/1/1994	1/1/2022	28	200000	
COV-1	Effluent Area	Effluent Pond Cover	1/1/1994	1/1/2022	28	250000	Long Term CIP
PMP-37	Effluent Area	Reclaimed Water Trans. Pump No.2	1/1/2005	1/1/2022	17	0	
TNS-18	Generator Building	Kihei Plant Transformer	1/1/1994	1/1/2022	28	0	
SCR-1	Headworks Area	Screenings Compactor #2	1/1/2004	1/1/2022	18	100000	
TNS-20	Kihei Pump Station #8	Transformer	1/1/1995	1/1/2022	27	0	
PMP-18	Kihei Pump Station #9	Pump #1	1/1/2009	1/1/2022		16000	
PMP-18	Kihei Pump Station #9	Pump #1	1/1/2009	1/1/2022	13	16000	
PMP-168	Potable Water Booster Sys	Booster Pump#2	1/1/2005	1/1/2022	17	0	
PMP-38	Potable Water Booster Sys	Booster Pump #1	1/1/2005	1/1/2022	17	0	
1463	Vehicles/Portable Equip	2008 Ford F-350 Utility Truck	1/1/2008	1/1/2022	14	3200	
LAWN-4	Vehicles/Portable Equip	Riding Lawnmower - Diesel	8/1/2008	8/1/2022	14	13000	
1487	Vehicles/Portable Equip	2009 Ford Ranger	8/5/2009	8/5/2022	13	28000	
CEN-115	Kihei Pump Station #2	Chopper Pump #2	8/8/2011	8/8/2022	11	15000	

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
CEN-108	Kihei Pump Station #2	Chopper Pump #1	8/8/2011	8/8/2022	11	15000	
MCC-5	Activated Sludge Area	Old RAS Building Mcc	1/1/1977	1/1/2023	46	20000	
PNL-30	Clarifier Area	In Plant Lift Station #2 Control Panel	1/1/1994	1/1/2023	29	0	
PMP-36	Effluent Area	Reclaimed Water Trans. Pump No.1	1/1/2005	1/1/2023	18	0	
PNL-29	Effluent Area	Reclaim Water Panel	1/1/1994	1/1/2023	29	0	
SCR-4	Filter Area	Filter Reject Hydro Sieve #1	1/1/1998	1/1/2023	25	100000	
SCR-5	Filter Area	Filter Reject Hydro Sieve #2	1/1/1998	1/1/2023	25	100000	
FLW-156	Kihei Pump Station #2	FLOW	1/1/1995	1/1/2023	28	20000	
PMP-16	Kihei Pump Station #8	Pump #1	1/1/2008	1/1/2023	15	34000	
PMP-16	Kihei Pump Station #8	Pump #1	1/1/2008	1/1/2023		34000	
BLW-2	Digester Area	No.2 Digester Jet Aeration Blower	1/1/1994	1/1/2024	30	200000	
BLW-3	Digester Area	No.3 Digester Jet Aeration Blower	1/1/1994	1/1/2024	30	200000	
BLW-4	Digester Area	Agitation Blower No.1	1/1/1994	1/1/2024	30	200000	
BLW-5	Digester Area	Agitation Blower No.2	1/1/1994	1/1/2024	30	200000	
PNL-31	Digester Area	DS Pump Panel	1/1/1994	1/1/2024	30	7000	
BYP-95	Effluent Area	Effluent Piping and Valves	1/1/1977	1/1/2024	47	100000	
MCC-63	Effluent Area	Effluent Pump Station MCC	1/1/1978	1/1/2024	46	20000	
RTU-17	Generator Building	In Plant Rtu #8	1/1/1997	1/1/2024	27	0	
SCR-2	Headworks Area	Step Screen #1	1/1/2004	1/1/2024	20	250000	
PMP-23	Kihei Pump Station #16	Pump #1	1/1/2006	1/1/2024		24000	
PMP-24	Kihei Pump Station #16	Pump #2	1/1/2006	1/1/2024		24000	
GEN-48	Kihei Pump Station #2	Generator	1/1/1996	1/1/2024	28	25000	
GEN-1	Kihei Pump Station #3	Emergency Standby Generator	1/1/1995	1/1/2024	29	25000	
GEN-2	Kihei Pump Station #4	Emergency Standby Generator	1/1/1995	1/1/2024	29	30000	
GEN-3	Kihei Pump Station #5	Emergency Standby Generator	1/1/1995	1/1/2024	29	75000	
GEN-4	Kihei Pump Station #6	Emergency Standby Generator	1/1/1995	1/1/2024	29	50000	
GEN-5	Kihei Pump Station #7	Emergency Standby Generator	1/1/1995	1/1/2024	29	50000	
TRL-5	Vehicles/Portable Equip	Backhoe Trailer	3/20/2008	3/20/2024	16	0	
139T	Vehicles/Portable Equip	Trailer	3/27/2008	3/27/2024	16	0	
TRL-14	Vehicles/Portable Equip	2002 Small Ballhitch Trailer (Rail's)	7/21/2008	7/21/2024	16	0	
POS-18	Digester Area	No.1 Digested Sludge Pump	9/1/2013	9/1/2024	11	25000	
PMP-33	Activated Sludge Area	Ras Pump #3	1/1/2010	1/1/2025	15	25000	

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
PMP-41	Clarifier Area	Clarifier #3, Ras Pump #4	1/1/2007	1/1/2025	18	24000	
PMP-44	Clarifier Area	Clarifier #4, Ras Pump #7	1/1/2007	1/1/2025	18	24000	
FLW-14	Effluent Area	UV Flow Meter	1/1/2007	1/1/2025	18	10000	
TNK-47	Effluent Area	Flocculation Inlet Basin	1/1/1976	1/1/2025	49	100000	
SCR-13	Headworks Area	Screenings Compactor #1	1/1/2004	1/1/2025	21	100000	
BYP-1	Kihei Pump Station #2	Piping and Appurtenances	1/1/1990	1/1/2025	35	100000	
TSW-38	Kihei Pump Station #4	Auto Transfer Switch	1/1/2005	1/1/2025	20	0	
MCC-49	Kihei Pump Station #7	MOTOR CONTROL CENTER	1/1/1995	1/1/2025	30	40000	
ATV-2	Vehicles/Portable Equip	All Terrain Vehicle	1/1/2013	1/1/2025	12	1300	
PNL-1	Kihei Pump Station #16	Pump Controller	7/10/2007	7/10/2025	18	5000	
CEN-107	Activated Sludge Area	Was/Scum Pump #2	7/15/2011	7/15/2025	14	15000	
CEN-103	Activated Sludge Area	RAS Pump #1	12/1/2010	12/1/2025	15	25000	
CEN-106	Activated Sludge Area	RAS Pump #2	12/1/2010	12/1/2025	15	25000	
ABS-4	Aeration Basin Area	Continuous Aeration Basin #2 Internals	1/1/1994	1/1/2026	32	300000	
FLW-19	Effluent Area	No.3 Inj. Well Flow Meter	1/1/2009	1/1/2026	17	7500	
FLW-20	Effluent Area	No.4 Inj. Well Flow Meter	1/1/2009	1/1/2026	17	7500	
GEN-10	Generator Building	Kihei Plant Generator	1/1/1998	1/1/2026	28	200000	
SCR-3	Headworks Area	Step Screen #2	1/1/2004	1/1/2026	22	25000	
FLW-4	Kihei Pump Station #6	Flowmeters (4)	1/1/2008	1/1/2026	18	18000	
CEN-116	Kihei Pump Station #7	Pump #1	2/1/2012	2/1/2026	14	34000	
CEN-117	Kihei Pump Station #7	Pump #3	2/1/2012	2/1/2026	14	34000	
CEN-123	Kihei Pump Station #7	Pump #2	2/1/2012	2/1/2026	14	34000	
TSW-44	Kihei Pump Station #10	AUTO-TRANSFER SWITCH	3/19/2008	3/19/2026	18	8000	
TSW-43	Kihei Pump Station #9	AUTO-TRANSFER SWITCH	3/19/2008	3/19/2026	18	0	
SUB-73	Aeration Basin Area	Fab Scum Pump #1	11/16/2012	11/16/2026	14	15000	
SUB-74	Aeration Basin Area	Fab Scum Pump #2	11/16/2012	11/16/2026	14	15000	
ABS-1	Aeration Basin Area	Flexible Aeration Basin A	1/1/1994	1/1/2027	33	500000	
ABS-2	Aeration Basin Area	Flexible Aeration Basin B	1/1/1994	1/1/2027	33	500000	
ABS-3	Aeration Basin Area	Continuous Aeration Basin #1 Internals	1/1/1994	1/1/2027	33	300000	
CLR-1	Clarifier Area	Clarifier #3	1/1/1989	1/1/2027	38	500000	
GEN-7	Kihei Pump Station #9	Emergency Standby Generator	1/1/2003	1/1/2027	24	30000	
TSW-1	Kihei Pump Station #16	Auto Transfer Switch	1/10/2010	1/10/2027	17	7000	

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
SUB-78	Filter Area	In Plant LS Pump #1	3/1/2013	3/1/2027	14	25000	
SUB-79	Filter Area	In Plant LS Pump #2	3/1/2013	3/1/2027	14	25000	
BLW-7	Aeration Basin Area	Aeration Blower #2 - B3702 300Hp	1/1/1994	7/10/2027	33	300000	
BLW-9	Aeration Basin Area	Aeration Blower #4 - B3704 300Hp	1/1/1994	7/10/2027	33	300000	
BLW-10	Aeration Basin Area	Aeration Blower #5 - B3705	1/1/1994	7/10/2027	33	300000	
ACU-4	Chlorine Area	Chlorine Bld. Condensing Unit	1/1/1994	7/10/2027	33	0	
ACU-7	Chlorine Area	Chlorine Bld. Mcc Air Handler	1/1/1994	7/10/2027	33	0	
ACU-1	Kihei Pump Station #6	Air Conditioner	7/10/2007	7/10/2027	20	0	
ACU-2	Kihei Pump Station #8	Air Conditioner	7/10/2007	7/10/2027	20	0	
ACU-3	Ops Building/ Shops	Control Bld. Conf.Rm. Air Hand	7/10/2007	7/10/2027	20	0	
ACU-5	Ops Building/ Shops	Control Bld. Condensing Unit	7/10/2007	7/10/2027	20	0	
ACU-6	Ops Building/ Shops	Cont.Bld. Conf. Room	7/10/2007	7/10/2027	20	0	
ACU-8	Ops Building/ Shops	Control Bld. South Air Handler	7/10/2007	7/10/2027	20	0	
ACU-9	Ops Building/ Shops	Control Bld. North Air Handler	7/10/2007	7/10/2027	20	0	
ACU-18	Kihei Pump Station #10	Air Conditioner	7/25/2007	7/25/2027	20	0	
FLW-1	Kihei Pump Station #3	Flowmeter	11/1/2010	11/1/2027	17	5000	
PMP-175	Activated Sludge Area	Mixed Liquor Pump #1	1/1/2014	1/1/2028		30000	
PMP-176	Activated Sludge Area	Mixed Liquor Pump #2	1/1/2014	1/1/2028	14	30000	
FLW-152	Clarifier Area	RAS Flowmeter #1	1/1/2007	1/1/2028	21	5000	
SCR-17	Filter Area	Sand Filter Step Screen	1/1/2009	1/1/2028	19	250000	
FLW-5	Kihei Pump Station #7	Flowmeters	1/1/2011	1/1/2028	17	10000	
COM-2	Ops Building/ Shops	Service Air Comp. No.1	1/1/2008	1/1/2028	20	13000	
FLW-2	Kihei Pump Station #4	Flowmeter	5/18/2011	5/18/2028	17	5000	
CEN-124	Activated Sludge Area	Was/Scum Pump #1 (old Plt)	8/1/2014	8/1/2028	14	15000	
TNS-21	Kihei Pump Station #10	Transformer	11/22/2011	11/22/2028	17	25000	
TNS-19	Kihei Pump Station #6	Transformer	11/22/2011	11/22/2028	17	200000	
FLW-16	Effluent Area	No. 1 Inj. Well Flow Meter	1/1/2013	1/1/2029	16	7500	
PND-1	Effluent Area	Effluent Storage Pond	1/1/1975	1/1/2029	54	750000	
UVS-7	Effluent Area	UV Channel #1	1/1/2010	1/1/2029	19	400000	
SCR-18	Filter Area	Sand Filter WAP	1/1/2009	1/1/2029	20	0	
RTU-01	Kihei Pump Station #3	RADIO TRANSMITTER UNIT	1/1/2012	1/1/2029	17	10000	
PMP-9	Kihei Pump Station #6	Pump #1	1/1/2015	1/1/2029	14	48000	

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
PMP-10	Kihei Pump Station #6	Pump #2	1/1/2015	1/1/2029	14	48000	
PMP-11	Kihei Pump Station #6	Pump #3 MOD 6NHTBVC18DB	1/1/2015	1/1/2029	14	48000	
PMP-10	Kihei Pump Station #6	Pump #2	1/1/2015	1/1/2029		48000	
PMP-11	Kihei Pump Station #6	Pump #3 MOD 6NHTBVC18DB	1/1/2015	1/1/2029		48000	
PMP-9	Kihei Pump Station #6	Pump #1	1/1/2015	1/1/2029		48000	
BLD-4	Ops Building/ Shops	Maintenance Building	1/1/1977	1/1/2029	52	1000000	
TSW-42	Kihei Pump Station #8	AUTO-TRANSFER SWITCH	3/19/2008	3/19/2029	21	0	
SUB-84	Kihei Pump Station #10	Kih 10 Pump 1	4/29/2014	4/29/2029	15	62000	
SUB-85	Kihei Pump Station #10	Kih 10 Pump 2	4/29/2014	4/29/2029	15	62000	
SUB-86	Kihei Pump Station #10	Kih 10 Pump 3	4/29/2014	4/29/2029	15	62000	
FLW-151	Activated Sludge Area	WAS Flowmeter 6	1/1/2009	1/1/2030	21	5000	
UVS-1	Effluent Area	Ultra Violet Disinfection.	1/1/2012	1/1/2030	18	1000000	
UVS-8	Effluent Area	UV Channel #2	1/1/2012	1/1/2030	18	400000	
FLW-134	Headworks Area	Influent Flow meter	1/1/2013	1/1/2030	17	5000	
RTU-02	Kihei Pump Station #4	RADIO TRANSMITTER UNIT	1/1/2014	1/1/2030	16	10000	
FLW-3	Kihei Pump Station #5	Flowmeter	1/1/2014	1/1/2030	16	43000	
FLW-6	Kihei Pump Station #8	Flowmeter	1/1/2014	1/1/2030	16	5000	
PNL-26	Filter Area	Pump Controller	3/11/2013	3/11/2030	17	10000	
RTU-08	Kihei Pump Station #10	RADIO TRANSMITTER UNIT	4/1/2014	4/1/2030	16	15000	
BLW-38	Aeration Basin Area	Aeration Blower #1 Turblex	4/30/2010	4/30/2030	20	0	
FLW-8	Kihei Pump Station #10	12 Flow Meter	6/1/2014	6/1/2030	16	5000	
FLW-133	Kihei Pump Station #9	Flowmeter	8/1/2013	8/1/2030	17	9500	
COM-30	Filter Area	Filter Air Compressor #1	9/13/2010	9/13/2030	20	0	
CEN-125	Filter Area	Aquadisc #1 Pump 1	9/16/2015	9/16/2030	15	0	
CEN-126	Filter Area	Aquadisc #1 Pump 2	9/16/2015	9/16/2030	15	0	
CEN-127	Filter Area	Aquadisc #2 Pump 1	9/16/2015	9/16/2030	15	0	
CEN-128	Filter Area	Aquadisc #2 Pump 2	9/16/2015	9/16/2030	15	0	
CEN-129	Filter Area	Aquadisc #3 Pump 1	9/16/2015	9/16/2030	15	0	
CEN-130	Filter Area	Aquadisc #3 Pump 2	9/16/2015	9/16/2030	15	0	
FLW-138	Effluent Area	R-1 Flowmeter - 12	12/23/2014	12/23/2030	16	8000	
MCC-6	Ops Building/ Shops	Operations Bldg.Mcc	1/1/1977	1/1/2031	54	100000	
PNL-34	Kihei Pump Station #3	Pump Control Panel	1/1/2012	1/1/2032	20	15000	

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Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
PNL-35	Kihei Pump Station #4	Pump Control Panel	1/1/2012	1/1/2032	20	15000	
PST-8	Kihei Pump Station #9	Kihei Pump Station #9	1/1/1973	1/1/2032	59	50000	
PNL-20	Effluent Area	UV 3000 plus System Control Center	3/27/2012	3/27/2032	20	0	
TNK-38	Kihei Pump Station #10	Fuel Tank - 2000 Gal	7/25/1989	7/25/2032	43	15000	
BYP-10	Kihei Pump Station #16	Piping and Appurtenances	1/1/1989	1/1/2033	44	85000	
PST-3	Kihei Pump Station #4	Kihei Pump Station #4	1/1/1977	1/1/2033	56	1500000	
PNL-36	Kihei Pump Station #5	Pump Control Panel	1/1/2013	1/1/2033	20	15000	
RTU-03	Kihei Pump Station #5	RADIO TRANSMITTER UNIT	1/1/2013	1/1/2033	20	2200	
PNL-37	Kihei Pump Station #6	Pump Control Panel	1/1/2013	1/1/2033	20	25000	
PNL-38	Kihei Pump Station #7	Pump Control Panel	1/1/2013	1/1/2033	20	15000	
PNL-39	Kihei Pump Station #8	Pump Control Panel	1/1/2013	1/1/2033	20	15000	
BLW-40	Kihei Pump Station #6	BLOWER	12/10/2013	12/10/2033	20	0	
FLW-154	Clarifier Area	RAS Flowmeter #3	1/1/2014	1/1/2034	20	5000	
FLW-155	Clarifier Area	RAS Flowmeter #4	1/1/2014	1/1/2034	20	5000	
USS-5	Generator Building	Kihei High-Voltage Switchgear	1/1/1994	1/1/2034	40	500000	
PNL-32	Headworks Area	Step Screen Panel	1/1/2014	1/1/2034	20	23000	
BYP-88	Headworks Area	Headworks Area Piping and App	1/1/1998	1/1/2034	36	100000	
BYP-7	Kihei Pump Station #8	Piping and Appurtenances	1/1/1995	1/1/2034	39	150000	
BYP-8	Kihei Pump Station #9	Piping and Appurtenances	1/1/1995	1/1/2034	39	100000	
PNL-33	Kihei Pump Station #10	PS Control Panel	4/30/2014	4/30/2034	20	10000	
GEN-65	Kihei Pump Station #10	Kih 10 Generator	4/30/2014	4/30/2034	20	60000	
BYP-5	Kihei Pump Station #6	Piping and Appurtenances	7/10/1994	7/10/2034	40	225000	
TNK-39	Kihei Pump Station #2	Fuel Tank - 250 Gal	7/25/1994	7/25/2034	40	25000	
TNK-72	Aeration Basin Area	Aeration Basins 1 & 2 Structural	1/1/1975	1/1/2035	60	3000000	
CLR-3	Clarifier Area	Clarifier #1	1/1/2007	1/1/2035	28	500000	
FLW-153	Clarifier Area	RAS Flowmeter #2	1/1/2015	1/1/2035	20	5000	
PST-9	Kihei Pump Station #10	Pump Station #10 Building	1/1/1977	1/1/2035	58	1000000	
GEN-62	Kihei Pump Station #16	Emergency Standby Generator	1/1/2010	1/1/2035	25	20000	
PST-2	Kihei Pump Station #3	Kihei Pump Station #3	1/1/1977	1/1/2035	58	1500000	
PST-5	Kihei Pump Station #6	Kihei Pump Station #6	1/1/1977	1/1/2035	58	2500000	
PST-6	Kihei Pump Station #7	Kihei Pump Station #7	1/1/1977	1/1/2035	58	1500000	
PST-7	Kihei Pump Station #8	Kihei Pump Station #8	1/1/1977	1/1/2035	58	1500000	

Kihei RPM 2017

Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
FLW-166	Filter Area	Aquadisc #1 Mag Flowmeter	9/16/2015	9/16/2035	20	0	
FLW-167	Filter Area	Aquadisc #2 Mag Flowmeter	9/16/2015	9/16/2035	20	0	
FLW-168	Filter Area	Aquadisc #3 Mag Flowmeter	9/16/2015	9/16/2035	20	0	
BLD-17	Activated Sludge Area	Old RAS Building	1/1/1977	1/1/2036	59	300000	
CLR-4	Clarifier Area	Clarifier #2	1/1/2008	1/1/2036	28	500000	
TNK-73	Clarifier Area	Clarifier 1 & 2 Structural	1/1/1977	1/1/2036	59	1000000	
BLD-19	Effluent Area	Effluent PS Building	1/1/1978	1/1/2036	58	250000	
WEL-3	Effluent Area	No.1 Injection Well	1/1/1977	1/1/2036	59	500000	
PST-10	Kihei Pump Station #16	Pump Station #16 Building	1/1/1979	1/1/2036	57	250000	
BYP-2	Kihei Pump Station #3	Piping and Appurtenances	1/1/1995	1/1/2036	41	150000	
BYP-3	Kihei Pump Station #4	Piping and Appurtenances	1/1/1995	1/1/2036	41	150000	
BYP-4	Kihei Pump Station #5	Piping and Appurtenances	1/1/1995	1/1/2036	41	175000	
BYP-6	Kihei Pump Station #7	Piping and Appurtenances	1/1/1995	1/1/2036	41	150000	
BLD-22	Kihei Pump Station #8	Electrical Building	1/1/1977	1/1/2036	59	1000000	
OCU-25	Kihei Pump Station #6	PS 6 Odor Control Unit	12/4/2013	12/4/2036	23	27000	
DIG-1	Digester Area	Digester #1	1/1/2014	1/1/2037	23	50000	
DIG-2	Digester Area	Digester #2	1/1/2014	1/1/2037	23	50000	
PMP-54	Filter Area	Filter Reject Pump #1	1/1/2017	1/1/2037	20	25000	
PMP-55	Filter Area	Filter Reject Pump #2	1/1/2017	1/1/2037	20	25000	
BYP-85	Dewatering Area	Dewatering Area Piping and Appurtenances	1/1/1994	1/1/2038	44	0	
BYP-86	Digester Area	Digester Are Piping and Appurtenances	1/1/1994	1/1/2038	44	400000	
MCC-7	Chlorine Area	Chlorine Bld Mcc Panel	1/1/1994	1/1/2040	46	40000	
MCC-1	Dewatering Area	Dewatering Bldg. Mcc	1/1/1994	1/1/2040	46	60000	
MCC-3	Digester Area	Mcc Panel (Digester Bld)	1/1/1994	1/1/2040	46	30000	
TNK-74	Clarifier Area	Clarifier 3 & 4 Structural	1/1/1989	1/1/2041	52	1000000	
MCC-45	Kihei Pump Station #3	MOTOR CONTROL CENTER	1/1/1994	1/1/2041	47	16000	
MCC-46	Kihei Pump Station #4	MOTOR CONTROL CENTER	1/1/1995	1/1/2041	46	18000	
MCC-47	Kihei Pump Station #5	Motor Control Center	1/1/1995	1/1/2041	46	200000	
MCC-50	Kihei Pump Station #8	MCC	1/1/1995	1/1/2041	46	40000	
MCC-48	Kihei Pump Station #6	MOTOR CONTROL CENTER	3/19/1995	3/19/2041	46	50000	
MCC-4	Aeration Basin Area	New Blower Bldg. Mcc	1/1/1997	1/1/2042	45	60000	
WEL-4	Effluent Area	No.3 Injection Well	1/1/1992	1/1/2043	51	500000	

Kihei RPM 2017

Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
WEL-5	Effluent Area	No.4 Injection Well	1/1/1992	1/1/2043	51	500000	
MCC-2	Generator Building	Generator Bldg. Mcc	1/1/1998	1/1/2043	45	175000	
MCC-33	Generator Building	Mcc(Main)	1/1/1998	1/1/2043	45	20000	
BLD-1	Digester Area	Digester Blower Building	1/1/1994	1/1/2043	49	1000000	
TNK-40	Kihei Pump Station #3	250 gal Fuel Tank	7/25/1994	7/25/2043	49	26000	
TNK-42	Kihei Pump Station #5	Fuel Tank - 300 Gallon	7/25/1994	7/25/2043	49	15000	
TNK-43	Kihei Pump Station #6	Fuel Tank - 2000 Gal	7/25/1994	7/25/2043	49	25000	
TNK-45	Kihei Pump Station #8	Fuel Tank - 2000 Gal	7/25/1994	7/25/2043	49	15000	
TNK-41	Kihei Pump Station #4	Fuel Tank	7/25/1994	7/25/2043	49	20000	
TNK-71	Aeration Basin Area	FAB A & B Structural	1/1/1994	1/1/2044	50	2000000	
BLD-20	Chlorine Area	Chlorine Building	1/1/1994	1/1/2044	50	750000	
TNK-76	Digester Area	Digester #1 & 2 Structural	1/1/1994	1/1/2044	50	1500000	
TNK-11	Filter Area	Floc Basin No.1	1/1/1994	1/1/2044	50	500000	
TNK-12	Filter Area	Floc. Basin No.2	1/1/1994	1/1/2044	50	500000	
TNK-1	Generator Building	Diesel Storage Tank	1/1/1994	1/1/2044	50	60000	
TNK-5	Headworks Area	Headworks Bypass Channel	1/1/1994	1/1/2044	50	250000	
TNK-3	Headworks Area	Headworks Influent Channel #1	1/1/1994	1/1/2044	50	250000	
TNK-4	Headworks Area	Headworks Influent Channel #2	1/1/1994	1/1/2044	50	250000	
PST-4	Kihei Pump Station #5	Kihei Pump Station #5	1/1/1995	1/1/2044	49	2500000	
BLD-21	Kihei Pump Station #6	Electrical Building	1/1/1994	1/1/2044	50	2000000	
BLD-16	Ops Building/ Shops	Operations Building	1/1/1994	1/1/2044	50	2500000	
COV-2	Kihei Pump Station #10	Aluminum Access Hatch	4/21/2014	4/21/2044	30	7000	
FIL-23	Filter Area	AquaDisk Filter #1	8/5/2015	8/5/2045	30	0	
FIL-24	Filter Area	Aquadisc Filter #2	9/17/2015	9/17/2045	30	0	
FIL-25	Filter Area	Aquadisc Filter #3	9/17/2015	9/17/2045	30	0	
TNK-10	Activated Sludge Area	MLSS Aeration Channel	1/1/1998	1/1/2046	48	250000	
BLD-18	Aeration Basin Area	Blower Building	1/1/1998	1/1/2046	48	2500000	
BLD-3	Dewatering Area	Dewatering Building	1/1/1998	1/1/2046	48	2000000	
TNK-118	Effluent Area	UV Channels - Concrete Structure	1/1/1997	1/1/2046	49	0	
WEL-1	Effluent Area	Uv Wetwell	1/1/1997	1/1/2046	49	250000	
WEL-2	Filter Area	Filter Reject Wetwell	1/1/1997	1/1/2046	49	25000	
BLD-23	Filter Area	Compressor Building	1/1/1998	1/1/2046	48	1500000	

Kihei RPM 2017

Asset ID	Parent Location	Asset Name	Install Date	Replace Date	Calc Life	Cost	Comments
TNK-75	Filter Area	Sand Filters Structural	1/1/1997	1/1/2046	49	2000000	
BLD-2	Generator Building	Generator Building	1/1/1998	1/1/2046	48	750000	
TNK-120	Digester Area	Decant Mixing Tank	1/1/1994	1/1/2047	53	250000	
TNK-121	Headworks Area	Headworks Diversion Box	1/1/1994	1/1/2047	53	250000	
MCC-32	Dewatering Area	Solids Control Panel	1/1/1994	7/10/2049	55	75000	
TNK-6	Headworks Area	Headworks Step Screen Channel	1/1/2004	1/1/2050	46	250000	
BYP-72	Kihei Pump Station #10	PIPING AND APPURTENANCES	4/21/2014	4/21/2050	36	300000	
TNK-46	Effluent Area	Covered concrete storage tank 1.0 MG	8/16/2007	8/16/2053	46	600000	
MCC-30	Kihei Pump Station #10	MCC	1/1/2014	1/1/2054	40	60000	
BYP-82	Aeration Basin Area	CAB Piping And Appurtenances	4/13/2015	4/13/2055	40	300000	
BYP-83	Aeration Basin Area	FAB Piping And Appurtenances	4/13/2015	4/13/2055	40	300000	
BYP-84	Clarifier Area	Clarifier Area Piping and appurtenances	4/13/2015	4/13/2055	40	150000	
TNK-89	Generator Building	Gasoline Tank - 2000 Gallon	10/14/2010	10/14/2056	46	50000	
PST-12	Filter Area	In Plant Lift Station #1	3/1/2013	3/1/2058	45	250000	
TNK-116	Kihei Pump Station #10	Surge Tank	4/29/2014	4/29/2059	45	64000	
TNK-44	Kihei Pump Station #7	Fuel Tank - 250 Gal	1/1/2010	1/1/2060	50	15000	
BLD-43	Ops Building/ Shops	Oil containment shed	7/30/2010	7/30/2060	50	0	
TNK-117	Kihei Pump Station #10	Day Tank - 100 Gal	4/29/2014	4/29/2064	50	15000	
BLD-46	Ops Building/ Shops	20' Storage Container - Lab	4/13/2015	4/13/2065	50	0	
BLD-47	Ops Building/ Shops	20' Storage Container - Safety	4/13/2015	4/13/2065	50	0	
BLD-48	Ops Building/ Shops	20' Storage Container - Office	4/13/2015	4/13/2065	50	0	
MET-11	Generator Building	GASBOY	10/14/2010			20000	

Asset ID	Parent Location	Asset Name	Install Date	Replacement	Useful	Replacement	Comments
				Date	Life	Cost	
TNK-99	Clarifier Area	Septage Receivng Station	1/1/1985	1/1/2017	32	75000	oos - does not function
1086	Molokai Vehicles	2000 Ford Pickup 4X4	1/1/2000	1/1/2018	18	28000	
RBC-3	Headworks & RBC Area	Rotating Biological Contactor #3	1/1/1985	1/1/2019	34	250000	
RBC-1	Headworks & RBC Area	Rotating Biological Contactor #1	1/1/1985	1/1/2019	34	250000	
RBC-2	Headworks & RBC Area	Rotating Biological Contactor #2	1/1/1985	1/1/2019	34	250000	
LAWN-2	Molokai Vehicles	Riding Lawnmower 19 HP 42	1/1/2006	1/1/2019	13	7000	needs repairs/replacement
FLW-68	Molokai Injection Well Area	Flow Meter #1	7/27/2007	7/27/2019	12	5500	
FLW-70	Molokai Injection Well Area	Flow Meter #3	7/27/2007	7/27/2019	12	3000	
GER-30	Clarifier Area	Secondary Clarifier Bull Gear	1/1/1985	1/1/2020	35	50000	Bull gear not replaced w/ upgrade needs replacing
BYP-60	Clarifier Area	Clarifier Overflow Piping and Appurtenances	1/1/1985	1/1/2020	1	0	2 valves require replacement - needs to be scheduled
BLD-10	Kaunakakai Treatment Plant	Kaunakakai Treatment Plant	1/1/1985	1/1/2020	35	0	Plant at capacity- upgrade overdue, CIP - study
SUB-1	Molokai Effluent Area	Effluent Pump #1(Flygt)	1/1/1990	1/1/2020	30	4000	Needs new rails
SUB-2	Molokai Effluent Area	Effluent Pump #2(Flygt)	1/1/1990	1/1/2020	30	4000	Needs new rails
BYP-62	Molokai Effluent Area	Effluent Piping and Appurtenances	1/1/1970	1/1/2020	50	0	Valves frozen
SUB-60	Molokai Filter Area	Sand Filter Well Pump #1	1/1/1992	1/1/2020	28	4000	
SUB-61	Molokai Filter Area	Sand Filter Well Pump #2	1/1/1992	1/1/2020	28	4000	
SCR-10	Headworks & RBC Area	Influent Traveling Screen	1/1/1985	1/1/2021	36	100000	
GDW-13	Kaunakakai Treatment Plant	6 Godwin Pump	1/1/1995	1/1/2021	26	0	
1388	Molokai Vehicles	2007 Ford F250 Xtra cab	12/17/2007	12/17/2021	14	30000	
BLW-27	Headworks & RBC Area	Blower #2	1/1/1985	1/1/2022	37	6000	
1512	Molokai Vehicles	2009 Ford F-450 Crew Cab	2/3/2010	2/3/2022	12	38000	
SKD-5	Molokai Vehicles	Kubota loader	5/3/2010	5/3/2024	14	25000	
GDW-30	Kaunakakai Treatment Plant	3 Portable pump	1/1/2009	1/1/2025	16	3000	
BLD-45	Kaunakakai Treatment Plant	Office Trailer	1/1/1985	1/1/2027	42	50000	
FLW-69	Molokai Injection Well Area	Flow Meter #2	1/1/2009	1/1/2027	18	5500	
SUB-65	Pump Station - Molokai	Molokai PS Pump #1	6/1/2012	6/1/2027	15	20000	
SUB-66	Pump Station - Molokai	Molokai PS Pump #2	6/1/2012	6/1/2027	15	20000	
SUB-67	Pump Station - Molokai	Molokai PS Pump #3	6/1/2012	6/1/2027	15	20000	
ENG-1	Clarifier Area	Fire Pump	1/1/1985	7/10/2027	20	0	No longer required. Determination needs to be made when
GDW-7	Kaunakakai Treatment Plant	2 Portable Pump	1/1/2010	1/1/2028	18	2500	
GEN-50	Kaunakakai Treatment Plant	Emergency Generator	1/1/2004	1/1/2028	24	25000	
BLW-26	Headworks & RBC Area	Blower #1	1/1/2017	1/1/2029	12	6000	
WEL-10	Molokai Injection Well Area	Eff. Disposal Well #1	1/1/1969	1/1/2029	60	0	
FLW-41	Pump Station - Molokai	Flow Meter	1/1/2009	1/1/2029	20	5500	

Asset ID	Parent Location	Asset Name	Install Date	Replacement	Useful	Replacement	Comments
				Date	Life	Cost	
BYP-59	Molokai Filter Area	Sand Filter Bypass Piping and appurtenances	1/1/1992	1/1/2030	38	75000	
TSW-52	Pump Station - Molokai	AUTO-TRANSFER SWITCH	4/1/2013	4/1/2031	18	8000	
TNK-97	Clarifier Area	Scum Pit Tank	1/1/1985	1/1/2032	47	75000	
PND-12	Molokai Effluent Area	South Pond	1/1/1969	1/1/2032	63	0	
PND-11	Molokai Effluent Area	North Pond	1/1/1969	1/1/2032	63	0	
WEL-11	Molokai Injection Well Area	Eff. Disposal Well #2	1/1/1985	1/1/2032	47	0	
WEL-12	Molokai Injection Well Area	Eff. Disposal Well #3	1/1/1985	1/1/2032	47	0	
BYP-61	Molokai Filter Area	Sand Filter Well Piping and Appurtenances	1/1/1990	1/1/2033	43	75000	
PNL-17	Kaunakakai Treatment Plant	Main Control Center	1/1/1985	1/1/2035	50	50000	
TNK-98	Molokai Chlorine Area	Chlorine Contact Chamber	1/1/1970	1/1/2035	65	350000	
PST-29	Pump Station - Molokai	Kaunakakai Pump Station	1/1/1969	1/1/2035	66	0	
CLR-18	Clarifier Area	Secondary Clarifier Internals	1/1/2007	1/1/2036	29	275000	
GEN-60	Pump Station - Molokai	Molokai PS Generator	6/1/2012	6/1/2037	25	35000	
TNK-96	Clarifier Area	Secondary Clarifier Structural	1/1/1985	1/1/2040	55	750000	
BYP-69	Pump Station - Molokai	Piping and Appurtenances	6/1/2012	6/1/2052	40	100000	
BLD-44	Kaunakakai Treatment Plant	Lab Trailer	1/1/2009	1/1/2055	46	47000	
TNK-124	Kaunakakai Treatment Plant	300 gallon Diesel Tank	8/11/2015	8/11/2060	45	8000	
TNK-107	Pump Station - Molokai	250 Gallon Diesel Tank	6/1/2012	6/1/2062	50	8000	
MCC-77	Pump Station - Molokai	MOTOR CONTROL CENTER	4/1/2013	4/1/2063	50	10000	

County of Maui
Long Term Rehabilitation, Repair, and Replacement
20 Year Schedule

July 2014

PLAN:

The County of Maui's 20 Year Systematic Long Term Repair, Rehabilitation, and Replacement Schedule was approved by the EPA/DOH in February of 2001. The County agreed to maintain a 20 year plan horizon and update the report as necessary. Recently, the County has replaced its maintenance and planning software and improved our business process. This new database maintains a dynamic schedule that changes annually as new assessments and work orders are completed. In response to said changes, we have prepared the following revised 20 Year Plan.

APPROACH:

The County continues to utilize the New Zealand Approach to systematically determine when fixtures and equipment are approaching the end of its useful life.

ASSESSMENTS:

Every five years all major equipment at the County of Maui's Wastewater Reclamation Facilities and Pump Stations are field evaluated. Based on these evaluations, a modified useful life is calculated by applying the aforementioned algorithm to the base useful life. When any piece of equipment is within 6 years of its modified useful life, it will be field assessed on an annual basis and projects will be formulated for the rehabilitation or replacement of that and associated assets.

MODIFICATIONS:

In 2007, a new maintenance management program and associated software were implemented. The current maintenance management software shares a database with the asset management software, ensuring that all equipment is evaluated. In the process of implementation, new asset identification numbers were assigned to all assets. These new identification numbers have replaced those seen in previous reports.

In contrast to previous reports, dewatering and emergency generation equipment have been included with the plants in which they are located.

County of Maui
Long Term Rehabilitation, Repair, and Replacement
20 Year Schedule

EXECUTIVE SUMMARY

The County of Maui maintains a 20-year Long Term Rehabilitation, Repair and Replacement Schedule for its pump station and wastewater reclamation facility equipment.

This schedule was developed by first completing an inventory of all major and appropriate Privately Owned Treatment Works (POTW) fixtures and equipment at our facilities. The inventory database was then utilized by the County to make an estimate as to when a piece of equipment or fixture will come the end of its useful life.

The County utilizes the New Zealand approach in evaluating the life expectancy of its assets. This methodology was submitted previously to EPA for comment and was given approval. The New Zealand approach uses best practice and industry consensuses to make a practical and reasonable life expectancy estimate of any piece of equipment associated with Wastewater Facilities and pump stations.

The County will utilize its best management practice and experience when making decisions on when any piece of equipment will actually be replaced, rehabilitated, or repaired. This practice will be supported by the County's current preventive and corrective maintenance systems and database. The information contained in this report is current for FY2014. Future updates will be done on an as needed basis.

County of Maui
Long Term Rehabilitation, Repair, and Replacement
20 Year Schedule

LONG TERM SYSTEM REVIEW WORK PLAN

The Long Term System Review Work Plan is a document published in 1999 by The County of Maui Wastewater Reclamation Division and Brown and Caldwell Environmental and Engineering Consultants. It has been included because all results are based on this report, which our new Asset Management Program uses as a guideline.