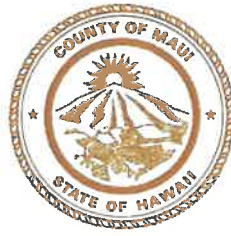


MICHAEL P. VICTORINO  
Mayor  
ERIC A. NAKAGAWA, P.E.  
Director  
ROBERT SCHMIDT  
Deputy Director  
MICHAEL KEHANO, P.E.  
Solid Waste Division  
SCOTT R. ROLLINS, P.E.  
Wastewater Reclamation Division  
TAMARA L. FARNSWORTH  
Environmental Protection &  
Sustainability Division



**COUNTY OF MAUI  
DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT**  
2145 KAOHU STREET, SUITE 102  
WAILUKU, MAUI, HAWAII 96793

June 7, 2022

Honorable Michael P. Victorino  
Mayor, County of Maui  
200 South High Street  
Wailuku, HI 96793

APPROVED FOR TRANSMITTAL

For Transmittal to:

Michael P. Victorino      6/9/22  
Mayor      Date

Honorable Yuki Lei K. Sugimura, Chair  
Infrastructure and Transportation Committee  
200 South High Street  
Wailuku, HI 96793

Dear Chair Sugimura:

**SUBJECT: WASTEWATER INFRASTRUCTURE NEEDS (IT-36)**

This is in response to your June 6, 2022 request regarding Kihei Wastewater Reclamation Facility Grit System Replacement Project.

- 1. Please explain how the Kihei Wastewater Reclamation Facility Grit System Replacement Project will impact labor expenses. Please provide a comparison of current labor expenses to projected labor expenses as a result of this new system.*

The Kihei Flexible Aeration Basins (FAB) follow the headworks area (screening and grit removal) in the wastewater treatment process. Because the Kihei grit system has not been operable for over a decade these basins are subject to all of the grit entering the plant and the accumulation is significant. Manpower costs are estimated to be approximately \$90,000 to complete a cleaning. In addition, since Collections does not typically have the vactor trucks available to be used for the grit removal, equipment needs to be contracted out with County staff being utilized to enter the FAB and push the grit by hand. This is done in the early morning on overtime, since the temperatures in Kihei pose a safety issue later in the day. Ideally, when staff and equipment are available, the FAB should be cleaned every 3 years to prevent equipment issues at a cost of approximately \$30,000.

The Conventional Aeration Basins (CAB) were cleaned approximately 3.5 years ago. There is less grit in the CAB's since most is collected in the upstream FAB. The cost to clean the CABs is estimated to be \$30,000 for each basin.

The new grit removal system is estimated to remove 78% of the grit which will extend the periods between FAB and CAB cleanings. The size and design of the system will allow grit to collect in a grit channel that would allow our Collection's Vector truck to remove it easily when Collections staff are available rather than using all maintenance staff on an overtime schedule and contract out equipment. Aeration basins will still need to be taken down for cleaning periodically, but the time between cleanings can be significantly increased or the amount of labor required will be reduced. This will limit the number of hours staff enters the basin for grit removal.

Below is an estimated comparison of cost for grit removal showing that the annualized cost could be reduced by approximately 80%.

Item	No.	Years Between Cleaning	Man hours	Cleaning Cost	Equipment cost	Annualized Cleaning Cost
<b>Current</b>						
Flexible Aeration Basins (FAB)	2	3	1,600	\$ 90,000	\$ 160,000	\$ 83,333
Conventional Aeration Basins (CAB)	2	7	800	\$ 30,000	\$ 80,000	\$ 15,714
						<b>\$ 99,048</b>
<b>Proposed</b>						
Flexible Aeration Basins (FAB)	2	10	500	\$ 30,000	\$ 60,000	\$ 9,000
Conventional Aeration Basins (CAB)	2	12	400	\$ 20,000	\$ 48,000	\$ 5,667
Grit Removal system	1	0.5	64	\$ 3,125	\$ 0	\$ 6,250
						<b>\$ 20,917</b>

2. *Over the last 10 years, how many work-related injuries have resulted from cleaning the Grit System? How will the new system impact employee safety?*

During past cleanings we have been fortunate as there have not been any injuries related to grit removal. Note that measures were taken to prevent injuries such as scheduling work for early morning on overtime to prevent heat related injuries and personal protective equipment and appropriate training was provided to staff entering the basins. The new system will minimize the hours required for staff to enter the basin for cleaning since the grit system will include a collection trench designed to be cleaned out with Collections' Vector truck while using water cannons/hoses to push the grit toward the Vector truck.

Honorable Yuki Lei K. Sugimura, Chair  
June 7, 2022 Page 3

Thank you for the opportunity to provide you with information on this matter. Should you have any questions or concerns, please forward them to the Department of Environmental Management via transmittal through the Office of the Mayor.

Sincerely,



Digitally signed by Eric A. Nakagawa, P.E.  
DN: cn=Eric A. Nakagawa, P.E., o=County  
of Maui, ou=Director of Environmental  
Management,  
email=eric.nakagawa@co.maui.hi.us,  
c=US  
Date: 2022.06.08 09:27:43 -10'00'

ERIC A. NAKAGAWA, P.E.  
Director of Environmental Management

cc: WWRD  
Richelle Thomson, Corporation Counsel

## IT Committee

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**From:** Michelle Santos <Michelle.Santos@co.maui.hi.us>  
**Sent:** Thursday, June 9, 2022 12:42 PM  
**To:** IT Committee  
**Cc:** Eric Nakagawa; Josiah Nishita; Kayla Ueshiro; Nadine Orikasa; Robert Schmidt; Sandy Baz; Stacy Takahashi; Tyson Miyake; Zeke Kalua  
**Subject:** MT#9702 Wastewater Infrastructure Needs  
**Attachments:** MT#9702-IT committee.pdf

**NOTE: PLEASE DO NOT FORWARD MY EMAIL TO ANYONE OUTSIDE OF THE COUNTY OF MAUI. YOU MAY CLICK ON THE ATTACHMENT ITSELF AND CREATE YOUR OWN EMAIL TO FORWARD THE DOCUMENT TO ANOTHER PERSON OUTSIDE OF THE COUNTY.**

*Michelle L. Santos*

### Office Operations Assistant

Office of the Mayor  
County of Maui  
200 S. High Street 9th Floor  
Wailuku, HI 96793  
phone: (808) 270-7855  
fax: (808) 270-7870