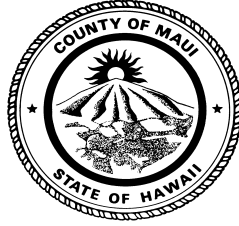


ALAN M. ARAKAWA
Mayor

KYLE K. GINOZA, P.E.
Director

MICHAEL M. MIYAMOTO
Deputy Director



MICHAEL RATTE
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

**COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT**
2200 MAIN STREET, SUITE 100
WAILUKU, MAUI, HAWAII 96793

September 10, 2015

Sina Pruder, Chief
SRF Clean Water Branch, Wastewater Division
919 Ala Moana Blvd., Room 309
Honolulu, HI 96814

Subject: Public Interest Waiver, Paia Wastewater Pump Station Force Main Replacement WW13-01, SRF Funded C150052-48

Dear Ms. Pruder:

The Wastewater Reclamation Division, Department of Environmental Management, County of Maui (CoM-WWRD), is seeking a Public Interest Waiver for County Project No. WW13-01, Paia Wastewater Pump Station Force Main Replacement, SRF Loan C150052-48. The County of Maui proposes to use (5) five combination Air Relief Valve manufactured by A.R.I. that does not comply with the American Iron and Steel Act.

A.R.I. valves are manufactured in Israel and are available in cast iron and stainless steel bodies, with one model available in nylon. The Nylon CARV is only available in the small body and not appropriate for many applications. For the Paia Force Main, the Nylon CARV's bodies are too small to handle the grease at the pump station.

GENERAL BACKGROUND:

Project Description

Paia Wastewater Pump Station Force Main Replacement project replaces 7400 feet of 10" sewer force main serving the Paia Wastewater Pump Station. The cost of the project is \$1,850,167.00 with 100% of the funding to be provided by SRF.

Geography

In order to understand the reason behind this waiver request, it is important to understand the challenges presented by the geographic characteristics of the County of Maui. The County includes three islands: Molokai, Lanai, and Maui, and maintains wastewater facilities on each island. Access to and between the islands is limited to boat or plane. The facilities are also affected by a harsh coastal environment, as most are located within a few hundred yards of the Pacific Ocean and are regularly subjected to salt air and blowing sand due to prevailing trade winds. The salt air rapidly accelerates corrosion of metallic equipment, piping/conduits, and valves, and blowing sand can accumulate and cause equipment failures due to clogging & gumming. The Paia Wastewater Pump Station is one such facility subject to these conditions, as both the pump station and its force main are located less than 300 feet from the ocean at their nearest point.

Combination Air Relief Valves (CARV's)

Air accumulation in wastewater lines is a common problem that reduces the efficiency of pumping operations, while vacuum pressure is the result of an abrupt stop in the pumping cycle, such as during a power outage. This momentary vacuum pressure is caused by the siphon effect and momentum of the fluid in the force main and can result in the collapse of the sewer force main if new air is not immediately introduced into the line. CARV's serve to address both these problems, by evacuating unwanted air buildup inside force mains, and by introducing air into the line when vacuum pressure develops.

CARV History and Standardization

Historically, CARV's were specified by CoM-WWRD on a per-project basis, and maintenance considerations were often an afterthought. As a result, CARV's from various vendors such as Vent-O-Mat, APCO, and Val-Matic could be found in use at different facilities around the County. This situation made maintaining a CARV spares inventory a difficult and costly task. In 2009, maintenance personnel from the three islands met and decided to systematically replace existing CARVs with valves from A.R.I. This decision was based on a review of past experiences and products available. The panel decided that because of their simplified design, ease of maintenance and availability, exclusive use of A.R.I. ARVs would be in the best interest of Maui County and the environment.

Success of Standardization

Since standardizing in 2009, CoM-WWRD has installed over 40 A.R.I. valves throughout its facilities, both existing and new. To maintain consistency, the County specifies the use of stainless steel. Cast iron is not acceptable in Hawaii due to the harsh coastal environment, in which cast iron is highly susceptible to corrosion.

By standardizing on A.R.I. valves, the County of Maui was able to reduce the number of spare valves and parts needed for maintenance, as well as minimizing the need to train personnel to maintain CARV's from various manufacturers. This last part is especially important as there are different groups of maintenance personnel on each of the three islands, which complicates the logistics of training. Furthermore, the County has experienced no valve failures since standardization.

WAIVER REQUEST DETAILS:

- **Description of the foreign and domestic construction materials**
The A.R.I. CARV has a stainless steel valve body with a stainless steel cover, and all internal metal parts are stainless steel.
- **Unit of measure**
The unit of measure is inches.
- **Quantity**
Five
- **Price**
\$6,000 to \$8,000 for a stainless steel A.R.I. combination air valve.
- **Time of delivery or availability**
4 to 6 weeks following approval of the waiver request.
- **Location of the construction project**
Paia, Maui, Hawaii
Hana Highway, Paia, Maui
- **Name and address of the proposed supplier**
Irrigation Systems Inc.
368 Lehuakona St.
Kahului, HI 96732
Tel: (808) 871-5459
- **A detailed justification for the use of foreign construction materials**

As previously mentioned, CoM-WWRD decided in 2009 to standardize on the use of A.R.I. CARV's, which are manufactured in Israel. CoM-WWRD wastewater now specifies A.R.I. CARV's for use at four County Wastewater Treatment Plants, as well as at over 30 Lift Stations and their associated force mains. The A.R.I. valve was selected for the Paia Wastewater Pump Station Force Main for the following reasons:

1. **STANDARDIZATION:** Since standardizing in 2009, CoM-WWRD, has installed over 40 A.R.I. CARV's which are presently in operation. The A.R.I. air valves have an excellent service record, with zero reported failures since standardization.
2. **STAFF TRAINING:** CoM-WWRD staff is proficient in the repair and maintenance of A.R.I. CARV's. Using multiple manufacturers' CARV's would require additional staff training for each manufacturer, since each manufacturer's valve design can vary significantly. By using on a single manufacturer's valves, CARV maintenance is simplified, and subsequently, troubleshooting and repair response times are also improved.

3. **INVENTORY COSTS:** Switching to an alternative manufacturer's valves would require additional spare valves and parts to be added to the County of Maui's extensive inventory of valves and parts. Currently the spares inventory is valued at approximately \$30,000.00.
4. **RELIABILITY:** The last incident of a sanitary sewer spill involving failure of a CARV was in 2007, prior to the standardization with A.R.I. valves. Failure was due to excessive corrosion of the valve body stemming from the aforementioned salt air environment present at most CoM-WWRD facilities. Since standardization, no further failures have occurred. Routine repair and replacement of worn parts has greatly improved with the interchangeability of spare valves and like parts. Due to the harsh sand and salt air conditions at most County wastewater facilities, it is important to have trained technicians that can quickly diagnose any problems and implement repairs to avert potential failures. Standardization has improved maintenance and repair response times, thus decreasing the possibility of future spills along the coastline.
5. **IMPROVED CUSTOMER ACCEPTANCE:** There have been issues with alternative manufacturers, indirectly related to their size and noisy operation. For example, Vent-o-Mat ARV's had been commonly used by CoM-WWRD prior to the first use of A.R.I. valves. However, due to their size, (approximately 36-inches installed), the valves are typically mounted above ground due to vertical clearance issues when installing inside manholes. At pump stations located in residential neighborhoods, this exposure is problematic as the valves sometimes produce a loud whistling noise during 24/7 operation. One such example is at Hawaiian Homes WWPS in Paukukalo, Maui, in which several neighbors have complained about the noise produced by the Vent-O-Mat CARV installed there. CoM-WWRD is currently looking to replace this valve with an A.R.I. model, as no such complaints have been reported with A.R.I. CARV's at similar service locations.

For the reasons stated above, the County of Maui feels that installing a valve other than A.R.I. brand would be inconsistent with the public interest. Therefore, the County of Maui requests a Public Interest Waiver to purchase (5) five A.R.I. valves for the Paia Wastewater Pump Station Force Main Replacement Project.

Respectfully Submitted,



Albert Hahn, P.E.
Project Manager
Wastewater Reclamation Division
County of Maui

Cc: Sue Liu, Environmental Engineer, Wastewater Branch, Hawaii Department of Health