

CITY OF YUBA CITY
STAFF REPORT

Date: August 20, 2019
To: Honorable Mayor & Members of the City Council
From: Public Works Department
Presentation by: Tim Bybee, Wastewater Collection Supervisor

Summary

Subject: Wastewater Collection Capital Acquisition Purchases

Recommendation: A. Approve the following capital acquisitions:
 1. Fats Oils Grease Control Device
 2. Acoustic Pipe Inspection Equipment

B. Award the purchase of one (1) Titus Twister Mixing Aerator to Titus of Prineville, OR in the amount of \$59,125, with the finding that it is in the best interest of the City.

C. Award the purchase of one (1) SL-RAT acoustic pipe inspection equipment to InfoSense, Inc. of Charlotte, NC in the amount of \$30,000, with the finding that it is in the best interest of the City.

D. Authorize the Finance Director to make a supplemental appropriation and related transfers from Account No. 981104-65501 (Recurring Collection Systems) to 8110-69201 (Wastewater Collection – Equipment) in the amount of \$100,000.

Fiscal Impact: \$100,000 – Account No. 8110-69201 (Wastewater Collection – Equipment)
 \$70,000 – Fats Oils Grease Control Device
 \$30,000 – Acoustic Pipe Inspection Equipment

Purpose:

To improve customer service and operational efficiency in the wastewater collection system.

Background:**Fats Oils Grease (FOG) Control Device:**

Wastewater lift stations are designed and implemented into wastewater collection systems to move sewage from a lower elevation to a higher elevation. Incidentally, the 17 lift stations also gather Fats, Oils, and Grease (FOG) buildup; FOG is a primary cause of hydrogen sulfide (H₂S) gas. The gas deteriorates the concrete structures and equipment and produces a rotten egg smell. Lift Station No. 2, located along Market Street behind the baseball fields, is currently the lift station which requires the most maintenance and produces the highest level of odor.

The Wastewater Collection Division currently vacuums out Lift Station No. 2 FOG once per week to keep the site's FOG buildup from damaging the lift station and the odor to a minimum. The vacuum cleaning requires three maintenance personnel, one service truck, and a vacuum-powered truck. This task is time consuming and has a significant fiscal burden in labor and equipment costs at an estimated \$40,559 per year. Additionally, Public Works utilizes synthetic charcoal to reduce odor, at approximately \$25,000 per year. While the combination of physical removal of FOG and chemical treatment has contained the majority of the station's issues, it is a significant investment of time and funds for the Department.

In 2018, Council approved the purchase of a Vapex odor control unit for Lift Station No. 10, which was previously the lift station with the highest odor and maintenance issues. Once the unit was installed, those issues were drastically reduced, prompting Public Works to investigate a solution for Lift Station No. 2, which has similar issues.

The Department has identified the Titus Twister Mixing Aerator as the recommended solution for Lift Station No. 2. This is the result of a pilot program comparing the Vapex system at Lift Station No. 10 with a Titus Twister unit rented at the Lift Station No. 2 site. This program was not concluded until after the deadline for the Fiscal Year 19/20 capital acquisition budget submissions. The Department would like to utilize this equipment and solve this significant maintenance issue well before the next budget cycle, using this fiscal year's programmed funds.

Acoustic Pipe Inspection Equipment:

The Wastewater Collection Division is charged with the inspection and maintenance of approximately 225 miles of sewer mains throughout the City. The Division currently utilizes a combination of a Closed Circuit Television (CCTV) truck and a Vac-Con vacuum truck to inspect the lines with a robotic camera and then clean them via "jetting," which is injecting high-pressure water into the pipes. While these methods are effective, the Department does not have a tool to avoid using these major pieces of equipment. A less labor- and time-intensive method would free up this valuable equipment for other assignments and provide a tool to both identify needed intervention and verify pipe condition for the City crew and customers.

The Department has identified the SL-RAT acoustic pipe inspection equipment as the recommended method. This new technology was identified and analyzed after the deadline for the Fiscal Year 19/20 capital acquisition budget submissions, but the Department would like to utilize this equipment and this current fiscal year's programmed funds to capture any equipment and cost savings throughout the year, rather than wait until the next budget cycle.

Analysis:

FOG Control Device:

A FOG control device provides three main benefits for the lift station: FOG prevention, odor control, and corrosion protection. The Public Works Department is recommending a Titus Twister Mixing Aerator. The Department acquired a demonstration unit from Titus to test at Lift Station No. 2, which has dramatically improved the FOG collection and odor that has plagued the station by efficiently breaking down FOG before buildup can cause odor or corrode the infrastructure. Please see Attachment 3 for before and after photographs.

The Titus Twister is proprietary ozone technology that differs from the Lift Station No. 10 Vapex unit in that it also treats under the surface of the water via agitation. The unit will handle the

physical cleaning and disinfection previously performed weekly by the Wastewater Collection Division, eliminates the need for the charcoal odor treatment, and only needs to be inspected every 30 days. Public Works has evaluated the system, reviewed its performance, and determined that the cost for the unit is reasonable, especially in light of the current cost of physical and chemical maintenance of Lift Station No. 2.

Acoustic Pipe Inspection Equipment:

The SL-RAT was recently developed by InfoSense, Inc. for acoustic inspection of sewer pipes, eliminating the need for the CCTV and Vac-Con equipment as the first method to inspect lines for potential blockage or damage. This proprietary technology inspects the surface of the pipes via soundwaves and produces a rating that will allow the Division to track the condition of the mains throughout the City. This system does not take the place of CCTV, but is a tool that will be used to determine whether the larger equipment is needed for further pipeline inspection. It is sanitary equipment which can also be used to inspect storm drains.

With only two maintenance personnel, one service truck, and half an hour or less, the SL-RAT can identify blockages, verify effectiveness of cleaning, or reassess areas of frequent concern. This may help to keep large equipment from unnecessary travel and usage. Avoiding physical entry into the mains with the major equipment also results in less damage to the concrete pipes and reduced continuous water usage. Overall, the reduced costs for labor and equipment usage and additional capabilities should quickly offset the cost of the acoustic inspection unit.

Fiscal Impact:

The total cost of the Titus Twister unit is estimated at \$70,000; \$59,125 for the FOG control device and \$10,875 for the materials and air conditioning unit required for the installation. The total cost of the SL-RAT acoustic pipe inspection equipment is \$30,000. Sufficient funding is available in Capital Improvement Program Account No. 981104 (Recurring Collection Systems) for these capital acquisitions, and transfer to the operating account 8110-69201 (Wastewater Collection – Equipment) will allow for appropriate tracking of the equipment's lifespan and depreciation.

These purchases are both proprietary equipment with unique specifications that cannot be found in comparable products, and thus may be sole sourced in accordance with City Purchasing Policy Section 8-8.4.2.

Alternatives:

1. Deny one or both of the capital acquisition purchases
2. Direct staff to request one or more of the acquisitions in the Fiscal Year 20/21 budget.

These alternatives will require the Public Works Department to continue the current maintenance and inspection protocols, which are less cost- and labor-efficient than the recommended purchases.

Recommendation:

- A. Approve the following capital acquisitions:
 1. Fats Oils Grease Control Device
 2. Acoustic Pipe Inspection Equipment

B. Award the purchase of one (1) Titus Twister to Titus of Prineville, OR in the amount of \$59,125, with the finding that it is in the best interest of the City.

C. Award the purchase of one (1) SL-RAT acoustic pipe inspection equipment to InfoSense, Inc. of Charlotte, NC in the amount of \$30,000, with the finding that it is in the best interest of the City.

D. Authorize the Finance Director to make a supplemental appropriation and related transfers from Account No. 981104-65501 (Recurring Collection Systems) to 8110-69201 (Wastewater Collection – Equipment) in the amount of \$100,000.

Attachments:

1. Resolution & Quotation – FOG Control Device
2. Resolution & Quotation – Acoustic Pipe Inspection Equipment
3. Lift Station No. 2 Images

Prepared by:

Submitted by:

/s/ Scarlett Harris

Scarlett Harris
Administrative Assistant

/s/ Diana Langley

Diana Langley
Interim City Manager

Reviewed by:

Department Head

BM

Finance

RB

City Attorney

SLC by email

ATTACHMENT 1

RESOLUTION NO. _____

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF YUBA CITY
AWARDING THE PURCHASE OF ONE (1) TITUS TWISTER MIXING
AERATOR TO TITUS OF PRINEVILLE, OR**

WHEREAS, the City of Yuba City desires to reduce Fats Oils and Grease buildup, odor, and corrosion in the wastewater collection lift station system; and,

WHEREAS, the City desires to purchase a Titus Twister Mixing Aerator to install at Lift Station No. 2; and,

WHEREAS, the Titus Twister Mixing Aerator is proprietary equipment produced by Titus of Prineville, OR; and,

WHEREAS, City Public Works Department staff has reviewed the equipment specifications and pricing and determined them to be fair, reasonable, and appropriate for the Lift Station No. 2 facility; and,

WHEREAS, the City may sole source the purchase of this equipment in accordance with Purchasing Policy Section 8-8.4.2, as it is proprietary equipment with unique specifications not found in comparable products; and,

WHEREAS, the City desires to award the purchase of one (1) Titus Twister Mixing Aerator to Titus of Prineville, OR in the amount of \$59,125.

NOW, THEREFORE, be it resolved by the City Council of Yuba City that the purchase of one (1) Titus Twister Mixing Aerator be awarded to Titus of Prineville, OR in the amount of \$59,125, with the finding that it is in the best interest of the City.

The foregoing resolution was duly and regularly introduced, passed, and adopted by the City Council of the City of Yuba City at a regular meeting thereof held on the 20th day of August 2019.

AYES:

NOES:

ABSENT:

Shon Harris, Mayor

ATTEST:

Patricia Buckland, City Clerk

APPROVED AS TO FORM
COUNSEL FOR YUBA CITY:

Shannon Chaffin, City Attorney
Aleshire & Wynder, LLP

Attachment(s):

Estimate #12319 from Titus

ATTACHMENT



1450 NW Gardner Road
 Prineville, OR 97754
 Phone: 541-389-1975
 Web Site: www.titusig.com



Estimate

Name / Address
City of Yuba City 1201 Civic Center Blvd Yuba City, CA 95993 Tim Bybee (530)822-4834

Date	Estimate #
7/15/2019	12319

FOB	Terms	Rep	Freight
Prineville OR	2% 10 Days or Net 30	LT	N/A

Item	Description	Qty	U/M	Rate	Total
TS40_3HP3_460V_Trailer	TITUS® TWISTER® Mixing Aerator with Custom TS-40 TS-40 Generates 40 g/hr (2-lbs/day) at 5% by wt. ozone production from 10 LPM oxygen Includes oxygen concentrator with compressor Up to 15 PSI delivery pressure (ozone generator cell rated up to 40 PSI) Up to 7% concentration at low flow rates (less than 1 LPM) Adjustable ozone output from 0-100% with potentiometer 1/4-in 316L SS Compression Ozone Output 2-Regenerative Blower: Pre-Wired 3-HP 460V Three Phase With Pressure Relief Valve Twister® Mixing Aerator head: 2-Standard 12" Diameter 36" tall (Can be swapped for 48" heads) Includes: all Internal piping 316 Stainless Steel Ballast 304 Stainless Steel Stainless steel cam-lock male fitting HDPE fixed shear angles *Blower Enclosure: Aluminum Cover Universal Wall/Floor Mount Powder Coated White Slide out Washable Air Filter Assembly *Contained in a 6'x 10' Cargo Trailer Maximum Water Depth 96" Made in the USA Connecting Stainless Steel 1.5" pipe supplied by others	1	Unit	62,878.65	62,878.65T
Discount	Sales Discount			-7,878.65	-7,878.65
Freight Expense	Delivered by Lewis Titus				0.00

* Quote Valid 30 days-US Dollars Thank you for the opportunity to provide a quote for you. Customer is Responsible for: 1. Providing Electrical Connections from blower to Power Supply 2. Crane services to be provided by contractor 3. Any and all Installation If freight cost is quoted, please note that they are only an estimate and may vary depending on quantity shipped and carrier/services selected.	Subtotal	\$55,000.00
	Sales Tax (7.5%)	\$4,125.00
	Total	\$59,125.00

ATTACHMENT 2

RESOLUTION NO. _____

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF YUBA CITY
AWARDING THE PURCHASE OF ONE (1) SL-RAT ACOUSTIC PIPE
INSPECTION EQUIPMENT TO INFOSENSE, INC. OF CHARLOTTE, NC**

WHEREAS, the City of Yuba City desires to efficiently and accurately inspect its wastewater collection system; and,

WHEREAS, the City desires to purchase an SL-RAT acoustic pipe inspector for the Wastewater Collection Division; and,

WHEREAS, the SL-RAT is proprietary equipment produced by InfoSense, Inc. of Charlotte, NC; and,

WHEREAS, City Public Works Department staff has reviewed the equipment specifications and pricing and determined them to be fair, reasonable, and appropriate for the wastewater collection infrastructure; and

WHEREAS, the City may sole source the purchase of this equipment in accordance with Purchasing Policy Section 8-8.4.2, as it is proprietary equipment with unique specifications not found in comparable products; and,

WHEREAS, the City desires to award the purchase of one (1) SL-RAT acoustic pipe inspection equipment to InfoSense, Inc. of Charlotte, NC in the amount of \$30,000.

NOW, THEREFORE, be it resolved by the City Council of Yuba City that the purchase of one (1) SL-RAT acoustic pipe inspection equipment be awarded to InfoSense, Inc. of Charlotte, NC in the amount of \$30,000, with the finding that it is in the best interest of the City.

The foregoing resolution was duly and regularly introduced, passed, and adopted by the City Council of the City of Yuba City at a regular meeting thereof held on the 20th day of August 2019.

AYES:

NOES:

ABSENT:

Shon Harris, Mayor

ATTEST:

Patricia Buckland, City Clerk

APPROVED AS TO FORM
COUNSEL FOR YUBA CITY:

Shannon Chaffin, City Attorney
Aleshire & Wynder, LLP

Attachment(s):

Sales Quote# 2019-0717P1-WW from InfoSense, Inc.
Sole Source Letter from InfoSense, Inc.

ATTACHMENTS

Sales Quote

Billing and Payment Address: 8116 South Tryon St, STE B3-203, Charlotte, NC 28273

Prepared for: Yuba City, CA	Contact Mr. Tim Bybee	Phone # (530) 822-4834	Fax #	Email tbybee@yubacity.net	
Price List:	US Price List				
InfoSense Contacts Walt Woodard	Job Title Global Sales Director	Phone # (877) 747-3245 x2	Fax # (704) 930-0145	Email wwoodard@infosense.com	
Terms and Conditions		<div style="border: 1px solid black; padding: 5px;"> All shipments are ARO, and subject to final verification upon receipt of order. All items will be shipped UPS ground unless otherwise specified. Please indicate whether partial shipment is acceptable. Shipping charges are Pre-Paid. An electronic copy of this quote may be provided for your convenience. InfoSense retains an original copy of all quotes and will consider the original to be the governing document. </div>			
Shipment Terms:	FOB Your Dock				
Credit Terms:	Net 30				
Effective From:	07/17/19				
Valid Through:	09/15/19				

Line#	Part Number	Description	Qty.	Unit of Measure	Price	Net Price	Extended Price
1		SL-RAT Standard Package*	1	ea	\$ 24,750.00	\$ 24,750.00	\$ 24,750.00
2		2nd Battery Charger (Optional)	1	ea	\$ 185.00	\$ 185.00	\$ 185.00
3		Safety Yellow Foam Frame Cushion (Optional)	1	set	\$ 220.00	\$ 220.00	\$ 220.00
4		1/2 Day Training (Optional)	1	ea	\$ 850.00	\$ 850.00	\$ 850.00
5		Shipping & Handling***	1	ea	\$ 425.00	\$ 425.00	\$ 425.00

*Price includes storage bag, one battery charger, one-year limited warranty, and license for the SL-DOG** web portal software valid for one year from the date of purchase.

**SL-DOG software consists of two components. A local client runs on a PC. It downloads the SL-RAT data from the device and is provided at no charge.

The second component is a cloudbased web portal set up for each customer at www.sl-dog.com that can assist with back office management of SL-RAT data after downloading. It includes the ability to edit measurement data, add manhole ID's, add comments, manage data quality, review productivity and export the SL-RAT data in a variety of formats including currently Google Earth kml and csv.

Post Year 1 - Optional Annual Support Agreement - \$3,000 per device - includes continued SL-DOG online software access, product servicing and repair discounts, up to 2 weeks of SL-RAT loaner use per year and continued product technical support.

Yearly subscription to the optional SL-DOG software alone is \$800/year for up to two devices - Post Year 1.

***Shipping & Handling/Insurance via UPS Ground Service

Excludes any additional applicable taxes, duties, or other government charges.

Comments: (All returned or exchanged items are subject to 25% restocking fee.)

Visit our website: www.infosense.com

WINNER 2012 WEF INNOVATIVE TECHNOLOGY AWARD

Grand Total **\$26,430.00**



InfoSense, Inc

Innovating Acoustic Inspection Technology™

877-PIPECHK (877-747-3245)
www.infosenseinc.com

8116 South Tryon Street
Suite B3-203
Charlotte, NC 28273 USA

July 17, 2019

To Whom It May Concern:

InfoSense, Incorporated in Charlotte, North Carolina is the sole manufacturer, supplier and distributor of the Sewer Line Rapid Assessment Tool or SL-RAT® and its supporting software, the Sewer Line Data Organizer or SL-DOG®. Duke's Root Control is a manufacturer's representative for the state of California. You may contact Matthew Scaglione via email at matthew@dukes.com.

The SL-RAT® line of acoustic pipe inspection equipment is patent-protected under U.S. Patent #8220484 and other pending patents. InfoSense manufactures the only product that uses Active Acoustic transmissions between a transmitter and a receiver in adjacent pipes to provide an aggregate blockage assessment.

The SL-RAT® makes use of the fact that water and air flow similarly within a pipe. Our proprietary algorithms exploit this fact to assess blockage within a pipe segment – typically within 3 minutes or less and with no flow contact.

Sincerely,

Alex Churchill
CEO
InfoSense, Inc.

Past Winner WEF Innovative Technology Award



ATTACHMENT 3

Before Installation of Titus Twister:



One Hour after Installation of Titus Twister:

