



FALLBROOK PUBLIC UTILITY DISTRICT
MEETING OF THE ENGINEERING AND OPERATIONS COMMITTEE

AGENDA

MONDAY, MARCH 25, 2019
10:00 A.M.

FALLBROOK PUBLIC UTILITY DISTRICT
990 E. MISSION RD., FALLBROOK, CA 92028
PHONE: (760) 728-1125

If you have a disability and need an accommodation to participate in the meeting, please call the Secretary at (760) 999-2704 for assistance so the necessary arrangements can be made.

Writings that are public records and are distributed during a public meeting are available for public inspection at the meeting if prepared by the local agency or a member of its legislative body or after the meeting if prepared by some other person.

I. PRELIMINARY FUNCTIONS

CALL TO ORDER / ROLL CALL

PUBLIC COMMENT

II. ACTION / DISCUSSION (ITEMS A - B)

A. ACQUISITION, IMPEMENTATION, AND SUPPORT FOR CITYWORKS ENTERPRISE ASSET MANAGEMENT SOFTWARE

B. DISTRICT FLEET AND HEAVY EQUIPMENT REPLACEMENT PROGRAM UPDATE

III. ADJOURNMENT OF MEETING

DECLARATION OF POSTING

I, Mary Lou West, Secretary of the Board of Directors of the Fallbrook Public Utility District, do hereby declare that I posted a copy of the foregoing agenda in the glass case at the entrance of the District Office located at 990 East Mission Road, Fallbrook, California, at least 72 hours prior to the meeting in accordance with Government Code § 54954.2.

I, Mary Lou West, further declare under penalty of perjury and under the laws of the State of California that the foregoing is true and correct.

March 21, 2019
Dated / Fallbrook, CA

Mary Lou West
Secretary, Board of Directors

M E M O

TO: Engineering and Operations Committee
FROM: Jason Cavender, Operations Manager
DATE: March 25, 2019
SUBJECT: Acquisition, Implementation, and Support for Cityworks Enterprise Asset Management software

Purpose

To discuss replacement of the District's current Computerized Maintenance Management (CMMS) with Cityworks, a more robust Enterprise Asset Management (EAM) system. To evaluate the District's need for outside consulting services for the implementation and on-going support for Cityworks.

Summary

The core function of EAM software is to help manage assets, schedule maintenance, and track and monitor service requests and work orders. This results in a reduction of maintenance costs, improved equipment performance, extended life of cycle of critical assets, and more efficient customer service response. EAM is a critical tool commonly used by utilities to track costs and resources to help improve overall efficiency. Other potential uses for EAM include:

1. Scheduling and planning
2. Asset history recording
3. Provide data for analysis
4. Support Key Performance Indicators (KPIs)
5. Inventory/warehouse management
6. Labor tracking
7. Budgeting

The District currently utilizes Maintenance Connection as its primary preventative maintenance system. Although Maintenance Connection has adequately served its purpose over the last five years, the software is not up to date, has limited functionality, and is mostly paper based. With the recent rehabilitation of the Fallbrook Water Reclamation Plant, and the addition of the Santa Margarita Treatment Plant (SMTP) schedule for 2020, staff has determined that our current processes for maintenance management are labor intensive and inefficient. Additionally, the existing software package does not offer expanded functionality, limiting its use to simple maintenance activities. To more effectively perform, monitor, and track maintenance activities, and to improve our current service request process the District requires a more robust EAM system.

Throughout 2018 District staff has been assessing the need to upgrade to a more powerful and efficient system. As part of the District’s evaluation process, staff has worked closely with Valley Center Municipal Water District (VCMWD) to assess our customer service response and asset management needs. VCMWDs maintenance management process is currently paper based, requiring labor intensive documentation and reporting. Because VCMWD and the District are of similar size, and largely operate using similar process and computer applications (GIS, Springbrook, etc.), our EAM and integration needs are very similar. Since November of 2018 both agencies have looked at how EAM is used at other agencies, including Vallecitos MWD, Rainbow MWD, East Valley MWD, and the City of Escondido. The District also had discussions with agencies that have both Springbrook and Cityworks and the system can be integrated when necessary, but it requires some programming to facilitate the integration. A summary of the limitations of the current system compared to the benefits of completing an upgrade to the EAM system is shown in Table 1.

Current Maintenance System	Modern EAM System
Assets stored in a computer database, but work orders are 100% paper based. Requires hand written entry by field crews, and manual entry into database.	Fully computer based. All functions are paperless. Greatly increases work order processing time.
Complex and limited computer interface with no mobile application. Requires significant staff time to update and maintain.	More user friendly interface. Provide overall efficiency improvements once implemented. Reduce staff time associated with managing and updating system.
No integration with other system such as GIS and Springbrook.	Integration with GIS and other software systems. Reduce duplication of data entry.
Maintains records of planned maintenance and documents that maintenance has been performed, but very limited reporting options. Does not provide significant efficiency improvements.	Ability to reduce manual process and improve efficiency of overall operation. Reduce time in receiving, distributing and schedule work orders. Provides detailed reports of maintenance activity and identifies deficiencies.
Low initial cost.	Higher initial cost to implement. Ongoing costs offset by increased efficiency.

Table 1 – Comparison Current Maintenance System Cityworks EAM system.

Staff had previously evaluated support from a consultant to help make the EAM product selection. In lieu of this approach staff has worked jointly with VCMWD to make the initial product selection and to evaluate the necessary elements for implementation and support. Through this process both agencies have determined that Cityworks offers the best combination of functionality, user friendliness, and cost. As a result of our mutual effort, both VCMWD and the District have been offered discounted pricing for year one and two. A cost summary and comparison are shown in table 2.

To ensure a timely transition, it is critical that implementation is thorough, efficient, and follows industry best management practices. To do this staff recommends that we use an outside consultant with specialization in this area. An RFP was issued for this service and a selection panel consisting of Todd Jester, GIS Specialist, and Jason Cavender, Operations Manager interviewed three firms. Two firms were determined to be qualified and after a comprehensive qualifications based review of the proposals and interview, the selection committee members recommended award to Black and Veatch.

Black and Veatch has proposed a four month window for initial implementation in the following overlapping phases:

1. Data collection and business process review – 10 weeks
2. Design and configure – 7 weeks
3. Final implementation and deployment – 12 weeks

The District will focus on developing and implementing several key aspects of Cityworks, with an overall emphasis on streamlining processes and improving efficiency. Staff recommends prioritizing the following items:

- Priority 1 – Year 1 – Work Orders for preventative maintenance
- Priority 2 – Year 1 – Deploy mobile devices for Work Order and Service Request response
- Priority 3 – Year 1 & 2 – Service Requests for customer service response
- Priority 4 – Year 2 – Service Requests for internal work tasks
- Priority 5 – Year 2 – Develop reports to track Key Performance Indicators (KPI)

Implementation in these areas will replace the existing CMMS system and will add additional functionality that will cover a large part of the field work activities. These areas can also be done with limited integration with Springbrook to help limit additional programming.

Cityworks EAM Software	
Annual Cost	Yr. 1 - \$15,000 (discounted) Yr. 2 - \$18,000 (discounted) Yr. 3 - \$20,000 (standard)
Black & Veatch Implementation and Support	
Data Collection	\$18,185
Design & Implementation	\$61,730
As Needed Support	Yr. 1 – \$25,000 Yr. 2 – \$25,000
Implementation Total	\$129,915
Additional Hardware	
Mobile Devices	Yr. 1 (3) – \$1,500 Yr. 2 (3) – \$1,500

GIS Server Upgrade	\$2,500
Hardware Total	\$5,500
Additional 3rd Party Programming	
Optional	\$50,000

Table 2 – Cost summary and comparison

Recommended Action

That the Committee support the recommendations to acquire Cityworks, and to award professional services for EAM implementation and on-going support to Black and Veatch.

Cityworks Enterprise Asset Management (EAM)

Potential Cityworks Functions

- **Work Orders - Planned and Reactive**
- **Service Requests**
- **Data Analysis/KPI Tracking**
- Backflow Management
- Requisitions & Purchasing
- Warehouse/Inventory Management
- Fleet Management
- Backflow Management
- Budgeting

Development Priorities & Schedule

The District is focused on developing these key components:

Priority 1 – Year 1 – Work Orders for preventative maintenance

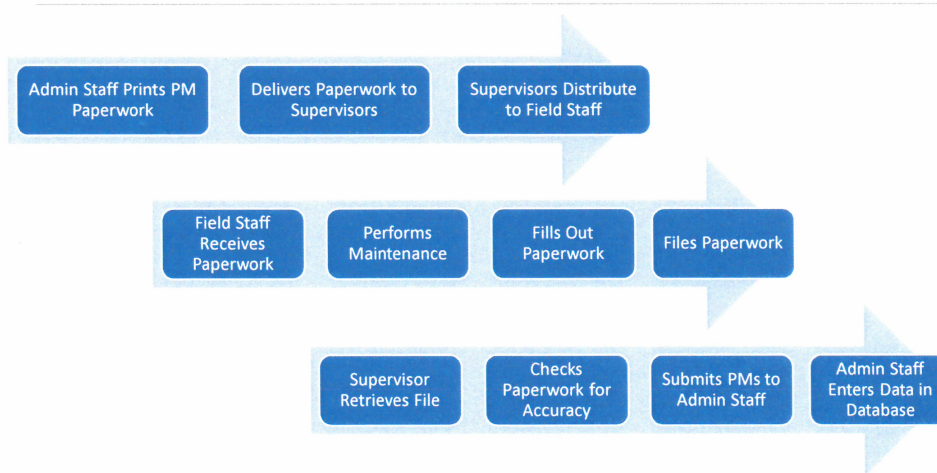
Priority 2 – Year 1 – Deploy mobile devices for Work Order and Service Request response

Priority 3 – Year 1 & 2 – Service Requests for customer service response

Priority 4 – Year 2 – Service Requests for internal work tasks

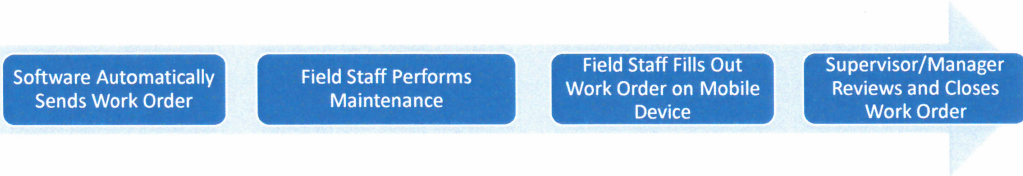
Priority 5 – Year 2 – Develop reports to track Key Performance Indicators (KPI)

Current Process PM Work Orders



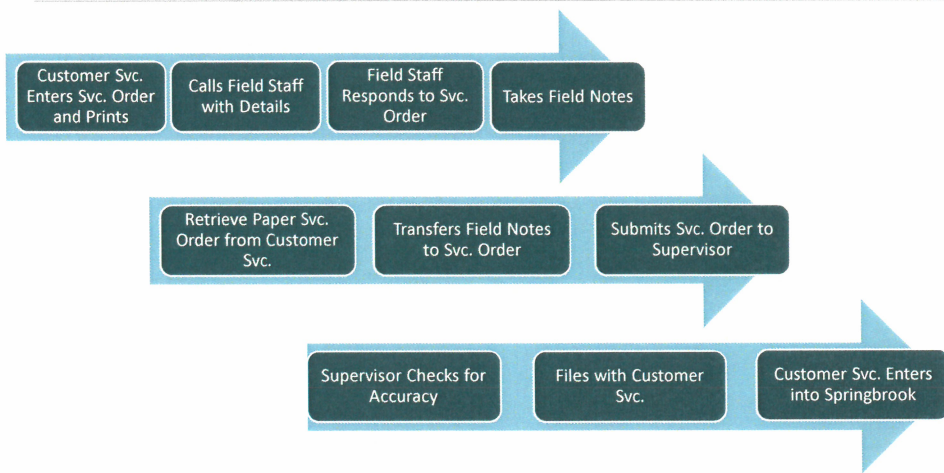
EAM Computerized Process

PM Work Order

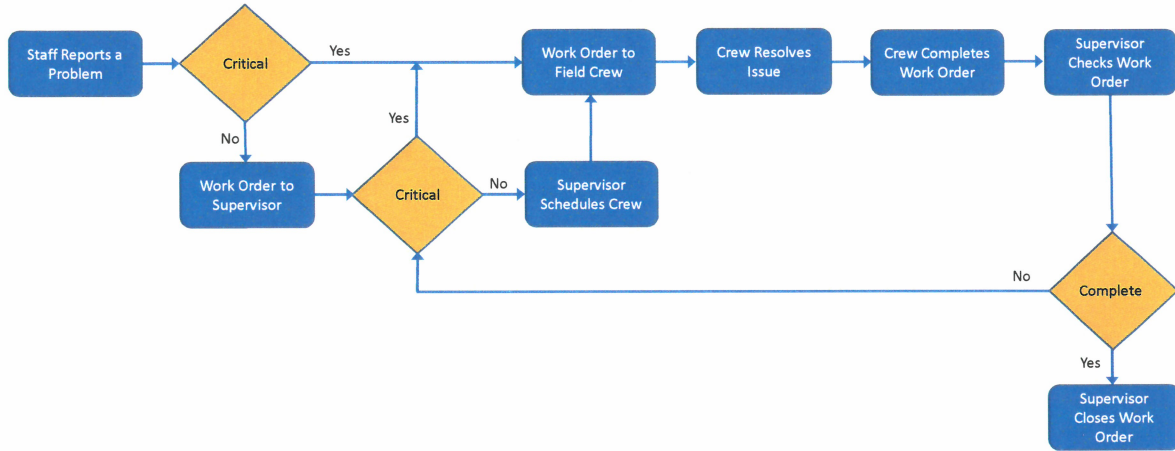


Current Process

Service Orders



EAM Service Order Process Customer Complaint



Timeline – Initial Implementation

Year 1	Year 2
Work Orders for Preventative Maintenance	
Deploy Mobile Devices	
Service Requests for Customer Service Response	
	Service Requests for Internal Work Tasks
	Report Development/KPI Tracking

Compatibility With Existing Software

- GIS (mapping/asset database)
 - High Priority. Cityworks is a GIS-centric asset management system and is 100% compatible with FPUds existing software.
- Springbrook
 - Limited integration - High Priority. Requires Springbrook to perform some additional programming.
 - 100% integration - Low Priority. Requires Springbrook to perform extensive programming.
- Backtrack (cross connection/backflow)
 - Low priority. Integration requires Backtrack to perform additional programming. Existing software meets the District's needs.

Cost

Cityworks EAM Software	
Annual Cost	Yr. 1 - \$15,000 (discounted) Yr. 2 - \$18,000 (discounted) Yr. 3 - \$20,000 (standard)
Black & Veatch Implementation and Support	
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Additional Hardware	
Mobile Devices	Yr. 1 (3) - \$1,500 Yr. 2 (3) - \$1,500
GIS Server Upgrade	\$2,500
Hardware Total	\$5,500
Additional 3 rd Party Programming	
Optional	\$50,000

Year 1 - \$123,915

Year 2 - \$44,500

Year 3+ - \$20,000

QUESTIONS?



M E M O

TO: Engineering and Operations Committee
FROM: Todd Lange, System Service/Shop Supervisor *TL*
DATE: March 25, 2019
SUBJECT: District Fleet and Heavy Equipment Replacement Program Update

Purpose

To present the Engineering & Operations Committee with a program for maintaining a reliable District fleet and heavy construction and maintenance equipment to maintain the current level of service for the District's water and wastewater infrastructure and request replacement of three on-road fleet vehicles in accordance with the approved budget.

Summary

As part of the District's asset management plan to maintain reliable infrastructure, it is important to have reliable fleet and heavy construction and maintenance equipment to support the replacement program and operational needs. In addition, the California Air Resources (CARB) has implemented regulations to reduce diesel emissions that require the District to reduce overall emissions in the existing heavy equipment fleet.

District off Road Heavy Equipment Replacement Plan

The District's Off Road Heavy Equipment Replacement Plan is intended to reduce maintenance costs of aging off-road fleet vehicles, increase utilization, increase expected life cycle, and obtain emission reductions by replacing old, high polluting mobile equipment with newer, cleaner mobile equipment to be in compliance with the CARB regulations. Low use heavy equipment will be designated as low use or retired, but it is critical for the District to have specific core equipment including backhoe's, and loaders to be able to immediately respond to repair substantial leaks and breaks and also maintain suitable productivity in valve and pipe replacement. In order to minimize costs for purchasing new heavy equipment under the new regulations, existing lower use higher pollutant loading, district heavy equipment will be retired and replaced by utilizing short term rentals.

The CARB required all vehicles to be reported using the Diesel Off-Road Online Reporting System (DOORS) and restricts the adding of older vehicles into fleets starting January 1, 2014.

In order to meet compliance schedules outlined under the CARB regulations and maintain a reliable heavy equipment fleet, staff recommends the following schedule for retirement and replacement of heavy equipment.

Year	EQ #	HP	Make	Model	Type	Status	Year
1990	1315	128	CASE	LOADER	MDL 621	Replace	2019-2020
2017	1345	101	VOLVO	LOADER	L45H	Meets	2038-2039
1987	1324	130	DRESSER	CRANE	150-FA 15-Ton	Replace	2020-2021
2018	1308	33	KUBOTA	TRACTOR	L 3301	Meets	2037-2038
2001	1321	75	CASE	BACKHOE	580M EXT	Replace	2019-2020
2010	1310	84	CASE	SKIPLOADER	570 MXT	Replace	2026-2027
2010	1302	84	CASE	BACKHOE	580M EXT	Meets	2024-2025
2014	1305	85	CASE	BACKHOE	580 N	Meets	2028-2029
2004	1322	85	CASE	SKID STEER	70-XT	Meets	2022-2023

If the equipment identified is not replaced, it will need to be placed in low use or removed from service or else the District will not meet the CARB requirements. Without sufficient heavy equipment, the District will not be able to meet operational and construction needs.

The overall proposed level of equipment for the Off-road heavy equipment fleet and utilization is outlined below.

Equipment	Number	Use
Backhoe	3	Primary Equipment. Used for potable water and wastewater repairs and valve replacement
Loader	2	1 for Water Reclamation Plant for bio solids loading and misc. equipment replacement. 1 for leak repair/collections.
Mower	1	Primarily for tanks sites/facilities maintenance/clearing
Crane	1	Shared – primarily for pipeline construction crew. Also for maintenance of pump stations and valve replacement.
Skip loader	1	Shared – primarily for right of way maintenance.
Skid Steer	1	Primarily meter service installation and small site projects

The District has maintained sufficient heavy equipment to be able to provide a high level of service and effectively respond to multiple construction needs with multiple crews at any time. The typical approach used by the District is to maintain one construction crew to complete valve replacements, one crew from meter services to respond to leaks and one crew to support sewer collections systems repairs.

District Fleet Replacement Plan

- The District on road fleet includes equipment used for operations, maintenance and construction.
- The District currently has 46 vehicles in the on road equipment fleet (see attachment 1).
- Transportation vehicles are scheduled for replacement every 14 yrs.
- Crew trucks are scheduled for replacement every 13 years.

Recommended Action

No action is needed. Update on the Heavy Equipment and on road equipment fleet replacement program

EQPT NO	Year	MAKE	MODEL	Eqpt #	Total Points	Year to Replace
1028	1999	FORD	F-150	1028	35.4	NO
1124	2004	FORD	F-350	1124	33.8	2019-2020 CREW
1015	1997	FORD	F-150	1015	32.7	2019-2020
1024	2000	CHEVROLET	1500	1024	32.4	NO
1122	1996	CHEVROLET	3500	1122	32.3	Low Use
1027	2004	FORD	RANGER	1027	32	2019-2020
1103	2005	CHEVROLET	3500	1103	30.3	2018-2019
1054	2006	CHEVROLET	2500	1054	30	2020-2021 CREW
1012	2003	FORD	F-150	1012	29.9	2020-2021
1004	2006	CHEVROLET	COLORADO	1004	29.4	2020-2021
1101	2002	CHEVROLET	2500	1101	29.2	2022-2023 CREW
1113	2003	FORD	F-550	1113	27.9	2024-2025 CREW
1110	2000	FORD	F-350	1110	27.2	Low Use
1008	2006	CHEVROLET	COLORADO	1008	25.8	2022-2023
1125	2008	FORD	F-250	1125	25.4	2026-2027 CREW
1037	2010	FORD	RANGER	1037	25.2	2022-2023
1034	2008	FORD	F-150	1034	24.5	2024-2025
1141	2006	INTERNATION	DT-570	1141	22.6	NOT REPLACING
1036	2008	FORD	F-150	1036	22	2026-2027
1031	2004	CHEVROLET	3500	1031	20.6	2026-2027 CREW
1116	2007	CHEVROLET	3500	1116	19.5	Low Use
1009	2010	FORD	F-150	1009	18.2	
1127	2010	FREIGHTLINE	M-2106	1127	18.1	
1035	2010	FORD	RANGER	1035	17.8	
1021	2010	FORD	RANGER	1021	17.7	
1033	2008	FORD	F-150	1033	17.5	
1128	2009	FREIGHTLINE	M-2106	1128	17.4	
1102	2010	CHEVROLET	2500	1102	16.6	
1104	2009	FORD	F-450	1104	16.3	
1100	2008	DODGE	SPRINTER	1100	15.5	
1129	2012	HINO	266A	1129	11.6	
1014	2015	FORD	F-150	1014	10.8	
1010	2015	FORD	F-150	1010	7	
1105	2015	FORD	F-450	1105	7	
1038	2016	FORD	F 150	1038	6	
1039	2016	FORD	F 150	1039	6	
1042	2016	FORD	F 150	1042	6	
1043	2016	FORD	F 150	1043	6	
1161	2016	KENWORTH	T4	1161	6	

Point Ranges		
Under 20 points	Condition I: Excellent	2018-2019
20 to 23 points	Condition II: Good	2019-2020
24 to 30 points	Condition III: Qualifies for replacement	2020-2021
31 or more points	Condition IV: Needs immediate consideration	2022-2023
		2024-2025
		2026-2027

WATER DEPARTMENT
Capital Budget
 Project Detail

Project Title: Heavy Equipment and Fleet

Description: This program provides for the purchase of field equipment and fleet vehicles to maintain the fleet at the current level to accomplish the objectives of this and projected budget years. The District has developed a fleet replacement plan to maintain a serviceable, reliable fleet in the most economical manner. For field equipment replacement is required to meet CA air quality requirements (DOORS) as Tier 0, I and II equipment must be replaced to comply with Tier IV emission requirements. Currently we meet January 1, 2021 compliance date.

<u>Title</u>	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
<u>Transportation</u>								
Mid Size/Full-size Truck	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
<u>Crew Support</u>								
1 Ton Cab & Utility Body	90,000	100,000	100,000	100,000	100,000	100,000	100,000	200,000
TV Van-Collections				85,000				
<u>Field Equipment</u>								
Misc. Field Equipment	10,000	12,500	15,000	15,000	15,000	15,000	15,000	15,000
Loaders	180,000			180,000				
Water Truck		80,000						
Trailer			60,000					
Crane		250,000						
Backhoe	130,000				150,000			
Skid Steer/Skip Loader				100,000				85,000
Dump Truck			150,000		150,000			150,000
Vactor						350,000	350,000	
Light Tower	10,000							
Street/Yard Sweeper	60,000							
Hydraulic Cut Off Saw		20,000						
<u>Safety Equipment</u>								
Safety Equipment	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
<u>Misc. Vehicles</u>								
Major Overhaul / Fleet optimization	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Total	583,500	566,000	428,500	583,500	518,500	568,500	568,500	553,500