Agenda

Sacramento Suburban Water District

Facilities and Operations Committee

3701 Marconi Avenue, Suite 100
Sacramento, CA 95821

Thursday, July 27, 2017
4:00 p.m.

Public documents relating to any open session item listed on this agenda that are distributed to the Committee members less than 72 hours before the meeting are available for public inspection in the customer service area of the District's Administrative Office at the address listed above.

The public may address the Committee concerning any item of interest. Persons who wish to comment on either agenda or non-agenda items should fill out a Comment Card and give it to the General Manager. The Committee Chair will call for comments at the appropriate time. Comments will be subject to reasonable time limits (3 minutes).

In compliance with the Americans with Disabilities Act, if you have a disability, and you need a disability-related modification or accommodation to participate in this meeting, then please contact Sacramento Suburban Water District Human Resources at (916)679-3972. Requests must be made as early as possible and at least one-full business day before the start of the meeting.

Call to Order

Roll Call

Public Comment
This is an opportunity for the public to comment on non-agenda items within the subject matter jurisdiction of the Committee. Comments are limited to 3 minutes.

Consent Items
The committee will be asked to approve all Consent Items at one time without discussion. Consent Items are expected to be routine and non-controversial. If any member of the Committee, staff or interested person requests that an item be removed from the Consent Items, it will be considered with the action items.

1. **Minutes of the April 27, 2017 Facilities and Operations Committee Meeting**
   Recommendation: Approve subject minutes.

Items for Discussion and Action

2. **Participation in In-Conduit Hydro Pilot Project with InPipe Energy and SMUD**
   Receive written staff report and direct staff as appropriate.

3. **Meter Replacement Program – Request for Proposal**
   Receive report from staff.

4. **Fleet Asset Management Plan**
   Receive report from staff.

5. **Well Operation & Efficiency Testing**
   Receive report from staff.

6. **Update on Aquifer Storage and Recovery**
   Receive report from staff.

7. **Alternative Work Week Schedule**
   Receive report and direct staff as appropriate.

Adjournment

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Upcoming Meetings:

Monday, August 21, 2017 at 6:30 p.m., Regular Board Meeting

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I certify that the foregoing agenda for the July 27, 2017, meeting of the Sacramento Suburban Water District Facilities and Operations Committee was posted by July 24, 2017 in a publicly-accessible location at the Sacramento Suburban Water District office, 3701 Marconi Avenue, Suite 100, Sacramento, California, and was made available to the public during normal business hours.

Robert S. Roscoe
General Manager/Secretary
Sacramento Suburban Water District

ITEM 1

Minutes

Sacramento Suburban Water District
Facilities and Operations Committee
Thursday, April, 27, 2017

Call to Order
Director Schild called the meeting to order at 4:00 p.m.

Roll Call

Directors Present:	Neil Schild and Dave Jones.
Directors Absent:	None.
Staff Present:	General Manager Rob Roscoe, Assistant General Manager Dan York, Amy Bullock, Mitch Dion, John Valdes, Wayne Scherffius and Lynne Yost.

Public Present: William Eubanks.

Public Comment
None.

Announcements
None.

Consent Items

1. **Minutes of the February 16, 2017 Facilities and Operations Committee Meeting**
   Director Schild moved to approve Item 1; Director Jones seconded. The motion passed by unanimous vote.

AYES:	Schild and Jones.	ABSTAINED:	
NOES:		RECUSED:	
ABSENT:			

Items for Discussion and Action

2. **McClellan Park Reservoir Tank Property**
   Mitch Dion (Mr. Dion) presented the staff report.

   Director Jones inquired if the roadway along the south property line, in the center of the road if that is the property line that defines it as a county road.

   Mr. Dion stated that the property line is not designated on the county road system.

   Director Jones inquired if the land use of the property prohibits the use of a water tank.

General Manager Rob Roscoe (GM Roscoe) stated that the property is industrial use and exempt from zonings but not from health and safety codes.

GM Roscoe stated that should the Board of Directors want to proceed to move to the new site, all the items will come back to the full board for discussion and action. Staff will have conditions and title information at that time. The question that was before the Facilities and Operations Committee is did this committee find it acceptable to pursue moving from the present site to across the street at the new site.

Director Schild stated that at least right now the new proposed site is clear but has concerns on how long it will be clear. The new site would be an asset to the District and rate payers but it will cost the District money with title fees, a fence around the property and routine yard maintenance. Director Schild requested to know if there are any title restrictions and stated that he has a lot of unanswered questions that he needs answers on to agree to move forward with moving to the new property.

Director Jones stated he thinks staff should move forward with further discussions with McClellan Business Park to get some questions answered so that the concerns they have are addressed and they can make a decision on whether or not it's a good idea to move to the new property.

Director Schild stated he would be willing to write down his questions and provide them to staff.

GM Roscoe expressed that he sees value in moving across the street because the District is offered fee title to move across the street, but the District does not have fee title on the current site they are on.

Director Jones made a motion for staff to move forward and get more information from Mr. Hersh and McClellan Business Park to pursue the empty lot and to get clarification of fee title.

Director Schild seconded the motion.

Informational Items

3. **Main Line Replacement and Miscellaneous Projects Update**
   Mr. Dion presented the staff report.

   Director Schild inquired how many meters are in Parkland Estates.

   Mr. Dion stated there are about 600 meters in Parkland Estates.

   Director Schild inquired on the quantity of meters in area 48.

   Mr. Dion stated that there are approximately 420 meters in area 48.

Mr. Dion stated that the District is getting in the position where by year 2022 the District will be within 1,000 meters of completion.

Director Jones noted that it will take closer coordination as the District gets closer to year 2022.

GM Roscoe stated that the meter retrofit program will be installing meters in backyards.

Director Jones expressed that it will require coordination of all of the District's assets to complete the meter retrofit program efficiently.

GM Roscoe stated that the District has always known that they do not have enough money to move all the backyard mains to the front yards by the time the District has to be in compliance and fully metered. The goal is to minimize the number of backyard meters.

4. Water Transmission Main Asset Management Plan Update

Mr. Dion introduced John Valdes (Mr. Valdes) who presented the staff report.

Director Schild inquired about the loop around McClellan.

Director Jones inquired if the loop around McClellan was anticipated to be paid by private development.

Director Jones inquired if the overall goal of the transmission line is to be like the south service area where the District is able to run them with minimal amount of wells. If so, wouldn't it be prudent to get the wells in place prior to running lines around it considering that well sites are not easy to come by.

Mr. Valdes answered that it's best to work on both at the same time.

Director Schild inquired if staff has run a hydraulic model on this.

Mr. Valdes stated that they have not yet run a hydraulic model and have requested that Brown & Caldwell give the District a proposal.

Public comment from Mr. Eubanks. Mr. Eubanks stated that he has listened to the Board for 8 years and has concerns regarding the fluoridation issue. Stated that he does not see the District having enough money at the current rate the District is expending it to fluoridate the north service area of the District.

GM Roscoe commented on the fluoridation on the south verses the north service area.

Director Jones stated his suggested solution is to keep fluoridation in the south right now and keep the north un-fluorinated but needs to know what First Five has to offer.

5. Succession Planning

Assistant General Manager Dan York (AGM York) presented the staff report.

AGM York stated that a recent retirement announcement of a Production Operator will occur in November of 2017 as well as our Engineering Manager; John Valdes is tentatively entertaining retiring in October of 2017.

Director Jones stated that the industry is changing and feels the District should recognize the changes between the baby boomers to the millennials and if the District wants to keep employees here for five years or longer then they need to make some changes.

GM Roscoe stated that it's an industry wide problem and attracting and retaining employees is an issue that our District is facing. The newer generation is looking for a more flexible schedule and higher pay.

Director Schild stated that he sees other Districts employees operating from their homes with a more flexible schedule.

GM Roscoe stated that other Districts have more flexible work schedules, 10 hour days, 4 days a week and 9/80 schedules are becoming more common in the industry.

Director Jones stated that he thinks that staff needs to really make it a priority to reanalyze how to attract and retain employees.

GM Roscoe stated that the District needs to look at more of a flexible work schedule.

Adjournment

Director Schild adjourned the meeting at 4:58 p.m.

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Robert S. Roscoe
General Manager/Secretary
Sacramento Suburban Water District

Back to Agenda

SACRAMENTO SUBURBAN WATER DISTRICT

Facilities and Operations Committee

Agenda Item: 2

Date: July 19, 2017

Subject: Participation in In-Conduit Hydro Pilot Project with InPipe Energy and SMUD

Staff Contact: John E. Valdes, Engineering Manager
Mitchell D. McCarthy, Assistant Engineer

Recommended Committee Action:

Receive report from staff on efforts related to a proposed new In-Conduit Hydro Pilot Project at the District's Antelope Pressure Reducing Valve Station site and direct staff as appropriate.

Background:

This project was first proposed several years ago and the concept was to install a small micro turbine inside a pipe at the District's Antelope Pressure Reducing Valve (PRV) station site that would take advantage of the reduction in pressure to produce electricity. On average, surface water delivered to the District at this location per a contract with Placer County Water Agency (PCWA) is available roughly 6 out of every 10 years (based on historical hydrologic records). A preliminary feasibility study completed in 2010 by Bennett Engineering Services (BEN|EN) indicated that in-conduit hydro could potentially be feasible at two of the District's Pressure Reducing Valve (PRV) station sites (Antelope PRV and Verner PRV) with payback periods on the order of 8 to 11 years. A pre-design (30%) study was recommended for each site to provide more detailed equipment layouts and a more precise estimate of cost and income.

In July 2011, following a qualification based selection process, the District hired Domenichelli & Associates (D&A) to perform the pre-design study. In February 2012, D&A completed a pre-design technical memorandum (TM) for the project. In the TM, D&A performed both an engineering analysis and economic analysis on the feasibility of in-conduit hydro at the two PRV sites. D&A concluded that that the Antelope PRV station site was the most feasible, but neither site has a reasonable payback period (15 years or less) unless grant funding or SMUD incentives could be obtained. The TM included a preliminary site layout which also included a separate pump back project (which was later constructed in a separate building). D&A concluded that the preferred location for a micro turbine was an existing 30-inch bypass pipe at the Antelope PRV site. One of the reasons for the long payback period for this project was the availability of surface water only 6 out of every 10 years (on average) and the high cost of electrical interconnection facilities with SMUD. Because of the long payback period, no further study or analysis was performed on this project.

Discussion:
In March 2017, District staff met with our new SMUD key account manager, Damien Waples, to clarify the needs and expectations of both SMUD and the District. At that time, Mr. Waples informed staff that SMUD was interested in going forward with an In-Conduit Hydro Pilot Project. According to SMUD, GEI Consultants prepared a study of potential water district sites where they identified numerous gravity fed interconnections within Sacramento County. The District's Antelope interconnection was identified as one of the sites with the greatest potential for a future project. In February 2017, SMUD had been introduced to a company called InPipe Energy ("InPipe"), who has a patent pending technology that they were seeking to do a demonstration (pilot) project on. See the attached Exhibit 1 for an overview of InPipe Energy and their products/technology.

At the end of April 2017, District staff met with Gregg Semler, owner of InPipe, and SMUD to determine if a project like this would be mutually beneficial. The Antelope PRV station site was again identified as the best location. District staff proceeded to give InPipe three years of hourly flow data, inlet pressures and outlet pressures from the Antelope PRV Station. InPipe subsequently performed a hydraulic analysis and they concluded that the Antelope PRV Station site is a viable option for an in-conduit hydro pilot project.

InPipe has now completed a preliminary design and cost estimate for the In-Conduit Hydro Pilot Project at Antelope. A meeting was held with District and SMUD representatives on July 18, 2017, to review their proposal. See Exhibit 2 for a copy of the Power Point presentation made by Mr. Semler with InPipe. Slide #4 shows a schematic of the proposed design for the pilot project. As indicated, InPipe is now proposing two small turbines, one small and one large. The reason for this is that this will allow for electricity to be created over a wider range of flows through the PRV station. Slide #3 shows that the estimated annual power generation is 818,307 kWh. This figure is based on surface water data from 2011 and 2012. However, it also appears that InPipe assumed that surface water was available every year at the Antelope PRV facility. District staff had already notified InPipe that surface water at Antelope is only available an average of 6 out of every 10 years, but they apparently did not fully understand this until the meeting. If surface water availability is accounted for, then the average estimated annual power production would drop to 490,984 kWh.

Additional slides in the presentation show the proposed design details, cost estimates, the proposed economics, and a tentative schedule for the pilot project. As indicated, InPipe would own, operate and maintain the equipment for the life of the asset (20 years). SMUD would agree to purchase all power generated by the facility at a negotiated fixed price. InPipe would share all revenues from the facility on an 80:20 split with the District (80% InPipe/20% SSWD) until the debt is paid off at which time the revenues would be split on a 50:50 basis. The District would have the right to purchase the system at Fair Market Value (FMV) in 15 years and every 5 years after that. Note that although they are very interested in this project, SMUD staff raised concerns with some of the economic factors used by InPipe during their presentation. District staff has additional unanswered questions concerning terms of the deal, access issues, construction liability, repurchase price, etc. Therefore, further work remains before this would be considered a viable project.

Contractual agreements will need to be in place before this pilot project could proceed. This would include a Power Purchase Agreement (PPA) between SMUD and InPipe and a Lease Agreement between the District and InPipe. District staff informed InPipe that any Lease Agreement and the terms contained therein would need to be approved by the District's Board of Directors and legal counsel.

InPipe's tentative schedule shows that the pilot facility could be constructed by the end of 2017. However, this schedule appears to be too aggressive. For example, SMUD staff indicated that there is no way that a PPA could be on their Board's agenda by August 2017 (as shown in InPipe's schedule) because work remains to negotiate terms and their Board meeting agendas are typically filled two months out.

Fiscal Impact:

Except for staff time, the District has not invested any funds into this In-Conduit Hydro Pilot Project and is not anticipating any expenses. InPipe is proposing to install the system at no cost to the District but they would maintain ownership of the equipment. They are offering to share revenues with the District on an 80:20 split as described above. A lease agreement would need to be negotiated with the detailed terms and conditions. If, after adjusting for surface water availability, this facility generates an average of 490,984 kWh of electricity annually, and SMUD purchases this power for $0.09 per kWh, the District would receive an income of approximately $9,000 per year from this facility. The District would also have the right to purchase the facility from InPipe after 15 years. However, many details on the proposed pilot project remain to be finalized and negotiated. Staff will keep the Facilities and Operations Committee and the Board updated on any progress.

Strategic Plan Alignment:

Facilities and Operations – 2.B. Monitor and improve the District's efficiencies in operating and maintaining system infrastructure.

Facilities and Operations – 2.C. Develop cost-effective strategies utilizing appropriate technology and other available resources to achieve optimization in delivery of water and enhance service.

This item aligns with these goals because in-conduit hydro has the potential to generate electricity which could reduce the District's operating costs.

Exhibit 1

INPIPE ENERGY

Overview

InPipe Energy is a renewable energy and smart water technology company whose products generate low cost, clean electricity from the flow of water in gravity fed water pipelines and help improve water pipeline system efficiency and resiliency in cities and communities around the world.

The world's water pipeline systems contain enormous amounts of potential electricity which today is burned off through valves that control water flow and pressure. The InPipe Power System (IPS) efficiently captures and converts this potential energy into a predictable, consistent source of clean renewable electricity, with no environmental impact.

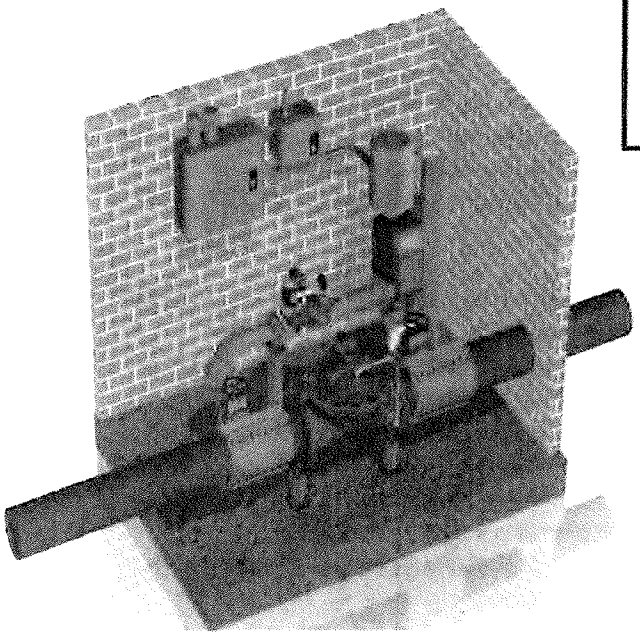
InPipe Energy's Solution .
The InPipe Power System gives water-intensive industries and entities the means to generate clean, reliable, dispatchable electricity using existing infrastructure and without changing operations, by converting the energy of pressurized, fast-moving water inside gravity-fed pipelines into a continuous source of electricity costing 2 - 6 cents per KWH. The product targets pipelines 12 to 30 inches where a minimum 10% unlevered IRR and 5 year payback is expected.

MISSION
InPipe Energy is a renewable energy and smart water technology company whose products generate low cost, clean electricity from the flow of water in gravity fed water pipelines and help improve water pipeline system efficiency and resiliency in cities and communities around the world.

VALUE PROPOSITION
InPipe Energy's distributed power solution improves the economics of water management by creating a carbon-free source of low cost, predictable energy. InPipe builds, owns, and operates system; sells electricity back to customer, then transfers ownership.

This is performed with no out of pocket costs to the water agency.

COMPETITIVE ADVANTAGES
- Generates base load, low cost, dispatchable electricity
- Retrofits into existing pipelines
- Scalable to pipe diameters 12 – 30 inches in diameter
- Integrates into scada system



The IPS uses existing infrastructure to convert a water pipeline's head pressure and flow to electricity without impacting the effectiveness of water transmission operations. The proprietary control system easily adapts to an existing pipeline to precisely manage system pressure and produce electricity without sacrificing operational control or safety. As part of a smart grid strategy the IPS can store electricity for dispatch at critical or peak times, collect

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Tel: 503-341-0004 |gregg.semler@gmail.com

real-time water quality data to detect contamination, and provide advanced monitoring and protection of the overall system.

And, unlike renewable energy sources such as wind and solar energy, the IPS's power production is predictable and consistent. Its location in parallel to existing pipelines means the IPS is inherently more secure and has no environmental impact. This results in lower regulatory hurdles and higher returns per dollar invested for renewable energy developers.

The IPS can be installed on an existing pipeline without disrupting flows and generate electricity shortly after. Regulatory and permitting requirements are minimal and installation costs are low.

Electricity produced from the IPS can power on-site pumps and other devices, charge power storage systems, or be connected to the grid for net metering or to critical infrastructure, such as hospitals, schools, street lights, government buildings and data centers. In addition to avoiding problems with intermittency present with many renewable energy sources, the IPS's high capacity factors relative to system cost mean that electricity is less expensive than other forms of renewable energy and competitive with grid-sourced electricity.

Business Model. InPipe Energy is a systems integrator and in some cases WESCO, (Water Energy Services Company), which reduces risk for water agencies and cities interested in producing renewable energy. The Company conducts energy assessments and optimally locates, installs, operates and maintains the IPS in exchange for a long term commitment from the customer to either purchase the energy produced, or lease to InPipe the PRV and related equipment. Technical and operational support will be provided by a network of leading engineering firms and in the renewable energy and water sectors.

The Company earns revenues through equipment sales, project sponsorship and development, equity participation, and O&M contracts. In addition, InPipe Energy will custom package, sell, and analyze pipeline data. By year two InPipe will have a special purpose vehicle to finance projects.

Status. A number of U.S. cities, including New York, Riverside, Denver, San Jose and San Diego are exploring conduit hydro and its potential to bring many megawatts of green, dispatchable power to their residents and to improve the resiliency of their water systems. InPipe Energy is in discussions with several forward-thinking water agencies that are exploring and evaluating deployment of the IPS next year. In anticipation, Company has crafted a capital-efficient, outsourced manufacturing and supply approach that enables it to ramp-up production to meet demand and keep our product costs low.

The Team. Gregg Semler, InPipe Energy's founder and president, is uniquely qualified to bring InPipe's products to market. Gregg is a veteran of the clean energy market who brings more than two decades' of executive leadership experience to InPipe Energy. Immediately prior to founding InPipe Energy, Gregg served as founder, president, and CEO of Lucid Energy. Prior to that, he served for four years as Managing Director at Pivotal Investments, an early stage venture fund focused on companies aiming to deliver superior financial returns in the sustainable economy. Gregg earned his BA from Columbia and his MBA from Dartmouth's Tuck School. In addition to Gregg, the Company has recruited an experienced, multi-disciplinary team ready to join the company and dedicate their careers to making InPipe Energy into a global leader in the in-pipe hydro market. These individuals include significant technical water and energy infrastructure backgrounds.

Exhibit 2

INPIPE ENERGY

ANTELOPE PRS PROJECT PROPOSAL

7/18/2017

Inside Antelope PRS

Convert the currently unused 5th bypass into a hydro power system

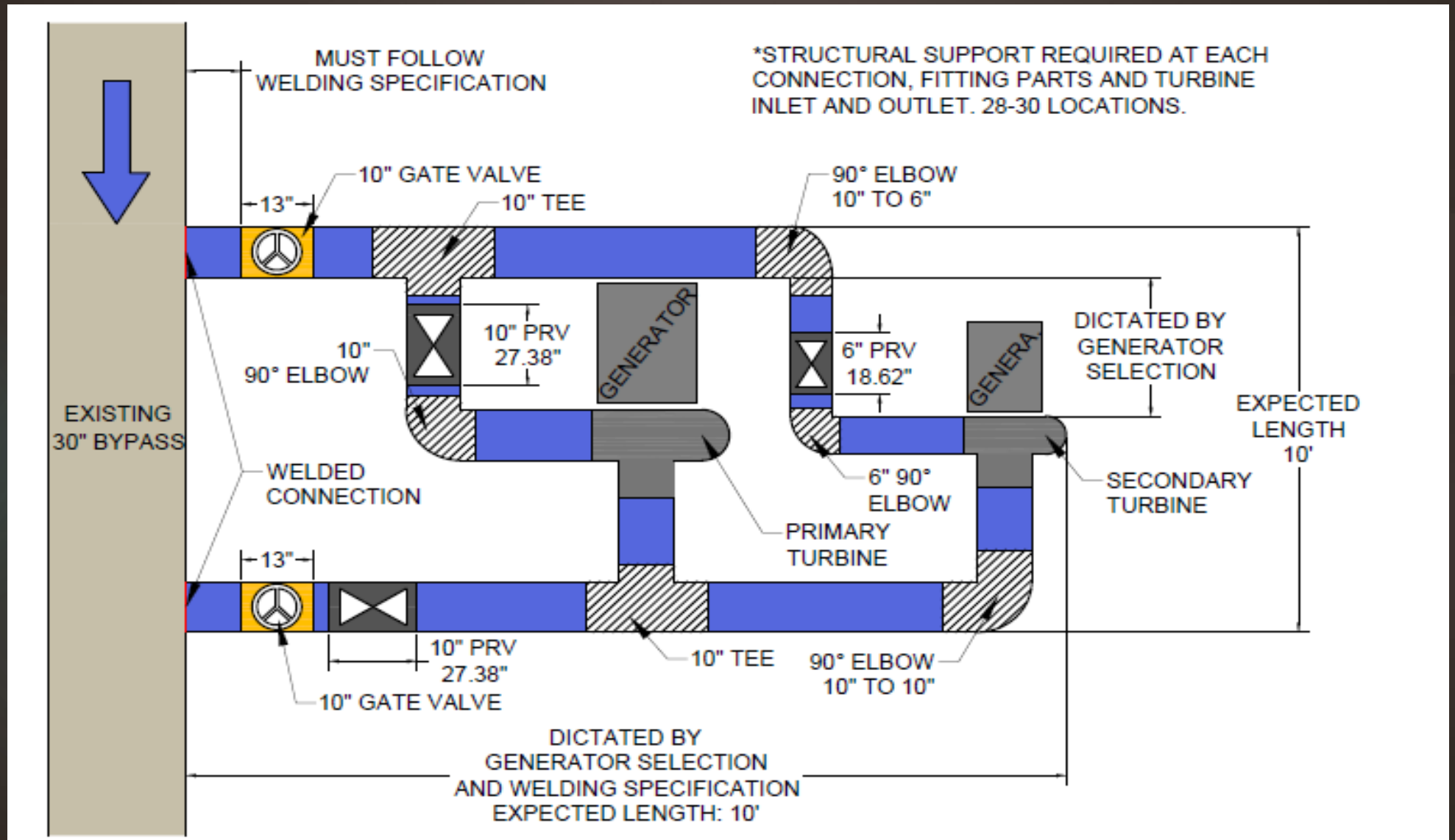
Energy Potential

- Annual average flow range: 3000 – 10,000 GPM
- Pressure Differential: 60 psi
- Estimated annual power generation: 818,307 KWH
  - 74% efficient

Based on 2011 and 2012 data

INPIPE ENERGY

Proposed Design



Preliminary Specs - Installation

- InPipe's bypass dimensions: 10 feet x 10 feet
- Install at existing 5th pipe at Antelope PRS
- Install by cutting into existing 30 inch pipe, welding in bypass and placing two isolation valves in place

INPIPE ENERGY

Preliminary Specs – Electrical Interconnection

- Nameplate: 130 KW
- Two Turbines operating 1200 – 8,750 GPM
- Two Generators
  - Grid connected synchronous, induction-type generators
  - 3 Phase, 480V
  - UL Approved

INPIPE ENERGY

Preliminary Specs - Hydraulics

- 3 PRVs
  - Two upstream PRVs
    - Protects the system from unexpected pressure waves and monitors the IPE system operation. Outfitted with solenoid control and pressure monitors.
  - Downstream PRV
    - Regulates the downstream pressure to meet the SSWD operating requirement.

INPIPE ENERGY

Preliminary Specs – Communications and Regulatory

- Remote, real time monitoring through secure cellular network
- Scada integrated for continuous monitoring by SSWD
- Regulatory requirement: FERC Conduit Exemption

INPIPE ENERGY

Estimated Project Costs = $757,103

Item	Costs
Components	$247,500
Electrical equipment & grid connection	$225,000
Regulatory	$30,000
Administration	$156,228

Estimated Project Cost Comparison

	InPipe Energy	GEI*
Construction and material	$620,875	$826,563
Administration	$156,228	$214,906
Project total	$757,103	$1,041,469

- InPipe's proposal is 27% lower than GEI study
- Less costly design based on: lower construction costs and lower interconnect costs ($25,000).
- Includes costs for FERC regulatory compliance.

*SMUD funded GEI Consultants to study: In-conduit Hydropower opportunities (2016)

Proposed economics for Pilot Project

- InPipe Energy to own, operate, and maintain the equipment for life of the asset (20 years).
- InPipe will fund construction, interconnection and regulatory expenses.
- SMUD shall agree to purchase all the electricity produced from the system beginning at a negotiated rated (assumed to be 8-9 cents per KWH). A typical annual escalation fee will be acceptable.
- InPipe agrees to share all the economics from the project 80:20 with SSWD
- Once project funders get their target return, (15%) then economics will be shared 50:50
- SSWD shall have the right to purchase the system(s) at FMV commencing on the 15th anniversary, and every 5 years thereafter

INPIPE ENERGY

Unknowns to be addressed

- Feedback on InPipe's approach
- Price of energy and terms with SMUD
- Interconnection costs

INPIPE ENERGY

Next Steps - Proposed Timeline

MILESTONE	TIMING
SSWD Feedback	July
PPA with SMUD	August
Interconnect with SMUD	August
LOI with SSWD	August
Agreement with SSWD	September
Conduit Exemption	September - November
Installation	December

INPIPE ENERGY

Gregg Semler

President and CEO

Gregg@inpipeenergy.com

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Back to Agenda

SACRAMENTO SUBURBAN WATER DISTRICT

Facilities and Operations Committee

Agenda Item: 3

Date: July 14, 2017

Subject: Meter Replacement Program – Request for Proposal

Staff Contact: Dan York, Assistant General Manager
Jim Arenz, Operations Manager
Matt Underwood, Field Services Superintendent

Recommended Committee Action:
Receive report on Meter Replacement Program Request for Proposal collaboration with Citrus Heights Water District.

Background
In previous years there have been periodic discussions among local water agencies regarding cooperative purchasing of operational supplies. The goal is to put aside provincial interests in exchange for the broader benefits to be achieved through cooperative purchasing, by potentially securing the provision and performance of goods and services at a lower cost. Cooperative purchasing has demonstrated a strong ability to serve as an effective tool to assist in saving rate payer dollars. In fact, the Regional Water Authority (RWA) has implemented a chemical purchasing program (eg, chlorine and fluoride) that was a benefit to a majority of local water agencies with large surface water treatment plants.

Discussion:
Citrus Heights Water District (CHWD) is preparing to release a Request for Proposal RFP for a Meter Replacement Program Planning Study. The purpose of the RFP is to retain a consulting team to complete a study that will: 1) develop a strategy to replace existing CHWD water meters; 2) develop a strategy for the replacement of future generations of meters and meter reading technology; 3) develop a cost estimate for the meter replacement program; 4) develop a funding strategy for the meter replacement program.

CHWD is attempting to determine the level of interest within the San Juan Family (SJF) of Agencies (San Juan Water District, Fair Oaks Water District, and Orange Vale Water Company) in participating in a SJF-wide meter testing and/or replacement program. CHWD requested a meeting with Sacramento Suburban Water District (District) to determine if there is any interest in participating in the subject study.

On June 12, 2017, the District's Assistant General Manager, Field Services Superintendent, and Purchasing Specialist met with the CHWD Project Management Team and discussed the Scope of Services requested in the RFP. SSWD staff is currently reviewing the RFP to determine the potential merit of participation. The Fair Oaks Water District and Orange Vale Water Company have informed CHWD that they are not interested in participating in the RFP. A meeting has been calendared for mid-August between the District, CHWD and San Juan Water District to determine the next steps if the subject effort is to continue.

Staff will provide updates if discussions mature.

Fiscal Impact:
There is no fiscal impact to the District at this time.

Strategic Plan Alignment:
Facility and Operations - 2.A. The District will utilize appropriate planning tools, identify financial resources necessary, and prioritize system requirements to protect and maintain District assets and attain water resource objectives incorporating resource sustainability and lifecycle cost analysis into the framework.

Leadership - 5.D. Provide leadership within the community in a positive manner for the mutual benefit of the area (service groups, adjacent water purveyors, county/city/local government).

When mutually beneficial, partnering with neighboring agencies to improve purchasing power can reduce both capital and operating costs benefitting both the District and its rate payers

Back to Agenda

SACRAMENTO SUBURBAN WATER DISTRICT

Facilities and Operations Committee

Agenda Item: 4

Date: July 18, 2017

Subject: Fleet Asset Management Plan

Staff Contact: Jim Arenz, Operations Manager

Recommended Committee Action:
Receive report from staff on the Fleet Asset Management Plan.

Discussion:
During the CY2009 Budget discussion process, the previous criteria utilized by the District for deeming a vehicle surplus, vehicle age at least 6 years and total mileage at least 80,000 miles, was replaced by a Vehicle Point System (VPS). This was done to achieve the maximum return on investment for each vehicle in the District's fleet. The VPS is a process that utilizes vehicle age/depreciation, mileage, type of service, reliability, maintenance cost, repair cost, and condition. The VPS was presented to and agreed upon by the Facilities and Operations Committee and the full Board in April 2009.

Subsequent changes to the VPS occurred in 2013 and 2014. In 2013, language in the Reliability scoring section was updated to better clarify the mechanical issues or cost factors relating to the points assigned in this section. In 2014, the Maintenance & Repairs scoring section was separated into two separate scoring sections Maintenance Costs and Repair Costs. This change was done to better identify costs solely related to component failures, not costs related to maintenance associated with normal wear and tear on items such as brakes, tires, and oil changes unless these were damaged by a specific component failure.

On an annual basis the District completes an update of the VPS to predict the replacement needs of the District fleet (see Exhibit 1). The purpose of this update is to identify long-term replacement spending needs and associated budgetary requirements, and to communicate these funding needs to the District's Board of Directors. A summary of the data from the 2017 VPS update can be seen in Exhibit 2. This summary includes a list of all District vehicles actively in service along with each vehicle's current point value, current age, assumed year of replacement, and estimated assessed points and age at time of replacement.

As per the VPS, vehicles that meet Condition 3 (30 to 34 Points) qualify for replacement and vehicles meeting Condition 4 (Over 35 Points) need immediate consideration for replacement.

Not replacing vehicles meeting the latter condition in a timely manner can lead to under funding of fleet replacement, which can cause large replacement backlogs to develop. Exhibit 3 shows the purchase history of the current fleet by year of purchase. More than half of the current fleet, 26 of 46 vehicles are greater than 10 years old with an average age of 14 years. The other 20 vehicles purchased on or after 2008 have an average age of 6 years. Currently, 3 vehicles meet Condition 4 and should be replaced immediately in 2018, and 13 vehicles meet Condition 3 and should be considered for replacement soon thereafter.

Overall, automobile quality has improved, and newer automobiles can be expected to have fewer reliability problems on average than older models. However, a typical personal automobile is generally utilized for commuting back and forth to work and leisure driving conditions. The majority of the District's vehicles are continuously operated in congested traffic conditions throughout the business day. In addition, the vehicles transport loads of tools and equipment and pull trailers equipped with mini excavators and equipment. These types of conditions cause atypical wear and tear on a vehicle, which can lower its life expectancy.

Retention of vehicles in the fleet for too great of a period can eventually lead to the aforementioned replacement backlog and can result in higher lifetime repair costs, increased down time resulting from repairs, and little if any residual value when the vehicle is eventually surplused. To guard against these eventualities, and to assist staff in budgeting for vehicle replacement each year, staff would like to replace of a minimum of 4 vehicles each year from 2018 through 2028 and beyond. The VPS would still be utilized to determine the 4 vehicles with the highest point values to be replaced (see Exhibit 4 for proposed replacement schedule).

If this schedule is followed the average age of the existing fleet would be 16 years once the last of the current fleet is replaced in 2028 with the oldest vehicles reaching an age of 23 years. Beyond 2028 the average age of the fleet would be reduced to 6.5 years with the oldest vehicles being 12 years old.

The most important part of any fleet management plan is the utilization of a system to assess fleet efficiency influencing fleet utilization and ownership costs. To ensure the efficacy of the VPS and the entire fleet management program specific guidelines need to be in place. To that end, staff has drafted a Fleet Asset Management Plan (Plan) (see Exhibit 5) to assist the District with planning, organizing, and controlling the utilization of the District fleet of vehicles for the purpose of accomplishing operational goals. Using this Plan along with the VPS District staff will be better enabled to manage the district fleet to ensure the proper vehicle type is being used for each job type, determine when particular vehicles or groups of vehicles are in need of replacement, and make certain the fleet is maintained at the highest possible efficiency and value to the District.

Enterprise Fleet Management and District staff met in 2016 to discuss the benefits of their vehicle leasing program rather than a purchasing program. Some of the benefits include maintenance, repairs, annual reviews of service and mileage patterns, increased fuel economy, etc. Enterprise Fleet Management has a number of public agencies, including water, that are in their leasing program. District staff is planning to meet with Enterprise Fleet Management in the latter part of 2017 to obtain more input on their leasing program.

Fiscal Impact:
Utilization of this schedule will assist in balancing vehicle replacement costs year after year, and provide the District with a more modern and reliable fleet of vehicles that should reduce costs related to repairs and lost productivity as a result of downtime.

Strategic Plan Alignment:
Facility and Operations - 2.A. The District will utilize appropriate planning tools, identify financial resources necessary, and prioritize system requirements to protect and maintain District assets and attain water resource objectives incorporating resource sustainability and life cycle cost analysis into the framework.

Facility and Operations - 2.D. Manage assets by implementing, preventive and predictive maintenance and analysis programs on District assets to extend their life and reduce service interruptions.

Finance – 4.A. Monitor District operations through internal control procedures, documentation and other processes necessary to ensure effective financial performance.

Replacement of District vehicles in a timely manner improves fleet management and promotes a more efficient and economical support function, benefitting ratepayers.

Exhibit 1

Vehicle Point System - Updated 6/30/2017

Factor	Points
Age	One point for each year of chronological age, based on in-service date.
Miles	One point for each 10,000 miles for gas vehicles/One point each 20,000 miles for diesel vehicles.
Type of Service	1 to 5 points are assigned based on the type of service that vehicle receives: 1= Administration/Pool Vehicle 2= Supervisory 3=Foremen, Inspectors, USA, Facilities Fleet Spec, On-Call, Conservation 4= Production, Field Services, Distribution, Dump Trucks 5= Distribution (pulling trailers)
Reliability	1 to 5 points are assigned based on the following factors: 1 = Vehicle with a low frequency of reported problems and the cost to repair those problems is low 2 = Vehicle with a low frequency of reported problems but the cost to repair those problems is high 3 = Vehicle has had a moderate frequency of reported problems and the cost to repair those problems is low 4 = Vehicle has had a high frequency of reported problems regardless of repair costs 5 = Vehicle has had a high frequency of reported problems and the cost to repair those problems is high
Maintenance Costs	1 to 5 points are assigned based on total life maintenance costs. A 5 is assigned to a vehicle with life maintenance costs equal or greater to the vehicle's original purchase price, while a 1 is given to a vehicle with life maintenance costs equal to 20% or less of its original purchase cost: 1=20%, 2=40%, 3=60%, 4=80%, 5=100%
Repair Costs	1 to 5 points are assigned based on total life repair costs (not including repair of accident damage). A 5 is assigned to a vehicle with life repair costs equal or greater to the vehicle's original purchase price, while a 1 is given to a vehicle with life repair costs equal to 20% or less of its original purchase cost: 1=20%, 2=40%, 3=60%, 4=80%, 5=100%
Condition	This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc. A scale of 1 to 5 points is used with 5 being poor condition.

Under 23 points	Condition 1	Excellent
23 to 29 points	Condition 2	Good
30 to 34 points	Condition 3	Qualifies for Replacement
Over 35 points	Condition 4	Needs Immediate Consideration for Replacement

Used a three year average for the average miles per year.

Vehicle # 2	1999 Ford F-550 Dump Truck 7.3 - Diesel	
Cost New	$32,114	
Age	18	18
Miles/Hours	74,045	3.70
Type of Service	Distribution - Average miles per year 2,379	4
Reliability	2	2
Maintenace Costs	$15,968	2.5
Repair Costs	$33,312	5
Condition	2.5	2.5
TOTAL	Transmission replaced 6/17/15 @ 69,540 miles (3 year warranty) - PTO Replaced 9/12/15	37.70

Vehicle # 3	2000 Toyota Tacoma 2.4 - Gas	
Cost New	$20,037	
Age	17	17
Miles/Hours	129,458	12.95
Type of Service	Admin./Pool Vehicle - Average miles per year 1,770	1
Reliability	1	1
Maintenace Costs	$3,017	0.75
Repair Costs	$5,187	1.25
Condition	2	2
TOTAL		35.95

Vehicle # 4	2005 Ford Explorer - Gas	
Cost New	$22,625	
Age	12	12
Miles/Hours	41,731	4.17
Type of Service	Admin./Pool Vehicle - Average miles per year 3,090	1
Reliability	2	2
Maintenace Costs	$2,269	0.5
Repair Costs	$4,678	1
Condition	1	1
TOTAL		21.67

Vehicle # 5	2000 Toyota Tacoma 2.4 - Gas	
Cost New	$20,037	
Age	17	17
Miles/Hours	99,869	9.99
Type of Service	Admin./Purchasing Specialist - Average miles per year 1,019	1
Reliability	1	1
Maintenace Costs	$7,457	1.85
Repair Costs	$3,509	0.85
Condition	2	2
TOTAL		33.69

Vehicle # 6	2005 Ford F-350 Super Duty with Tommy Lift - Gas	
Cost New	$32,430	
Age	12	12
Miles/Hours	92,922	9.29
Type of Service	Field Services- Average miles per year 8,455	5
Reliability	2	2
Maintenace Costs	$10,269	1.55
Repair Costs	$8,927	1.3
Condition	2	2
TOTAL		33.14

Vehicle # 9	2001 Toyota Tundra 4.7 - Gas	
Cost New	$26,540	
Age	16	16
Miles/Hours	93,500	9.35
Type of Service	Supervisory- Average miles per year 3,470	2
Reliability	1	1
Maintenace Costs	$6,020	1.15
Repair Costs	$3,324	0.65
Condition	2	2
TOTAL		32.15

Vehicle # 10	2001 Toyota Tacoma 2.4 - Gas	
Cost New	$19,165	
Age	16	16
Miles/Hours	70,341	7.03
Type of Service	Admin. - Average miles per year 2,675	1
Reliability	1	1
Maintenace Costs	$4,827	1.25
Repair Costs	$747	0.2
Condition		3
TOTAL		29.48

Vehicle # 11	2001 Toyota Tacoma 2.4 - Gas	
Cost New	$19,165	
Age	16	16
Miles/Hours	108,831	10.88
Type of Service	Supervisory- Average miles per year 6,877	2
Reliability	1	1
Maintenace Costs	$6,496	1.7
Repair Costs	$3,340	0.85
Condition	2	2
TOTAL		34.43

Vehicle # 12	2004 Ford F-150 - Gas	
Cost New	$23,080	
Age	13	13
Miles/Hours	84,413	8.44
Type of Service	Foreman - Average miles per year 4,916	3
Reliability	1	1
Maintenace Costs	$7,864	1.7
Repair Costs	$8,317	1.75
Condition	Transmission replaced on 3/5/10 @ 43,626 miles (100,000 warranty)	2
TOTAL		30.89

Vehicle # 14	2005 Ford F-250 - Gas	
Cost New	$27,374	
Age	12	12
Miles/Hours	96,427	9.64
Type of Service	Meter Dept. - Average miles per year 3,936	4
Reliability	1	1
Maintenace Costs	$12,163	2.25
Repair Costs	$2,118	0.35
Condition	2	2
TOTAL		31.24

Vehicle # 16	2002 Toyota Tacoma 2.4 - Gas	
Cost New	$19,278	
Age	15	15
Miles/Hours	73,331	7.33
Type of Service	Admin./Pool Vehicle- Average miles per year 1,916	1
Reliability	1	1
Maintenace Costs	$4,445	1.2
Repair Costs	$2,271	0.65
Condition	2	2
TOTAL		28.18

Vehicle # 17	2002 Toyota Tacoma 2.4 - Gas	
Cost New	$19,278	
Age	15	15
Miles/Hours	137,939	13.79
Type of Service	Admin./Environmental Compliance- Average miles per year 10,455	1
Reliability	1	1
Maintenace Costs	$9,574	2.5
Repair Costs	$4,244	1.1
Condition	3	3
TOTAL		37.39

Vehicle # 21	2000 Ford Ranger - Gas	
Cost New	$16,011	
Age	17	17
Miles/Hours	82,256	8.23
Type of Service	Admin./Water Conservation- Average miles per year 1,670	1
Reliability	1	1
Maintenace Costs	$4,426	1.4
Repair Costs	$3,185	1
Condition	3	3
TOTAL		32.63

Vehicle # 30	1997 International 4700 - Diesel	
Cost New	$70,000	
Age	20	20
Miles/Hours	38,058	1.90
Type of Service	Distribution (pulls trailer)- Average miles per year 672	5
Reliability	3	3
Maintenace Costs	$15,825	1.15
Repair Costs	$17,048	1.2
Condition	2	2
TOTAL		34.25

Vehicle # 38	2000 Ford Ranger - Gas	
Cost New	$16,011	
Age	17	17
Miles/Hours	82,730	8.27
Type of Service	Admin./Pool Vehicle- Average miles per year 2,793	1
Reliability	1	1
Maintenace Costs	$6,159	1.8
Repair Costs	$4,596	1.5
Condition	3	3
TOTAL		33.57

Vehicle # 39	2000 Ford Explorer - Gas	
Cost New	$24,513	
Age	17	17
Miles/Hours	52,198	5.22
Type of Service	Admin./Pool Vehicle- Average miles per year 2,862	1
Reliability	1	1
Maintenace Costs	$2,291	0.5
Repair Costs	$2,445	0.5
Condition	2	1
TOTAL		26.22

Vehicle # 42	2002 Toyota Tundra - Gas	
Cost New	$26,540	
Age	15	15
Miles/Hours	94,118	9.41
Type of Service	Supervisory- Average miles per year 4,571	2
Reliability	1	1
Maintenace Costs	$7,375	1.4
Repair Costs	$3,498	0.7
Condition	1	1
TOTAL		30.51

Vehicle # 43	2000 International 4600 Dump Truck - Diesel	
Cost New	$60,000	
Age	17	17
Miles/Hours	33,329	1.67
Type of Service	Distribution- Average miles per year 416	4
Reliability	1	1
Maintenace Costs	$12,260	1
Repair Costs	$10,757	0.85
Condition	3	3
TOTAL	Odometer was replaced at 30,321	28.52

Vehicle # 44	2006 Ford F-250 - Gas	
Cost New	$32,368	
Age	11	11
Miles/Hours	97,880	9.79
Type of Service	Production Dept.- Average miles per year 7,405	4
Reliability	2	2
Maintenace Costs	$9,496	1.5
Repair Costs	$10,031	1.5
Condition	2	2
TOTAL	Transmission Replaced 2/6/13	31.79

Vehicle # 45	2007 Ford F-150 - Gas	
Cost New	$22,104	
Age	10	10
Miles/Hours	105,846	10.58
Type of Service	Inspector- Average miles per year 10,959	3
Reliability	1	1
Maintenace Costs	$10,491	2.6
Repair Costs	$2,527	0.5
Condition	Transmission replaced 1/18/10 @ 30,362 miles (warranty repair)	2
TOTAL		29.68

Vehicle # 46	2007 Ford F-150 - Gas	
Cost New	$25,617	
Age	10	10
Miles/Hours	85,143	8.51
Type of Service	USA- Average miles per year 7,114	3
Reliability	1	1
Maintenace Costs	$9,932	2
Repair Costs	$9,531	1.8
Condition	2	2
TOTAL	Transmission replaced 11/21/12	28.31

Vehicle # 47	2006 Ford F-250 - Gas	
Cost New	$29,351	
Age	11	11
Miles/Hours	103,556	10.36
Type of Service	Meter Department- Average miles per year 8,325	4
Reliability	1	1
Maintenace Costs	$11,414	2
Repair Costs	$12,852	2.25
Condition	2	2
TOTAL		32.61

Vehicle # 48	2006 Ford F-250 - Gas	
Cost New	$29,400	
Age	11	11
Miles/Hours	110,214	11.02
Type of Service	Meter Department- Average miles per year 8,272	4
Reliability	1	1
Maintenace Costs	$11,671	2
Repair Costs	$12,570	2.15
Condition	2	2
TOTAL		33.17

Vehicle # 49	2006 Ford F-250 - Gas	
Cost New	$30,131	
Age	11	11
Miles/Hours	78,400	7.84
Type of Service	Production- Average miles per year 6,546	4
Reliability	1	1
Maintenace Costs	$7,547	1.25
Repair Costs	$7,219	1.25
Condition	2	2
TOTAL		28.34

Vehicle # 50	2008 E-250 Cargo Van - Gas	
Cost New	$21,675	
Age	9	9
Miles/Hours	64,039	6.40
Type of Service	Maint. Tech- Average miles per year 6,913	3
Reliability	1	1
Maintenace Costs	$3,458	0.75
Repair Costs	$799	0.25
Condition	1	1
TOTAL		21.40

Vehicle # 51	2007 Ford F-250 - Gas	
Cost New	$31,735	
Age	10	10
Miles/Hours	89,898	8.99
Type of Service	Production- Average miles per year 10,124	4
Reliability	1	1
Maintenace Costs	$8,111	1.25
Repair Costs	$3,368	0.5
Condition	1	1
TOTAL		26.74

Vehicle # 52	2008 Ford F-150 - Gas	
Cost New	$22,123	
Age	9	9
Miles/Hours	66,602	6.66
Type of Service	Inspector- Average miles per year 5,750	3
Reliability	1	1
Maintenace Costs	$5,838	1.25
Repair Costs	$2,123	0.5
Condition	1	1
TOTAL		22.41

Vehicle # 53	2008 Ford F-150 - Gas	
Cost New	$23,299	
Age	9	9
Miles/Hours	64,842	6.48
Type of Service	Forman- Average miles per year 4,889	3
Reliability	1	1
Maintenace Costs	$5,677	1.25
Repair Costs	$1,716	0.3
Condition	1	1
TOTAL		22.03

Vehicle # 54	2008 Ford F-250 - Gas	
Cost New	$32,853	
Age	9	9
Miles/Hours	66,852	6.69
Type of Service	Production- Average miles per year 7,771	4
Reliability	1	2
Maintenace Costs	$6,976	1
Repair Costs	$9,915	1.5
Condition	1	1
TOTAL	Engine replaced, partial warranty 12/26/2012	25.19

Vehicle # 55	2008 International 4300 Dump Truck - Diesel	
Cost New	$76,134	
Age	9	9
Miles/Hours	20,538	1.03
Type of Service	Distribution- Average miles per year 2,425	5
Reliability	2	2
Maintenace Costs	$12,153	0.75
Repair Costs	$11,924	0.75
Condition	1	1
TOTAL		19.53

Vehicle # 56	2008 Ford F-250 - Gas	
Cost New	$31,804	
Age	9	9
Miles/Hours	65,507	6.55
Type of Service	Production- Average miles per year 8,314	4
Reliability	1	1
Maintenace Costs	$5,955	1
Repair Costs	$2,228	0.3
Condition	2	2
TOTAL		23.85

Vehicle # 57	2008 Ford F-250 - Gas	
Cost New	$28,859	
Age	9	9
Miles/Hours	53,657	5.37
Type of Service	Meter Department- Average miles per year 6,256	4
Reliability	1	1
Maintenace Costs	$4,093	0.75
Repair Costs	$1,621	0.25
Condition	1	1
TOTAL		21.37

Vehicle # 58	2009 Ford Escape - Gas	
Cost New	$31,227	
Age	8	8
Miles/Hours	72,363	7.24
Type of Service	Supervisory- Average miles per year 7,884	2
Reliability	1	1
Maintenace Costs	$1,833	0.25
Repair Costs	$1,353	0.2
Condition	1	1
TOTAL		19.69

Vehicle # 59	2010 Ford F-150 - Gas	
Cost New	$24,350	
Age	7	7
Miles/Hours	35,805	3.58
Type of Service	Forman- Average miles per year 3,252	3
Reliability	1	1
Maintenace Costs	$1,874	0.4
Repair Costs	$440	0
Condition	1	1
TOTAL		15.98

Vehicle # 60	2010 Ford F-250 - Gas	
Cost New	$33,683	
Age	7	7
Miles/Hours	60,431	6.04
Type of Service	Production- Average miles per year 7,107	4
Reliability	1	1
Maintenace Costs	$6,146	0.85
Repair Costs	$3,761	0.5
Condition	1	1
TOTAL		20.39

Vehicle # 61	2011 Ford F-250 - Gas	
Cost New	$35,142	
Age	6	6
Miles/Hours	31,070	3.11
Type of Service	Production - Average miles per year 4,021	4
Reliability	1	1
Maintenace Costs	$2,305	0.3
Repair Costs	$41	0
Condition	1	1
TOTAL		15.41

Vehicle # 62	2012 Ford F-350 - Gas	
Cost New	$36,884	
Age	5	5
Miles/Hours	52,976	5.30
Type of Service	Field Services - Average miles per year 9,642	4
Reliability	1	1
Maintenace Costs	$6,365	0.8
Repair Costs	$655	0
Condition	1	1
TOTAL		17.10

Vehicle # 63	2011 E-350 Cutaway Van	
Cost New	$32,043	
Age	6	6
Miles/Hours	34,304	3.43
Type of Service	Production -Electrician - Average miles per year 5,773	4
Reliability	1	1
Maintenace Costs	$2,482	0.4
Repair Costs	$0	0
Condition	1	1
TOTAL		15.83

Vehicle # 64	2014 F-350 4x2 Reg cab 6.7L Power Stroke V8 6-speed trans	
Cost New	$49,590	
Age	3	3
Miles/Hours	21,563	2.16
Type of Service	Distribution - PM Trailer - Average miles per year - 4,681	5
Reliability	1	1
Maintenace Costs	$3,419	0.3
Repair Costs	$543	0
Condition	1	1
TOTAL		12.46

Vehicle # 65	2014 F-250 SRW 4X2 Reg Cab 6.2L V-8 6 speed trans w/rack	
Cost New	$32,916	
Age	3	3
Miles/Hours	32,733	3.27
Type of Service	Field Services - Average miles per year - 5,983	4
Reliability	1	1
Maintenace Costs	$4,445	0.75
Repair Costs	$84	0
Condition	1	1
TOTAL		13.02

Vehicle # 66	2016 F-550 Custom Service Body - Gasoline V10	
Cost New	$99,729	
Age	1	1
Miles/Hours	2,176	0.22
Type of Service	Distribution (Leak Truck) - Average miles per year -	4
Reliability	1	1
Maintenace Costs	$0	0
Repair Costs	$0	0
Condition	1	1
TOTAL		7.22

Vehicle # 67	2016 F-150 4x2 Extended Cab	
Cost New	$27,332	
Age	1	1
Miles/Hours	12,191	1.22
Type of Service	Field Services (On Call Vehicle) - Average miles per year -	4
Reliability	1	1
Maintenace Costs	$50	0
Repair Costs	$0	0
Condition	1	1
TOTAL		8.22

Vehicle # 68	2016 F-150 4x2 Extended Cab	
Cost New	$27,332	
Age	1	1
Miles/Hours	6,549	0.65
Type of Service	Distribution (USA Vehicle) - Average miles per year -	4
Reliability	1	1
Maintenace Costs	$0	0
Repair Costs	$0	0
Condition	1	1
TOTAL		7.65

Vehicle # 69	2017 F-250 Service Body	
Cost New	$36,947	
Age	0	0
Miles/Hours	3,186	0.32
Type of Service	Field Services - Average miles per year -	4
Reliability	1	1
Maintenace Costs	$0	0
Repair Costs	$0	0
Condition	1	1
TOTAL		6.32

Vehicle # 70	2017 Ford Transit Connect	
Cost New	$25,936	
Age	0	0
Miles/Hours	996	0.10
Type of Service	Field Services - Water Conservation - Average miles per year -	4
Reliability	1	1
Maintenace Costs	$0	0
Repair Costs	$0	0
Condition	1	1
TOTAL		6.10

Vehicle # 71	2017 F-550 Custom Service Body - Gasoline V10 w/ Underdeck Compressor	
Cost New	$126,904	
Age	0	0
Miles/Hours	57	0.01
Type of Service	Distribution (Leak Truck) - Average miles per year -	4
Reliability	1	1
Maintenace Costs	$0	0
Repair Costs	$0	0
Condition	1	1
TOTAL		6.01

Exhibit 2

Vehicle Point System Summary - Updated June 30, 2017

Under 23 points	Excellent Condition
23 to 29 points	Good Condition
30 to 34 points	Qualifies for Replacement
Over 35 points	Needs Immediate Consideration

Veh. #	Division	Fuel Type	Year	Model	Current Assessed Points	Current Age (Years)
2	Distribution	Diesel	1999	Ford F-550 - Dump 7.3	37.7	18
17	Field Ops	Gas	2002	Toyota Tacoma ext cab 2.4	37.4	15
3	Engineering	Gas	2000	Toyota Tacoma ext cab 2.4	36.0	17
11	Distribution	Gas	2001	Toyota Tacoma ext cab 2.4	34.4	16
30	Distribution	Diesel	1997	International 4700 DT466E	34.3	20
5	Field Ops	Gas	2000	Toyota Tacoma ext cab 2.4	33.7	17
38	Admin	Gas	2000	Ford Ranger XLT small 1/2 ton truck w/ext cab standard bed auto trans O/D	33.6	17
48	Field Services	Gas	2006	F-250 with Carter utility bed - 5.4L V8	33.2	11
6	Field Services	Gas	2005	Ford F-350 Super Duty with Tommy Lift	33.1	12
21	Water Conservation	Gas	2000	Ford Ranger XLT small 1/2 ton truck w/est cab standard bed auto trans O/D	32.6	17
47	Field Services	Gas	2006	F-250 with Carter utility bed	32.6	11
9	Field Services	Gas	2001	Toyota Tundra ext cab 4.7 V-8 - 4 spd auto trans.	32.2	16
44	Production	Gas	2006	F-250 Standard Cab w/Knapheid utility bed, rack and hydraulic lift	31.8	11
14	Field Services	Gas	2005	F-250 XL 5.4L V-8 5 speed automatic - utility bed with rack	31.2	12
12	Distribution	Gas	2004	Ford F-150	30.9	13
42	Production	Gas	2002	Toyota Tundra ext cab 4.7 V-8 - 4 spd auto trans.	30.5	15
45	Engineering	Gas	2007	F-150 Super cab with short bed	29.7	10
10	Engineering	Gas	2001	Toyota Tacoma ext cab 2.4	29.5	16
43	Distribution	Diesel	1999	International 4600 - Dump T444E - 7.3L	28.5	18
49	Production	Gas	2006	F-250 Standard Cab w/Knapheid utility bed, rack and hydraulic lift	28.3	11
46	Distribution	Gas	2007	F-150 Super cab with short bed	28.3	10
16	Production	Gas	2002	Toyota Tacoma ext cab 2.4	28.2	15
51	Production	Gas	2007	F-250 Standard cab w/utility bed	26.7	10
39	Admin	Gas	2000	Ford Explorer XL Four door Sport utility vehicle 2x4 3.0	26.2	17
54	Production	Gas	2008	F-250 Standard Cab w/utility bed, rack and hydraulic lift	25.2	9
56	Production	Gas	2008	F-250 4X2 Supercab w/Royal utility bed & Tommy Lift	23.9	9
52	Engineering	Gas	2008	F-150 Super cab with short bed	22.4	9
53	Distribution	Gas	2008	F-150 Super cab with short bed	22.0	9
4	Admin	Gas	2005	Ford Explorer XLS Four door Sport utility vehicle 2x4 4.0 SOHC V6 engine	21.7	12
50	Field Ops	Gas	2007	Ford E-250 Cargo van	21.4	10
57	Production	Gas	2008	F-250 4X2 Supercab w/Royal utility bed	21.4	9
60	Production	Gas	2010	F-250 Standard Cab w/utility bed, rack and hydraulic lift	20.4	7
58	Field Services	Hybrid	2009	Ford Escape	19.7	8
55	Distribution	Diesel	2008	Internation Dump Truck 4300 - 7.6L	19.5	9
62	Field Services	Gas	2012	F-350 Standard cab with crane	17.1	5
59	Field Services	Gas	2010	F-150 Super cab with short bed	16.0	7
63	Production	Gas	2011	Ford E-350 Cutaway van	15.8	6
61	Production	Gas	2011	F-250 Standard cab w/utility bed and rack	15.4	6
65	Field Services	Gas	2014	F-250 SRW 4X2 Reg Cab 6.2L V-8 6 speed trans w/rack	13.0	3
64	Distribution	Diesel	2014	F-350 4x2 Reg cab 6.7L Power Stroke V8 6-speed trans	12.5	3
67	On-Call Vehicle	Gas	2016	F-150 4x2 Extended Cab	8.2	1
68	Distribution	Gas	2016	F-150 4x2 Extended Cab	7.7	1
66	Distribution	Gas	2016	F-550 Custom Service Body	7.2	1
69	Production	Gas	2017	F-250 Service Body	6.3	0
70	Water Conservation	Gas	2017	Ford Transit Connect	6.1	0
71	Distribution	Gas	2017	F-550 Custom Service Body	6.0	0

Exhibit 3

Vehicles Purchased by Year 1999 - 2017

Veh. #	Division	Fuel Type	Year	Model	Current Assessed Points	Current Age (Years)
30	Distribution	Diesel	1997	International 4700 DT466E	34.3	20
2	Distribution	Diesel	1999	Ford F-550 - Dump 7.3	37.7	18
43	Distribution	Diesel	1999	International 4600 - Dump T444E - 7.3L	28.5	18
3	Engineering	Gas	2000	Toyota Tacoma ext cab 2.4	36.0	17
5	Field Ops	Gas	2000	Toyota Tacoma ext cab 2.4	33.7	17
21	Water Conservation	Gas	2000	Ford Ranger XLT small 1/2 ton truck w/est cab standard bed auto trans O/D	32.6	17
38	Admin	Gas	2000	Ford Ranger XLT small 1/2 ton truck w/ext cab standard bed auto trans O/D	33.6	17
39	Admin	Gas	2000	Ford Explorer XL Four door Sport utility vehicle 2x4 3.0	26.2	17
9	Field Services	Gas	2001	Toyota Tundra ext cab 4.7 V-8 - 4 spd auto trans.	32.2	16
10	Engineering	Gas	2001	Toyota Tacoma ext cab 2.4	29.5	16
11	Distribution	Gas	2001	Toyota Tacoma ext cab 2.4	34.4	16
16	Production	Gas	2002	Toyota Tacoma ext cab 2.4	28.2	15
17	Field Ops	Gas	2002	Toyota Tacoma ext cab 2.4	37.4	15
42	Production	Gas	2002	Toyota Tundra ext cab 4.7 V-8 - 4 spd auto trans.	30.5	15
12	Distribution	Gas	2004	Ford F-150	30.9	13
4	Admin	Gas	2005	Ford Explorer XLS Four door Sport utility vehicle 2x4 4.0 SOHC V6 engine	21.7	12
6	Field Services	Gas	2005	Ford F-350 Super Duty with Tommy Lift	33.1	12
14	Field Services	Gas	2005	F-250 XL 5.4L V-8 5 speed automatic - utility bed with rack	31.2	12
44	Production	Gas	2006	F-250 Standard Cab w/Knapheid utility bed, rack and hydraulic lift	31.8	11
47	Field Services	Gas	2006	F-250 with Carter utility bed	32.6	11
48	Field Services	Gas	2006	F-250 with Carter utility bed - 5.4L V8	33.2	11
49	Production	Gas	2006	F-250 Standard Cab w/Knapheid utility bed, rack and hydraulic lift	28.3	11
45	Engineering	Gas	2007	F-150 Super cab with short bed	29.7	10
46	Distribution	Gas	2007	F-150 Super cab with short bed	28.3	10
50	Field Ops	Gas	2007	E-250 Cargo van	21.4	10
51	Production	Gas	2007	F-250 Standard cab w/utility bed	26.7	10
52	Engineering	Gas	2008	F-150 Super cab with short bed	22.4	9
53	Distribution	Gas	2008	F-150 Super cab with short bed	22.0	9
54	Production	Gas	2008	F-250 Standard Cab w/utility bed, rack and hydraulic lift	25.2	9
55	Distribution	Diesel	2008	Internation Dump Truck 4300 - 7.6L	19.5	9
56	Production	Gas	2008	F-250 4X2 Supercab w/Royal utility bed & Tommy Lift	23.9	9
57	Production	Gas	2008	F-250 4X2 Supercab w/Royal utility bed	21.4	9
58	Field Services	Hybrid	2009	Ford Escape	19.7	8
59	Field Services	Gas	2010	F-150 Super cab with short bed	16.0	7
60	Production	Gas	2010	F-250 Standard Cab w/utility bed, rack and hydraulic lift	20.4	7
61	Production	Gas	2011	F-250 Standard cab w/utility bed and rack	15.4	6
63	Production	Gas	2011	E-350 Cutaway van	15.8	6
62	Field Services	Gas	2012	F-350 Standard cab with crane	17.1	5
64	Distribution	Diesel	2014	F-350 4x2 Reg cab 6.7L Power Stroke V8 6-speed trans	12.5	3
65	Field Services	Gas	2014	F-250 SRW 4X2 Reg Cab 6.2L V-8 6 speed trans w/rack	13.0	3
66	Distribution	Gas	2016	F-550 Custom Service Body	7.2	1
67	On-Call Vehicle	Gas	2016	F-150 4x2 Extended Cab	8.2	1
68	Distribution	Gas	2016	F-150 4x2 Extended Cab	7.7	1
69	Production	Gas	2017	F-250 Service Body	6.3	0
70	Water Conservation	Gas	2017	Transit Connect	6.1	0
71	Distribution	Gas	2017	F-550 Custom Service Body	6.0	0

Exhibit 3

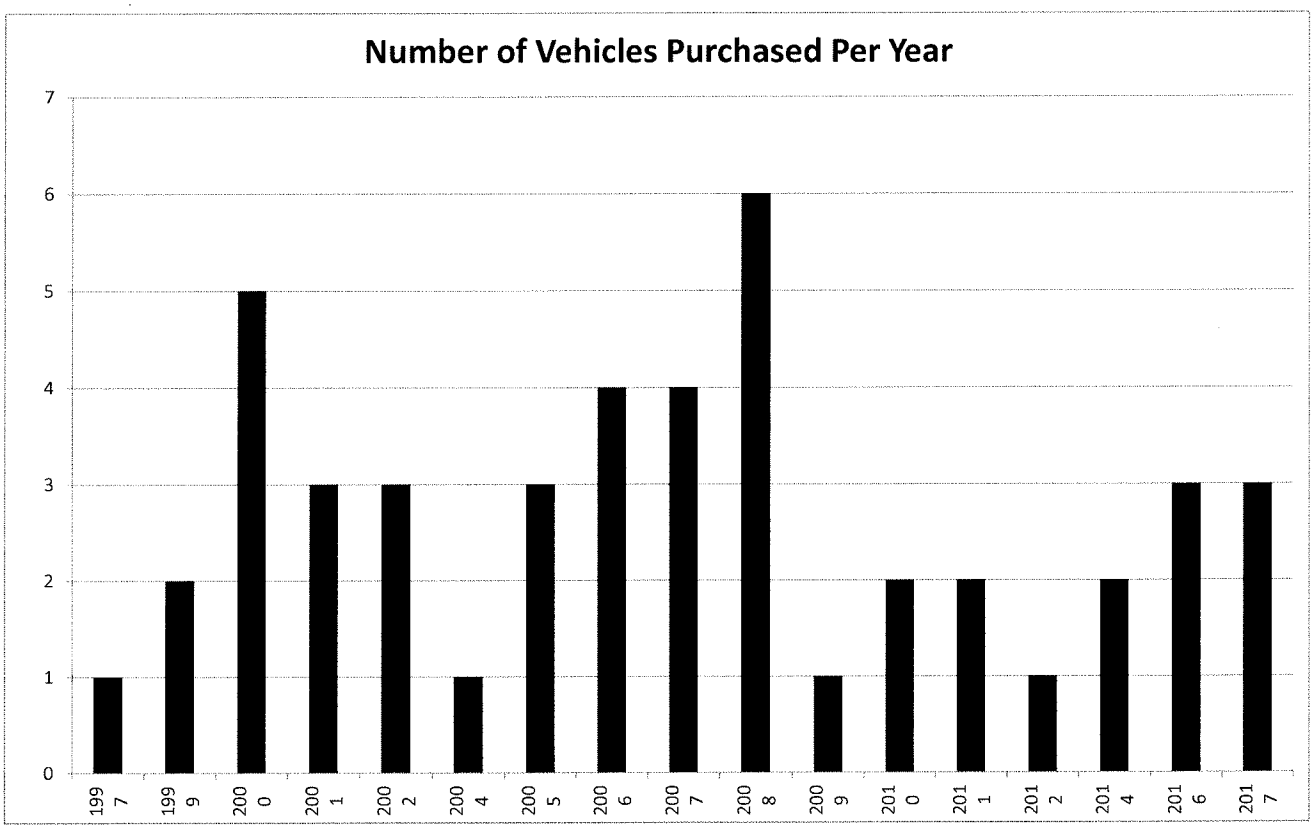
Number of Vehicles Purchased Per Year
7
6
5
4
3
2
1
0
1997
1999
2000
2001
2002
2004
2005
2006
2007
2008
2009
2010
2011
2012
2014
2016
2017

Exhibit 4

Estimated 12-Year Vehicle Replacement Schedule

Under 23 points	Excellent Condition
23 to 29 points	Good Condition
30 to 34 points	Qualifies for Replacement
Over 35 points	Needs Immediate Consideration

Veh. #	Division	Fuel Type	Year	Model	Current Assessed Points	Current Age (Years)	Assumed Replacement Year	Assessed Points at Rplcmt Year*	Age when Replaced
2	Distribution	Diesel	1999	Ford F-550 - Dump 7.3	37.7	18	2018	37.7	19
17	Field Ops	Gas	2002	Toyota Tacoma ext cab 2.4	37.4	15	2018	37.4	16
3	Engineering	Gas	2000	Toyota Tacoma ext cab 2.4	36.0	17	2018	36.0	18
11	Distribution	Gas	2001	Toyota Tacoma ext cab 2.4	34.4	16	2018	34.4	17
30	Distribution	Diesel	1997	International 4700 DT466E	34.3	20	2019	34.3	22
5	Field Ops	Gas	2000	Toyota Tacoma ext cab 2.4	33.7	17	2019	34.7	19
38	Admin	Gas	2000	Ford Ranger XLT small 1/2 ton truck w/ext cab standard bed auto trans O/D	33.6	17	2019	34.6	19
48	Field Services	Gas	2006	F-250 with Carter utility bed - 5.4L V8	33.2	11	2019	34.2	13
6	Field Services	Gas	2005	Ford F-350 Super Duty with Tommy Lift	33.1	12	2020	34.1	15
21	Water Conservation	Gas	2000	Ford Ranger XLT small 1/2 ton truck w/est cab standard bed auto trans O/D	32.6	17	2020	33.6	20
47	Field Services	Gas	2006	F-250 with Carter utility bed	32.6	11	2020	34.6	14
9	Field Services	Gas	2001	Toyota Tundra ext cab 4.7 V-8 - 4 spd auto trans.	32.2	16	2020	34.2	19
44	Production	Gas	2006	F-250 Standard Cab w/Knapheid utility bed, rack and hydraulic lift	31.8	11	2021	34.8	15
14	Field Services	Gas	2005	F-250 XL 5.4L V-8 5 speed automatic - utility bed with rack	31.2	12	2021	34.2	16
12	Distribution	Gas	2004	Ford F-150	30.9	13	2021	33.9	17
42	Production	Gas	2002	Toyota Tundra ext cab 4.7 V-8 - 4 spd auto trans.	30.5	15	2021	33.5	19
45	Engineering	Gas	2007	F-150 Super cab with short bed	29.7	10	2022	33.7	15
10	Engineering	Gas	2001	Toyota Tacoma ext cab 2.4	29.5	16	2022	33.5	21
43	Distribution	Diesel	1999	International 4600 - Dump T444E - 7.3L	28.5	18	2022	32.5	23
49	Production	Gas	2006	F-250 Standard Cab w/Knapheid utility bed, rack and hydraulic lift	28.3	11	2022	32.3	16
46	Distribution	Gas	2007	F-150 Super cab with short bed	28.3	10	2023	33.3	16
16	Production	Gas	2002	Toyota Tacoma ext cab 2.4	28.2	15	2023	33.2	21
51	Production	Gas	2007	F-250 Standard cab w/utility bed	26.7	10	2023	31.7	16
39	Admin	Gas	2000	Ford Explorer XL Four door Sport utility vehicle 2x4 3.0	26.2	17	2023	31.2	23

Exhibit 4

Estimated 12-Year Vehicle Replacement Schedule

Under 23 points	Excellent Condition
23 to 29 points	Good Condition
30 to 34 points	Qualifies for Replacement
Over 35 points	Needs Immediate Consideration

Veh. #	Division	Fuel Type	Year	Model	Current Assessed Points	Current Age (Years)	Assumed Replacement Year	Assessed Points at Rplcmt Year*	Age when Replaced
54	Production	Gas	2008	F-250 Standard Cab w/utility bed, rack and hydraulic lift	25.2	9	2024	31.2	16
56	Production	Gas	2008	F-250 4X2 Supercab w/Royal utility bed & Tommy Lift	23.9	9	2024	29.9	16
52	Engineering	Gas	2008	F-150 Super cab with short bed	22.4	9	2024	28.4	16
53	Distribution	Gas	2008	F-150 Super cab with short bed	22.0	9	2024	28.0	16
4	Admin	Gas	2005	Ford Explorer XLS Four door Sport utility vehicle 2x4 4.0 SOHC V6 engine	21.7	12	2025	27.7	20
50	Field Ops	Gas	2007	Ford E-250 Cargo van	21.4	10	2025	28.4	18
57	Production	Gas	2008	F-250 4X2 Supercab w/Royal utility bed	21.4	9	2025	28.4	17
60	Production	Gas	2010	F-250 Standard Cab w/utility bed, rack and hydraulic lift	20.4	7	2025	27.4	15
58	Field Services	Hybrid	2009	Ford Escape	19.7	8	2026	26.7	17
55	Distribution	Diesel	2008	Internation Dump Truck 4300 - 7.6L	19.5	9	2026	27.5	18
62	Field Services	Gas	2012	F-350 Standard cab with crane	17.1	5	2026	25.1	14
59	Field Services	Gas	2010	F-150 Super cab with short bed	16.0	7	2026	24.0	16
63	Production	Gas	2011	Ford E-350 Cutaway van	15.8	6	2027	24.8	16
61	Production	Gas	2011	F-250 Standard cab w/utility bed and rack	15.4	6	2027	24.4	16
65	Field Services	Gas	2014	F-250 SRW 4X2 Reg Cab 6.2L V-8 6 speed trans w/rack	13.0	3	2027	22.0	13
64	Distribution	Diesel	2014	F-350 4x2 Reg cab 6.7L Power Stroke V8 6-speed trans	12.5	3	2027	21.5	13
67	On-Call Vehicle	Gas	2016	F-150 4x2 Extended Cab	8.2	1	2028	18.2	12
68	Distribution	Gas	2016	F-150 4x2 Extended Cab	7.7	1	2028	17.7	12
66	Distribution	Gas	2016	F-550 Custom Service Body	7.2	1	2028	17.2	12
69	Production	Gas	2017	F-250 Service Body	6.3	0	2028	16.3	11
70	Water Conservation	Gas	2017	Ford Transit Connect	6.1	0	2029	17.1	12
71	Distribution	Gas	2017	F-550 Custom Service Body	6.0	0	2029	17.0	12
							Average Age of All Existing Vehicles After Replacement:		16

* Point value only increased by adding years to age. No other point factors were applied.

Exhibit 5

SACRAMENTO SUBURBAN WATER DISTRICT

FLEET ASSET MANAGEMENT PLAN

Effective Date: August XX, 2017

Table of Contents

I. INTRODUCTION

This Fleet Asset Management Plan (Plan) consists of planning, organizing, and controlling the utilization of the District fleet of vehicles for the purpose of accomplishing operational goals. In other words, this Plan is a multistage and repetitive sequence of decision making. The Operations Manager is charged with making such decisions develops goals, evaluate the efficiency of the fleet, identifies positive and/or negative trends that effect fleet operations, manages the fleet acquisition processes, manages day to day fleet operations, budgets funds assigned to the fleet, develops the fleet replacement policy, oversees day to day repair, preventive maintenance, warranty processes, and assures that fleet operations are in compliance with local, state and federal regulations.

The most important part of this Plan is the utilization of a system to assess fleet efficiency influencing fleet utilization and ownership costs. Using this system, the fleet manager decides when particular vehicles or groups of vehicles are in need of replacement.

II. FLEET ASSET MANAGEMENT PLAN

A. Acquisition — The District has applied standards for the acquisition process for new or replacement vehicles, which are:

- To simplify competitive procurements
- To achieve better acquisition prices and delivery dates, and
- To provide a practical degree of standardization within the District's fleet

Once the need for new or replacement fleet vehicles has been determined and funding has been approved by the Board, the Facilities & Fleet Specialist begins the acquisition process with development of vehicle specifications that define the technical attributes, configuration, and functional capabilities of a vehicle or piece of equipment to be acquired.

The methods set forth to acquire vehicles can affect price, delivery timing, and vendor responsiveness to the District's needs. Acquisition of District vehicles and equipment is generally conducted through the State of California Purchasing Program, unless the same vehicle can be obtained at better pricing outside of the program. Acquisition through the aforementioned program allows leverage of buying power to obtain the best possible prices and ensure the timely delivery of properly manufactured and fitted vehicles and equipment. Additionally, proper fleet operation ensures procedures are in place for vehicle review upon delivery

to ensure that the vehicle or equipment purchased complies with the order specifications. Critical parts lists, service manuals, and user and/or mechanic training services will be included in the purchase specifications for specialized vehicles/equipment for which operating and maintenance requirements are not self evident.

The District must never install accessory equipment on vehicles merely for the personal convenience or comfort of a vehicle operator; however, optimization of operator ergonomics will be considered. The purpose of accessory equipment added to vehicles is to increase the utility of the unit so it can better serve the mission-driven needs of the District. Factors on which to base selection of additional equipment will include overall safety, efficiency, economy, and suitability of the vehicle for the purpose intended.

B. In order to achieve the maximum return of investment in the District's motor vehicle fleet, a Vehicle Point System (VPS) was developed to allow a methodology to look in the future to project actual fleet costs throughout the life of the vehicle. The VPS is a process that utilizes vehicle age/depreciation, mileage, type of service, reliability, maintenance costs, repair costs, and condition. (See Appendix A)

Utilizing the VPS, the District will annually update a fleet replacement plan that projects costs and a replacement date for each vehicle. The purpose of this plan is to identify long-term replacement spending needs and associated budgetary requirements, and to communicate these funding needs to the District's Board of Directors. If this is not done on an annual basis, it could lead to under funding of fleet replacement, which can cause large replacement backlogs to develop.

The District can retain motor vehicles that are in usable condition even though it meets the VPS criteria for replacement, provided the vehicle can be operated an additional period without excessive maintenance cost or substantial reduction in resale value. If a motor vehicle has been wrecked or damaged (including wear caused by abnormal operating conditions) beyond economical repair, the District can replace the vehicle without regard to the replacement standards.

C. Vehicle Justification — Requests for new vehicles added to the District fleet will be submitted by Department managers with justification identifying the specific need. Justifications should be in sufficient detail to determine the need for the vehicle. The District will analyze the following information for each proposed vehicle:

- Type of Vehicle Required — Specify the type of vehicle required and why

- Size of Vehicle Required — Specify the size of vehicle required and why
- Right Sizing Vehicle — Specify the change in vehicle size required and why
- Special Equipment Required on Vehicle — Specify all special equipment or accessories required on the vehicle and why
- Hours a Vehicle Will be Used — Specify the hours the vehicle will be in use
- Days Vehicle Will be Used — Specify the days the vehicle will be in use

D. Disposal — The District has adopted policy PL –ADM 003, Disposing of District Real Property, Vehicles and Large Equipment and Other Personal Property. In this policy it defines the guidelines for disposing of District real property, vehicles and large equipment and other personal property. Once a vehicle has been declared surplus by the District's Board of Director and staff has taken delivery of replacement vehicle, the following must occur:

- Surplus Vehicle Storage — In order to provide reasonable protection from pilferage or damage, a surplus vehicle must be stored at the District's Antelope Facility. The Facilities & Fleet Specialist will lock the vehicle and control the keys.
- Sale of Surplus Vehicle — Guidelines must be followed in the Disposing of District Real Property, Vehicles and Large Equipment and Other Personal Property policy.
- Preparing Motor Vehicle for Sale — To improve the overall appearance of motor vehicle for sale, ensure vehicle preparation by cleaning the exterior, interior, inflating tires, charge battery, and check lubricants for proper operating levels. Without defacing the paint finish, ensure removal of District identification/decals. Limit expenses for preparation for sale and performance of needed repairs to the minimum consistent with normal commercial preparation resale practices, anticipated recovery, and good judgement for each vehicle to be sold.
- Transfer Vehicle Title — When disposing of motor vehicle, transfer title of ownership by executing proper forms through State of California Department of Motor Vehicles.
- Terminate Insurance of Disposed Vehicle — Once the new owner has taken delivery of disposed vehicle, the District's insurance carrier must be notified of sale of vehicle.

E. Fleet Composition and Needs Assessment — In determining the District's fleet needs, staff will consider, at a minimum:

- The number of each vehicle-type needed to meet the District's demands and performance objectives.
- The number of each vehicle-type required to meet environmental goals. A key factor is the number of Alternative Fuel Vehicles needed.
- The fuel economy rating for all planned vehicle acquisitions.
- Successful completion of the budget process to meet the defined needs of the District.

In addition, staff will assess the current fleet to determine the vehicle needs of the District. An electronic inventory must be maintained with sufficient descriptive facts about each vehicle. The data should include key factors such as:

- Number of vehicles, type, age and condition
- Monthly mileage for each vehicle
- Fleet's average cost per mile for each fiscal year
- Fleet's average fuel-economy rating for each fiscal year

F. Alternative Fuel Vehicles — The Federal Government has attempted to establish effective energy policies aimed at reducing U.S. dependence on petroleum imports since the first Organization of Petroleum Exporting Countries embargo in 1974.

A significant law passed in 1992, the Energy Policy Act, to add strength to U.S. efforts to increase use of non-petroleum fuels in vehicles. However, it was flawed because it only required the "purchase" of Alternative Fuel Vehicles. It did not require actual "consumption" of Alternative Fuel Vehicles.

A common petroleum reduction strategy the District can implement is to:

- Increase fuel economy through selection of more fuel-efficient vehicles
- Increase number of Alternative Fuel Vehicles
- Increase alternative fuel usage in all vehicle, particularly medium and heavy-duty vehicles

When choosing Alternative Fuel Vehicles, the District must consider:

- Fuel Characteristics: The unique qualities of the type of fuel that provides the vehicle
- Cost: Operating costs in terms of fuel and maintenance expenses and long term fuel availability at a reasonable price
- Performance: Miles per gallon, ability to start in cold temperatures and acceleration rates

- Fuel Availability: Location of refueling or recharging facilities, time required to completely fill a vehicle's tank, and method of refueling

G. . Life Cycle Costing — This method will allow the District to look into the future to project actual fleet costs throughout the life of the vehicles. There are three phases to accomplish this task. The first step in performing such an analysis is to determine its primary objectives, as listed below:

- Improve accuracy in analyzing total, projected costs of alternative fuel vehicles, including new vehicle models, for the anticipated life of the vehicles
- To obtain substantiated objectivity in vehicle selection decisions
- To estimate the operating costs over the life of the vehicle

Phase One — A comparable analysis of vehicle costs will include:

- Age/depreciation
- Mileage
- Type of Service
- Reliability
- Maintenance Costs
- Repair Costs
- Condition

Phase Two — Develop and acquire a software model to use for the costing. The model should incorporate elements of the usage profile. The parameters are set within each category of vehicle to be tested and include:

- Territory descriptions
- Mileage
- Fuel grade and price average
- Retention cycle

Phase Three — After gathering cost data on each vehicle and developing an analytical model based on individual fleet circumstances, staff must compare the results. Upon completion of this phase, staff should:

- Analyze all relevant costs for each vehicle
- Rank vehicles according to projected life-cycle costs
- Establish potential savings for the life-cycle of each vehicle

H. Vehicle Maintenance — A sound preventative maintenance program is essential to minimizing total fleet expenditures. Vehicles will be properly maintained, and through the development and enforcement of this procedure, the District will be better able to control maintenance expenses. The following are

results of a poor maintenance program that can affect both the fleet and fleet-cost performance:

- Increased downtime
- Increased probability of unsafe vehicles
- Reduced resale value for vehicles at disposal time

Conversely, a number of the results of a sound maintenance program positively affect both the fleet and fleet-cost performance:

- Reduced operational costs
- Reduced frequency of accidents
- Reduced downtime
- Increased probability of fulfilling mission and work assignments
- Optimum resale value for vehicles at disposal time

I. Fleet Charge Cards — The District currently utilizes a General Services Administration (GSA) card through Citibank, with Voyager Fleet Card (VFC) providing the fleet card services under contract with Citibank. The VFC fleet card is approved for fuel services only. The VFC fleet card is assigned to each District vehicle. The VFC fleet card user must make all reasonable efforts to find the nearest authorized location accepting the card when making fuel purchases. The staff person assigned to the vehicle is responsible for safeguarding it at all times. The following are guidelines pertaining to the VFC fleet cards:

- Fuel Purchases - Staff persons purchasing fuel from commercial service stations are to use self-service pumps. Permitted fuel purchases include regular grade no-lead gasoline, diesel fuel and alternative fuel.
- Destruction of Charge Cards — The Operations Manager will fully document the destruction of charge cards by maintaining a destruction log or register that includes:
  - Card number and expiration date
  - Indicator as to being lost or stolen
  - Date and reason for destruction
  - Method of destruction
- Charger Card Controls — District staff is responsible for ensuring that purchases made with the VFC fleet card are for official District use only. Controls are maintained to prevent unauthorized use. The following are effective controls:
  - Check that fuel purchases do not exceed tank capacity of vehicle
  - Check that the date of purchase does not fall on a holiday, weekend, or when the vehicle was out of service

- ♦ Check that the location of purchase is within the District's service area
- ♦ Check that the amount of gasoline purchased in a given period correlates with reported miles driven

III. FLEET OPERATIONS

A. Operator Responsibilities — Routine inspection of a vehicle before, during and after operation by a District employee is where an effective Preventative Maintenance Program begins. Repair of defects found during these inspections can then be scheduled to prevent more costly repairs or excessive downtime at a later date. District staff is responsible for the following:

- Pre-operation inspection. This is a visual check to make sure the vehicle is safe and in sound operating condition before being driven. Many defects, especially leaks, are more apparent after a vehicle has been parked overnight.
- During operation inspection. The driver must be alert to indications of vehicle malfunction while driving (such as unusual vibrations, noise, odors, abnormal instrument readings and erratic break or steering operations).
- Interior and exterior cleanliness of a vehicle.
- Use only the grade of fuel recommended by the vehicle manufacturer. Regular unleaded is recommended for gasoline engines. Accurate records of fuel transactions for each vehicle must be maintained.
- Ensure that vehicle keys are placed in the key board at the end of each business day.
- Ensure vehicle doors and utility doors are locked at end of each business day.
- Must not transport a friend or relative for any purpose.
- Wearing of seat belt restraint devices for all occupants.
- Unauthorized bumper stickers or other markings will not be placed on a vehicle.
- Must ensure items being transported are properly secured and labeled before operating a vehicle.
- Obeying all the motor vehicle traffic laws of the State of California. Staff is personally responsible for any violation of State or local traffic laws. If an employee is fined or otherwise penalized for an offense he/she committed while performing official duties of the District, payment is the driver's personal responsibility.

Staff must conduct the required inspections, daily or weekly, based on the type of vehicle they are operating. The required forms must be turned into the District's Facilities & Fleet Specialist.

IV. RISK MANAGEMENT

A. Driver Training — The useful life of a vehicle can be extended through a sufficient driver training program that teaches staff to improve their driving skills and foster awareness of the differences in driving various types of vehicles (i.e., automobile, sport utility vehicle, pickup truck, heavy duty utility vehicle and/or tractor/trailer combination). Improvements in driver training, awareness and performance, can lower maintenance costs as well as the costs associated with accidents. The District has initial and refresher driver training requirements as well as additional driver training assigned due to traffic violations, involvement in vehicular accidents, etc.

B. Accident Reporting — Reporting of a motor vehicle accident involving a District vehicle is mandatory whether it involves only a single District vehicle or multiple vehicle. In the glove box of each District vehicle there is an envelope (provided by the District's insurance carrier) that contains a drivers report of accident form along with other essential information. This driver's report of accident form must be completed at the scene of the accident, if possible, regardless of the extent of injury or damage. In the event of an accident, regardless of the extent of damage, an Accident Investigation Meeting will be conducted within 1-2 business days.

APPENDIX A

Vehicle Point System - 2017

Factor	Points
Age/Depreciation	One point for each year of chronological age, based on in-service date.
Miles	One point for each 10,000 miles for gas vehicles/One point each 20,000 miles for diesel vehicles.
Type of Service	1 to 5 points are assigned based on the type of service that vehicle receives: 1= Administration/Pool Vehicle 2= Supervisory 3=Foremen, Inspectors, USA, Facilities Fleet Spec, On-Call, Conservation 4= Production, Field Services, Distribution, Dump Trucks 5= Distribution (pulling trailers)
Reliability	1 to 5 points are assigned based on the following factors: 1 = Vehicle with a low frequency of reported problems and the cost to repair those problems is low 2 = Vehicle with a low frequency of reported problems but the cost to repair those problems is high 3 = Vehicle has had a moderate frequency of reported problems and the cost to repair those problems is low 4 = Vehicle has had a high frequency of reported problems regardless of repair costs 5 = Vehicle has had a high frequency of reported problems and the cost to repair those problems is high
Maintenance Costs	1 to 5 points are assigned based on total life maintenance costs. A 5 is assigned to a vehicle with life maintenance costs equal or greater to the vehicle's original purchase price, while a 1 is given to a vehicle with life maintenance costs equal to 20% or less of its original purchase cost: 1=20%, 2=40%, 3=60%, 4=80%, 5=100%
Repair Costs	1 to 5 points are assigned based on total life repair costs (not including repair of accident damage). A 5 is assigned to a vehicle with life repair costs equal or greater to the vehicle's original purchase price, while a 1 is given to a vehicle with life repair costs equal to 20% or less of its original purchase cost: 1=20%, 2=40%, 3=60%, 4=80%, 5=100%
Condition	This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc. A scale of 1 to 5 points is used with 5 being poor condition.
Under 23 points	Condition 1 Excellent
23 to 29 points	Condition 2 Good
30 to 34 points	Condition 3 Qualifies for replacement
Over 35 points	Condition 4 Needs to be scheduled for replacement

Back to Agenda

SACRAMENTO SUBURBAN WATER DISTRICT

Facilities and Operations Committee

Agenda Item: 5

Date: July 14, 2017

Subject: Well Operations and Efficiency Testing

Staff Contact: Jim Arenz, Operations Manager
Doug Cater, Production Superintendent

Recommended Committee Action:
Receive report from staff on well operations and efficiency testing.

Discussion:
The District's goal is to operate groundwater production facilities in a manner that maintains supply reliability, provides excellent water quality and minimizes long term costs. By maintaining an efficient system, the District saves on electrical costs, reducing breakdowns and expensive repairs, and providing a reliable, drought proof water supply.

In addition, rising energy costs continue to increase operating cost. Maximizing the efficiency of wells and pumps is critical.

District staff members make adjustments to individual pump controls to categorize each well as either Lead or Lag. Lead wells are considered main runners. The remaining active wells with electric motor drives are designated as Lag or fire demand. The designation of Lead or Lag for each well is determined by a number of criteria, including, but not limited to, well yield, well pump efficiency, water quality, localized pressure needs, and the overall hydraulic needs of the distribution system. Staff evaluates each well's designation on a regular basis to ensure production facilities operate as efficiently as possible to meet system demands.

In a continuing effort to maintain District pumps/motors at peak efficiency, and to ensure mechanical integrity, the District conducts annual Well Pump Efficiency Testing. The data gathered from these annual tests is vital in assessing the condition of the well and/or pump over time. Decreasing efficiency can be indicative of a worn pump, failing motor, or plugging of the well screens, gravel pack or formation.

These annual Well Pump Efficiency Tests are conducted by an outside vendor on each active well. The majority of the Well Pump Efficiency Tests consist of a two-point test; one test is

performed at normal operating pressure, and the other is performed against a head that is equal to 10 pounds per square inch greater than normal operating pressure. Utilizing two data points to determine an average efficiency over varying operating conditions provides the District better data to more accurately assess the condition of each pump/well. A summary of the results are shown in Exhibit 1.

The results indicate that the majority (76%) of the District's well pumps tested year to date in 2017 are producing water at efficiencies at or above 60%. This indicates that the District's well maintenance and rehabilitation program continues to have an overall positive effect on the District's ability to reliably provide groundwater to our customers. Utilizing the most efficient wells as Lead wells helps to reduce the overall cost of producing groundwater. Active wells that fall below 60% efficiency are examined to see if pump/motor repairs or well rehabilitation might be viable options to improve efficiency.

The operational parameters listed above have been developed and utilized internally. To ensure the District is utilizing the water industry standard operating procedures, the District is in the process of developing an Operational/Monitoring and Well Operation program. This program will consist of well data monitoring, well cost per acre-foot, well distribution system critical supply, prioritization for lead, lag, emergency stand-by and standard forms/records.

Fiscal Impact:
Fiscal impact to the District in the form of energy savings related to the operation of the most energy efficient pumps will vary depending on water year type and total annual groundwater production.

Strategic Plan Alignment:
Water Supply - 1.D. Manage the District's water supplies to ensure their quality and quantity.

Facility and Operations - 2.C. Develop cost-effective strategies utilizing technology and available resources to optimize delivery of water and enhance service.

Utilization of the most efficient wells to the greatest extent possible reduces operating costs and ensures a more reliable groundwater supply for District customers.

Exhibit 1

2017* Well Pump Efficiency Results

Facility Name	Low	Fair	Good	Excellent
	<60%	60% - 63.9%	64% - 69.9%	69.9% - 77%
El Prado / Park Estates				77%
Bell / Marconi			66%	
Ravenwood / Eastern	45%			
Hernando / Santa Anita Park	50%			
Marconi South / Fulton	56%			
Riding Club / Ladino		60%		
Watt / Arden			69%	
Becerra / Woodcrest				71%
Thor / Mercury	55%			
Greenwood / Marconi		61%		
Melrose / Channing			66%	
Red Robin / Darwin		61%		
Rockbridge / Keith		64%		
Eden / Root	53%			
Auburn / Norris			67%	
Ulysses / Mercury	58%			
Auburn / Yard			67%	
Albatross / Iris			64%	
Edison / Truax	56%			
Jonas / Sierra Mills		62%		
Weddigen /Gothberg		56%		
Stewart / Lynndale				71%
32nd Street / Elkhorn			66%	
Whitney / Concetta		60%		
Galbrath / Antelope Woods			66%	
Merrily / Annadale				74%
Northrop / Dornajo			66%	
Hilldale / Cooper	50%			
Sierra / Blackmer	57%			
Rodney T. Franz			68%	
River Walk / NETP		62%		
River Walk / NETP East			68%	
River Walk / NETP South			67%	

Facility Name	Low	Fair	Good	Excellent
	<60%	60% - 63.9%	64% - 69.9%	69.9% - 77%
Fulton / Fair Oaks	51%			
Larch / Northrop	38%			
Engle		60%		
Rosebud		62%		
Cameron			64%	
Walnut	57%			
St. Johns		61%		
Orange Grove				70%
Cypress			66%	
River College		62%		
Freeway				71%
Don Julio			68%	
Sutter		62%		
Monument			67%	
Merrihill			68%	
Poker Lane (A)			68%	
Poker Lane (B)		62%		
Cottage		61%		
Antelope North		61%		
Coyle		61%		
Rutland			67%	

* Year to Date data from 54 Active Wells

Back to Agenda

SACRAMENTO SUBURBAN WATER DISTRICT

Facilities and Operations Committee

Agenda Item: 6

Date: July 19, 2017

Subject: Update on Aquifer Storage and Recovery

Staff Contact: John E. Valdes, Engineering Manager

Recommended Committee Action:
Receive report from staff.

Background:
Sacramento Suburban Water District ("District") has been an active participant in conjunctive use for decades. Conjunctive use is the practice of maximizing surface water use in wet years and then using the groundwater supplies in dry or drought years. The District has practiced "in lieu" groundwater recharge which, by using surface water when available, allows the groundwater aquifer to naturally recharge and recover through reduced pumping. Aquifer Storage and Recovery (ASR) is the direct injection of surface water supplies such as potable water, reclaimed water, or river water into an aquifer for later recovery and use. ASR has been performed for municipal, industrial and agricultural uses and it is currently conducted throughout the state of California. The City of Roseville currently has two ASR wells in operation. Also, the Rio Linda/Elverta Community Water District is currently analyzing the concept of implementing an ASR program. The District has not performed ASR, although several of the newer District groundwater wells have been designed with ASR capability.

Discussion:
In the District's recently completed Water Master Plan Update by Brown and Caldwell, it is recommended that the District further advance approaches to using its infrastructure to generate revenue and reduce rate payer costs through various alternatives. One of the alternatives listed is to "Investigate opportunities to expand conjunctive use with neighboring water agencies, including the use of active aquifer storage and recovery (ASR)." There are several objectives and/or benefits that could be achieved through an active ASR program. These are as follows:

- To develop ASR capabilities to bank additional surplus surface water available in wet years.

- ASR can be used to recharge water in the winter months to capture stormflows that would otherwise be lost to the ocean. This is important since potential for in-lieu charge in the winter months is lower given the lower demand for water.

- By using ASR wells in addition to in-lieu recharge provides additional operational flexibility regarding the timing, location and volume of water available for recharge. This allows improvements in the District's ability to locally manage groundwater levels and groundwater quality within the District.

- The District is a member of the Sacramento Groundwater Authority (SGA) and the Regional Water Authority (RWA) and as such, regularly participates in regional surface and groundwater planning activities. Development of ASR capability is a management action to better position the District for compliance with the Sustainable Groundwater Management Act of 2014 (SGMA) and to further advance the regional goal of increased conjunctive use capabilities in the North American Groundwater Subbasin.

- The SGA is currently working on getting the region formally identified as a groundwater bank through the United States Bureau of Reclamation (USBR). Having ASR capability would allow the District to bank more groundwater than current levels based on in-lieu recharge only.

If the District did wish to pursue ASR, it is assumed that the State Water Resources Control Board's (SWRCB) Water Quality Order 2012-0010, General Waste Discharge Requirements for Aquifer Storage and Recovery Projects that Inject Drinking Water into Groundwater (ASR General Order), would be the regulatory permitting vehicle.

The ASR General Order does not explicitly require a pilot test be performed as part of the permitting process, but it is recommended that pilot testing be conducted to provide empirical data to support the required degradation analysis. The performance of a pilot test improves the understanding of changes in local system pressure during injection, technical defensibility of the degradation analysis, and understanding of local water quality improvements during injection. Collection and sharing of this information would provide important operational information for the District and also increase the level of acceptance among project stakeholders and the SWRCB.

A meeting was held on May 1, 2017, with representatives of the Central Valley Regional Water Quality Control Board (CVRWQCB) to discuss the regulatory process for ASR well permitting as it pertains to the District. Scott Armstrong/CVRWQCB concurred that they would follow the ASR General Order and that the City of Roseville's ASR permit would be the example they would use if the District proposed a pilot project. As mentioned in the ASR General Order, a Notice of Intent (NOI) must first be submitted to the CVRWCQB. The NOI must include various required information including a technical report. To authorize a pilot test or an ASR project, the CVRWQCB Executive Officer would issue a Notice of Applicability (NOA) for either a pilot test or a full scale ASR project.

Staff believes that ASR has potential future benefits for SSWD but no further analysis is recommended at this time. Staff believes it would be prudent to wait until a Groundwater Sustainability Plan (GSP) under SGMA is farther mature for the North American Groundwater Subbasin before proceeding.

If the District decides to conduct a pilot test, the estimated costs would be as follows:

- ASR Technical Report for RWQCB NOI - $65,000
- Wellhead Modifications (for Pilot Test) - $10,000
- Pilot Testing (including water quality testing) - $45,000
- Pilot Test Addendum to RWQCB - $35,000

The total of the above estimated costs is $155,000.

Fiscal Impact:

Unknown at this time. If at a later date the District does decide to proceed with an ASR pilot project, the total estimated cost for consulting services (including obtaining required regulatory approval), well modifications and pilot testing is $155,000.

Strategic Plan Alignment:

Water Supply 1.B. – Provide for the long-term water supply needs of the customers through prudent planning that will ensure capacity to serve system demands.

Water Supply 1.C. – Continue to implement and support demand management strategies and water conservation that comply with federal, state and regional programs; support Water Forum Agreement goals and efficiently meet the water supply needs of the customers.

ASR meets these goals because it has the potential to use existing infrastructure to generate revenue and reduce rate payer costs.

Back to Agenda

SACRAMENTO SUBURBAN WATER DISTRICT

Facilities and Operations Committee

Agenda Item: 7

Date: July 19, 2017

Subject: Alternative Workweek Schedule

Staff Contact: Robert S. Roscoe, P.E., General Manager

Recommended Committee Action:
Receive report and direct staff as appropriate.

Discussion:
Employers throughout the United States, both public and private, have given increased attention to the inherently significant relationship between work and family. The increased attention is a result of changing social attitudes, values, and demographic trends, notably with the under 30 portion of the workforce referred to as "Millennials". These trends have an economic significance to employers since they compete to recruit and retain quality workforce and to manage productivity. First used in Germany in the 1960's to alleviate traffic issues, flexible work times were introduced in the United States by Hewlett-Packard in 1972. The AWS has now evolved in every industry and is the most prevalent schedule variation used by federal and state government agencies.

California laws allows for some flexibility in implementing an Alternative Workweek Schedule (AWS), which, if done properly, lets employees work more than eight hours per day, without overtime, while putting in fewer days of work per week. An AWS is a term for a process allowing employers, with their employees' permissions, to set work schedules that vary from the typical eight hours per day, five days a week, without paying overtime.

In order for the District to consider any proposal for an AWS, there needs to be a benefit to the District and the departments, as well as to the employee. In general, there have been several reports that show benefits to the organizations that implement an AWS. Some of the documented benefits are listed below and may be applicable to the District:

- Enhance retention and recruitment
- Extend hours of service
- Expand use of equipment
- Improve scheduling for peak workloads
- Increase employees' job knowledge
- Boost employee morale

- Reduce tardiness and absenteeism
- Improve employee performance
- Develop a more effective workforce
- Benefit to green programs

There are mainly two categories of AWS, flexible and compressed schedules. If the District were to implement an AWS it would utilize the compressed schedule. The three compressed schedule models are; three day work week for 12 hours per day; four days of work per week for ten hours per day (aka a "4/10"); and what is referred to as a "9/80." A 9/80 allows for nine days worked in a fourteen day calendar period, for nine hours of work per day.

The General Manager has the authority to alter work schedules if necessary. One example of altering work schedules is during excessive heat waves during the summer months. If the temperature is expected to exceed 100 degrees, the General Manager will alter the work schedule for operations staff from 7:00 am to 3:30 pm. The temperatures this summer have been above 100 degrees several times, but also sporadically. So rather than altering the work hours periodically, the General Manager temporarily changed the work hours for operations staff to 7:00 am to 3:30 pm until further notice. To ensure coverage for the District's customers, both emergency and routine, the emergency On-Call Technician's (Distribution and Production) arrive at 8:00 am and remain at the Walnut facility until end of business. Currently, the Superintendents and Operations Manager are working 8:00 am to 4:30 pm to ensure management staff are available to District customers.

In an effort to reduce overtime and maintain a high level of service to walk-in customers, the General Manager has chosen to conduct a pilot for modified hours in the Customer Service Department. Typically one of the Customer Service Representatives (CSR) has to leave a cash drawer open until 4:30 pm, while the other CSRs begin closing their cash drawers prior to close of business. This has been standard practice in case a customer walks in to pay a water bill just prior to closing. This practice has incurred overtime of approximately 30 minutes per business day as the last cash drawer is reconciled. Currently, a designated CSR arrives to work at 9:00 am and works until 5:30 pm. The CSR can close out the cash drawer and also conduct administrative tasks while not having to conduct overtime.

Staff will further develop an AWS analysis and report back to the Facility and Operations Committee and full Board of Directors periodically.