



**ENGINEERING SERVICES COMMITTEE MEETING**

**RAINBOW MUNICIPAL WATER DISTRICT**  
**Wednesday, February 7, 2018**  
**Engineering Services Committee Meeting - Time: 3:00 p.m.**

**District Office** **3707 Old Highway 395** **Fallbrook, CA 92028**

Notice is hereby given that the Communications Committee will be holding a regular meeting beginning at 3:00 p.m. on Wednesday, February 7, 2018.

**AGENDA**

- 1. CALL TO ORDER
- 2. PLEDGE OF ALLEGIANCE
- 3. ROLL CALL: Timothy Prince (Chair) \_\_\_\_\_ Harry Stitle (Vice Chair) \_\_\_\_\_  
  - Members:** Tom Taufer \_\_\_\_\_ Helene Brazier \_\_\_\_\_  
 Robert Marnett \_\_\_\_\_ Mick Ratican \_\_\_\_\_  
 John Robertson Jr. \_\_\_\_\_
  - Alternates:** Lee Kirby \_\_\_\_\_ Flint Nelson
- 4. SEATING OF ALTERNATES
- 5. ADDITIONS/DELETIONS/AMENDMENTS TO THE AGENDA (Government Code §54954.2)
- 6. PUBLIC COMMENT RELATING TO ITEMS NOT ON THE AGENDA

**COMMITTEE ACTION ITEMS**

- \*7. APPROVAL OF MINUTES
  - A. December 6, 2017
  - B. January 3, 2018
- 8. LIFT STATION 1 REPLACEMENT ALTERNATIVES
- 9. GIRD AND MONSERATE PIPELINE REPLACEMENT UPDATE
- 10. METER STANDARDS AND ABM METER REPLACEMENT AND AMI PROJECT UPDATE
- 11. DEVELOPMENT UPDATE

12. DISCUSSION REGARDING CHANGING CHARTER OF THE COMMITTEE TO INCLUDE OPERATIONS
13. LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT SCHEDULED ENGINEERING SERVICES COMMITTEE MEETING
14. ADJOURNMENT

**ATTEST TO POSTING:**

  
\_\_\_\_\_  
Hayden Hamilton  
Secretary of the Board

1-30-18 @ 9:15 a.m.  
\_\_\_\_\_  
Date and Time of Posting  
Outside Display Cases

**MINUTES OF THE ENGINEERING SERVICES COMMITTEE MEETING  
OF THE RAINBOW MUNICIPAL WATER DISTRICT  
DECEMBER 6, 2017**

1. **CALL TO ORDER** – The Engineering Services Committee Meeting of the Rainbow Municipal Water District on December 6, 2017 was called to order by Vice Chairperson Stitle at 3:00 p.m. in the Board Room of the District, 3707 Old Highway 395, Fallbrook, CA 92028. Vice Chairperson Stitle presiding.

2. **PLEDGE OF ALLEGIANCE**

3. **ROLL CALL:**

**Present:** Member Stitle, Member Taufer, Member Brazier, Member Ratican, Member Robertson, Member Marnett, Alternate Nelson

**Also Present:** General Manager Kennedy, Associate Engineer Powers, Engineering Technician Rubio, Interim Engineering Manager Gerdes.

**Absent:** Member Prince, Alternate Kirby.

There were no public members present.

4. **SEATING OF ALTERNATES**

Mr. Nelson was invited to take a voting seat.

5. **ADDITIONS/DELETIONS/AMENDMENTS TO THE AGENDA (Government Code §54954.2)**

There were no changes.

6. **PUBLIC COMMENT RELATING TO ITEMS NOT ON THE AGENDA**

There were no public comments.

**COMMITTEE ACTION ITEMS**

\*7. **APPROVAL OF MINUTES**

A. November 1, 2017

**Motion:** Approve the minutes as altered.

**Action:** Approve, Moved by Member Brazier, Seconded by Member Marnett.

**Vote:** Motion passed (summary: Ayes = 5, Noes = 0, Abstain = 2).

**Ayes:** Member Brazier, Member Taufer, Member Ratican, Member Marnett, Member Nelson.

**Abstain:** Member Stitle, Member Robertson.

**8. WATER CIP UPDATE**

Mr. Powers summarized the current water CIPs as follows:

- **Bonsall Basin Desalter:** Mr. Kennedy said one of the current challenges of the Bonsall Basin Desalter project was that earlier studies showed a considerable volume of recoverable water based on projections of total water use of up to 25K AF yearly; although currently projections are down to 14K AF yearly. He pointed out securing water rights was an added issue. He said the goal was to work with all involved (water authorities, land owners, tribes) and come to an agreement, prior to investing additional funds. Discussion ensued.
- **Gird / Monserate Hill:** There was a design change to take care of the environmental issues. Staff currently reviewing the final design. Mr. Kennedy said staff was considering installing a bridge similar to the one installed at Moosa Crest.
- **Ascot Meadows Pressure Reducing Stations (PRS):** Replacement of existing PRS. Design has been finalized and easement obtained from the HOA. Project ready to be bid out for construction.
- **VVV PRS:** There are three total PRS. One was installed by operations staff and two are pending.
- **Water Condition Assessment:** Consultant working on the risk assessment, which will provide a list of the top priority pipeline replacements. Mr. Kennedy mentioned the District was working with the budget and finance committee and Raftelis to ensure appropriate project planning and execution.
- **Knottwood Way:** Near completion, waiting on record drawings prior to close out.
- **Rainbow Heights Pump Station Rehabilitation:** 100% design and scheduled to bid out in January 2018.
- **Moosa Crest Pipeline:** Design change order was approved by the Board on 12/5/17.
- **New PRS:** Will begin work when the other high priority PRS are installed. Mr. Kennedy noted pressure control and regulation are important to maintain. He pointed out higher pressure pipes do not last as long.
- **SDCWA Emergency Pump Stations:** Permanent pumps will replace temporary pumps leased during SDCWA shutdowns. The locations are currently being reviewed.
- **Weese:** Awaiting 60% submittal for review.

**9. WASTEWATER CIP UPDATE**

Mr. Powers summarized the current wastewater CIPs as follows:

- **Highway 76 Upsized District Sewer Pipeline:** Contractor is currently completing the punch list items for project close out.

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- Sewer System Flow Monitoring: Reviewing the best method to obtain flow monitoring data. Obtaining flow monitoring data would allow the District to maintain the wastewater system better, detect leaks, and review pump performance.
- Sewer Outfall: Project on hold for equalization basin alternative feasibility.
- Lift Station 1: Lift Station replacement alternatives currently under review by Staff.

## **10. DISCUSSION ABOUT METER REPLACEMENT AND METER RIGHTSIZING**

Mr. Powers provided a presentation on how the District was tackling water losses. He described the issues of water loss stating that in the early days of the District the cost of large meters were not much higher than the smaller meters because the cost only included the meter and not the capacity, as a result customers chose to install oversized meters instead of the appropriate size for their agricultural needs. He said the cost of water at the District has increased significantly over the years due to the increases on imported water, causing a large number of growers to move out of the District. He mentioned water losses are occurring due to more homes replacing the groves and using less water through oversized meters which are not registering the low flows. He pointed out the drought and water conservation have created lowered demands. He discussed the following points:

- Large mechanical meters have less accuracy at low flows
- Large meters and low consumption lead to high apparent losses
- Customers claimed that installing smaller meters cost them an asset
- The capacity fee structure needed a change

Mr. Kennedy said with the new capacity rate structure the fixed fee would have a variable component based on a peaking usage multiplier, where large capacity users would pay more and small users would pay less regardless of the meter size. He mentioned meters do not over read normally meters would under read. He said there is a significant revenue loss from inaccurate meters. He pointed out the revenue recovered from the water loss would pay for the meter replacements. Discussion ensued.

Mr. Powers stated based on the sample of meters tested for accuracy using AWWA guidelines it was determined that 6.4% of flow was not being captured due to meter inaccuracies. He said the potential revenue enhancement of replacing 1-inch, 1.5-inch and 2-inch meters on average increase accuracy by 4.4%, with an approximate annual revenue recovery of \$904,563. Discussion ensued.

Mr. Powers summarized the presentation by discussing the reduction of apparent losses as follows:

- Customer meter inaccuracies are the largest contributor to water losses at the District.
- Expect to recover 737 AF/yr
- Reduce apparent losses 70%
- Reduce total water losses 45%

Mr. Kennedy mentioned the District has been working with ABM a company that funds energy efficient projects and are compensated out of the savings. He stated ABM would be presenting an investment grade audit with projections on the meter replacement analysis. He said it would also include replacing meters, downsize oversized meters, install new customer shut off valves, install new boxes, and remove all District regulators. He said the District would be notifying the

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customers of the regulator removals and providing a onetime offer to replace the regulator downstream of the meter on the condition the customer would take on the responsibility of the regulator. Discussion ensued.

Mr. Kennedy asked the committee's opinion regarding moving the pressure regulator to a separate box or to place it in with the meter box.

Mr. Robertson recommends adding the two boxes. Mr. Kennedy agrees with Mr. Robertson, although he said on the other hand one box was most cost effective, installing the second box would be faced with many variables.

Mr. Marnett suggested installing another box with another pressure regulator at the customer's cost. Mr. Kennedy mentioned the District was several months away from making a decision.

*Mr. Robertson and Ms. Brazier left the meeting at 4:53 p.m.*

**11. DISCUSSION AND POSSIBLE ACTION TO APPOINT 2018 COMMITTEE OFFICERS**

Agenda item was postponed for the next Engineering Committee Meeting.

**12. LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT SCHEDULED ENGINEERING SERVICES COMMITTEE MEETING**

The following agenda items were suggested for the next Engineering Committee Meeting:

- HDR Condition Assessment
- ABM

**13. ADJOURNMENT**

**Motion: To adjourn the meeting.**

**Action: Approve, Moved by Member Nelson, Seconded by Member Stitle.**

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**Harry Stitle, Committee Vice Chairperson**

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**Dawn M. Washburn, Board Secretary**

**MINUTES OF THE ENGINEERING SERVICES COMMITTEE MEETING  
OF THE RAINBOW MUNICIPAL WATER DISTRICT  
JANUARY 3, 2018**

1. **CALL TO ORDER** – The Engineering Services Committee Meeting of the Rainbow Municipal Water District on January 3, 2018 was called to order by Chairperson Prince at 3:00 p.m. in the Board Room of the District, 3707 Old Highway 395, Fallbrook, CA 92028, Chairperson Prince presiding.

2. **PLEDGE OF ALLEGIANCE**

3. **ROLL CALL:**

**Present:** Member Prince, Member Stitle, Member Taufer, Member Brazier, Member Ratican, Member Robertson, Member Marnett, Alternate Nelson.

**Also Present:** General Manager Kennedy, Associate Engineer Powers, Engineering Manager Kirkpatrick, Eng. Tech Rubio.

**Absent:** Alternate Kirby, Interim Engineering Manager Gerdes.

**There was one public member present: Mr. Spencer (HDR, Inc.)**

4. **SEATING OF ALTERNATES**

There were no seating of alternates.

5. **ADDITIONS/DELETIONS/AMENDMENTS TO THE AGENDA (Government Code §54954.2)**

There were no changes to the agenda.

6. **PUBLIC COMMENT RELATING TO ITEMS NOT ON THE AGENDA**

There were no public comments.

**COMMITTEE ACTION ITEMS**

\*7. **APPROVAL OF MINUTES**

A. December 6, 2017

Approval of minutes was deferred to next month’s meeting.

8. **UPDATE ON LILAC FIRE ACTIVITIES**

Mr. Kennedy provided Lilac Fire Perimeter maps delineating the areas affected by the Lilac fires. He said the fire spread quickly causing loss of power and evacuation of the District, although the District’s generator maintained the power until it was regained. He mentioned all the vehicles were also relocated. He pointed out staff ensured all the tanks had enough water. He said the Emergency Operations Command (EOC) was activated and two Incident Commanders were assigned to ensure there was 24 hour coverage.

Mr. Kennedy provided the following information and lessons learned:

- Rancho Monserate Mobile Home Park was experiencing pressure issues due to the large flows of water focused in the area. District staff increased the pressure to ensure constant high flows, although tragically many homes were lost.
- There were 8 mainline breaks and many customer line breaks. Unfortunately, one house was flooded due to a mainline break costing the District approximately \$60K. The mainline would be moved to a new location pending replacement design.
- Mainline breaks were mostly caused by water hammer. Local fire fighters were aware of the high water pressures in the area, but fire fighters from out of state were not.
- There were no District structures lost.
- Learned not to use natural gas backup generators, due to the gas being shutoff.
- The structure of the EOC could use improvement with training and preparation of crew turn arounds, backup personnel from other agencies, setup a TV in a larger room with SCADA/GPS systems.
- Easements, previously covered in brush were cleaned by the fire and should be marked out and maintained.

Mr. Kennedy said the lessons learned and required improvements would be address. Discussion ensued.

## **9. HDR CONDITION ASSESSMENT UPDATE**

Mr. Spencer the consultant from HDR, provided a presentation regarding the water pipeline investment program report. He pointed out the District owns about \$400M in water main infrastructure with a finite life that deteriorates over time reducing service levels. He said age alone was not an accurate correlator to assess the condition of the water mains. He mentioned evolving from an age base program to a performance and condition base program to ensure wise investments. He said ultimately the program goal was to cost effectively sustain desired service levels out into the future. He continued, in order to achieve the goals of the program the following steps would be required:

- Optimizing collection of the right data
- Determining the appropriate reinvestment level
- Focus those investments to get the most bank for the buck
- Developing a staff owned program, not a static project

Mr. Spencer said in order to understand the condition of the District's system, historic break data was digitized, consolidated and cleansed to support data driven decision making and to forecast breaks. He continued the data was also used for various investment scenarios to find an appropriate balance between service levels and affordability for the customers. He said included in the current proposed rate structure was a gradual increase of half a million a year over the next six years to maintain a sustainable investment level, and allowing time to replace the water mains. Discussion ensued.



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Mr. Spencer said developing the risk model would assist in prioritizing the sustainable investment level. He pointed out about 60% of the system has never experienced a break and data shows that 40% of all breaks occurred on only 5% of the system. He also mentioned 80% of the historic breaks were on 20% of the water mains by length, which indicates that a small cohort of water mains were responsible for most of the breaks. He said focusing on a small portion of the system would yield more return on investment.

Mr. Spencer explained the reasons some pipes were deteriorating faster than others. He said there were two primary reasons. The first was due to deficient contractor work especially at the joints and the second reason was due to pipe characteristics causing some to deteriorate faster, especially with a combination of high pressure and soil corrosivity. Discussion ensued.

Mr. Spencer discussed the prioritizing of investments and the development of a risk map based on the water main analysis. He pointed out that these projects for pipeline replacement would require internal commitment to execute at the most cost-effective method. Mr. Kennedy said the District would have to develop a clear plan and target the most critical areas. He mentioned starting with the following: checking pressure areas, environmental impact report, project planning, placing pipes in better places, etc. Discussion ensued.

Mr. Kennedy said the District was reserving funds, although the rates would need to be increased to cover the cost of this project. He mentioned he would inform the Board that the Engineering Committee reviewed the report and had no objections.

**10. ABM UPDATE**

Mr. Kennedy stated that 35 radio reads were installed last month in Brookhills and 250 more units would be installed in Vista Valley and Rainbow Hills.

**11. DISCUSSION AND POSSIBLE ACTION TO APPOINT 2018 COMMITTEE OFFICERS**

Mr. Kennedy said there was an opportunity to select a new Chairperson and Co-Chairperson. Mr. Robertson said he was content with the current appointees and recommends no change

**Motion:** *Leave appointees as status quo.*

**Action:** *Approve, Moved by Member Robertson, Seconded by Member Stitle*

**Vote:** *Motion carried by unanimous vote (summary: Ayes = 7).*

**Ayes:** *Member Prince, Member Stitle, Member Brazier, Member Taufer, Member Ratican, Member Robertson, Member Marnett.*

**12. LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT SCHEDULED ENGINEERING SERVICES COMMITTEE MEETING**

The following agenda items were suggested:

- HDR Feedback
- AMI Update
- Gird to Monserate Update
- Lift Station 1 Replacement
- Development Update

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Mr. Kennedy said one of the Board member's recommended including Operations information in one of the committees. He suggested expanding the Engineering Committee to include Operations information, which would be reviewed and addressed as an admin code change.

**13. ADJOURNMENT**

**Motion: To Adjourn the meeting.**

**Action: Approve, Moved by Member Stitle, Seconded by Member Brazier.**

**The meeting adjourned at 5:15 p.m.**

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**Timothy Prince, Committee Chairperson**

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**Dawn M. Washburn, Board Secretary**