



ENGINEERING SERVICES COMMITTEE MEETING

RAINBOW MUNICIPAL WATER DISTRICT
Wednesday, March 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 Engineering Services Committee will be holding a regular meeting beginning at 3:00 p.m. on Wednesday, March 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. January 3, 2018
 - B. February 7, 2018
- 8. **PRESENTATION FROM BRENT ALSPACH REGARDING ZERO LIQUID DISCHARGE DESALTER OPTIONS**
- 9. **DISCUSSION AND POSSIBLE ACTION REGARDING CHANGING THE COMMITTEE CHARTER TO INCLUDE OPERATIONS**
- 10. **RATE SETTING UPDATE**
- 11. **AMI/ABM PROJECT UPDATE**

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

13. ADJOURNMENT

ATTEST TO POSTING:



Tom Kennedy for
Hayden-Hamilton
Secretary of the Board

3-5-18 @ 3:00 p.m.

Date and Time of Posting
Outside Display Cases

**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 addressed. 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 bang 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.

Mr. Prince asked that future savings be factored into the report. Mr. Kennedy replied some numbers can be put together, although it would be difficult to predict the future. Mr. Spencer stated the industry has struggled with a strictly financial model to get a true return on investment for water main infrastructure. He said it was difficult to predict breaks and even more difficult was quantifying the value of the breaks. Discussion ensued.

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:

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

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.

Timothy Prince, Committee Chairperson

Dawn M. Washburn, Board Secretary

**MINUTES OF THE ENGINEERING SERVICES COMMITTEE MEETING
OF THE RAINBOW MUNICIPAL WATER DISTRICT
FEBRUARY 7, 2018**

1. **CALL TO ORDER** – The Engineering Services Committee Meeting of the Rainbow Municipal Water District on February 7, 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.

Also Present: General Manager Kennedy, Alternate Flint, Interim Engineering Manager Gerdes, Associate Engineer Powers, Operations Manager Milner, Engineering Technician Rubio.

Absent: Alternate Kirby.

There were no public members present.

4. **SEATING OF ALTERNATES**

There were no changes.

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

Mr. Kennedy added an update item regarding the recent water main break, after agenda item 12.

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

Motion: Approve the minutes as altered.

Action: Approve, Moved by Member Robertson, Seconded by Member Ratican.

Vote: Motion passed (summary: Ayes = 6, Noes = 0 Abstain = 1).

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

Abstain: Member Prince.

Alternate Nelson arrived at 3:08 p.m.

B. January 3, 2018

Mr. Stitle and Mr. Taufer pointed out some typos to be corrected. Mr. Prince referred to Item 9, HDR Condition Assessment Update, stating he had raised a point regarding no mention of the savings or the money saved if the plan was implemented. Mr. Kennedy said it was discussed at the meeting that there was no direct ROI it was just less losses. Discussion ensued.

Mr. Kennedy said the recording would be reviewed and the minutes amended if needed.

Motion: Bring the minutes back next month.

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

Vote: Motion passed (summary: Ayes = 7, Noes = 0, Abstain = 0)

8. LIFT STATION 1 REPLACEMENT ALTERNATIVES

Mr. Powers conducted a presentation regarding alternatives for the Lift Station 1 (LS) Replacement Project. He said the general purpose of this project was to meet current and future capacity demands and to remove maintenance and reliability issues. He mentioned originally this project included upsizing the existing 12” sewer line along Highway 76 to the Thoroughbred LS site, which would otherwise not be large enough to keep up with the current demands of the new development currently under construction. He continued the original plan also included a LS on Thoroughbred Lane to pump the wastewater across the bridge through a force main instead of using a siphon. He said the force main would then gravity feed into the Schoolhouse LS, which was the replacement for LS1. He continued the Schoolhouse LS included an upsize sewer force main to the Old River Road LS, which lifts the wastewater to Oceanside.

Mr. Kennedy pointed out when Mrs. Kirkpatrick was handling this project she forecasted the timing of the projects by including the funding received from future development. He pointed out future funding was not coming in as forecasted, and the \$10M to 12M cash flow projections were not available to fund the design of current projects. He said the District has taken a more conservative assumption for this project by determining how to fund the project assuming there were no future development funds. He brought up the following questions that were being considered:

- How can this project be funded?
- What can be done to handle all the flows?
- What can be done to upsize in the future when funding was available?

Mr. Powers discussed the following LS alternatives taking into consideration the current budget:

- Base Project – Address immediate capacity needs by building an Equalization Basin and Upsizing the Existing 12” Sewer Line. \$4.5 – 5.5 Million

- Add Alternate 1 – Address reliability of Lift Station 1 by building the Schoolhouse Lift Station and Component Force Main. \$4 – 4.5 Million
- Add Alternate 2 – Address future needs with concurrent construction of Wet Wells for future Thoroughbred Lift Station.

Mr. Kennedy said overall the goal was to try to equalize the flows in the system to remove the peaks and take some O&M maintenance hits, but with big capital savings. He pointed out regrettably there were not a lot of options for this project and by managing the commitments to provide wastewater with the current budget the Base Project was the mechanism that was selected. He said in addition, if bidding results include adding alternatives 1 and 2 at an affordable price then the District would include them. Discussion ensued.

9. GIRD AND MONSERATE PIPELINE REPLACEMENT UPDATE

Mr. Powers provided an update on the Gird to Monserate Pipeline Replacement Project. He said 12 years ago the pipeline broke under the creek and approximately 1,500 feet would have to be replaced. He mentioned the existing pipe runs under Wetlands and Diegan Coastal Sage Scrub. He said in 2016 the original final design to replace the existing pipe in place included trenching or pipe bursting and some Horizontal Directional Drilling (HDD). He explained the original design ran into significant environmental mitigation costs, since the HDD pits would be in sensitive areas and the trenching for the existing pipe would be in habitat for endangered species. He explained the District would be required to purchase mitigation land to replace the land being affected, which involved significant costs.

Mr. Powers said the new design rerouted the pipeline so impacted areas were outside of the Wetlands and Diegan Coastal Sage. He said the construction for the new design was estimated at \$1.5M where the old design was \$1.2M plus cost for mitigation land. Mr. Kennedy discussed other methods of replacing the pipe during an emergency situation and installing a bridge to the section of pipe that was on environmentally sensitive land. Discussion ensued.

Mr. Kennedy concluded that the current design concept was as far as he wanted to go at this time. He explained reviewing other methods to get across the environmental areas would be explored further.

10. METER STANDARDS AND ABM METER REPLACEMENT AND AMI PROJECT UPDATE

Mr. Powers said as discussed at the December 6, 2017 - Engineering Committee Meeting, if the District goes forward with the ABM Meter Replacement Project there would be a potential annual revenue recovery of \$900K from accurate meters. He said ABM was currently moving forward with calculating the cost for the Meter Replacement Project and as part of that the District had to provide a standard depicting how the replacement meters should be built. He discussed the different standard drawing variations that were created. He said currently the District was in the process of selecting a preferred method. He went over the option to keep everything in one large meter box where there would be limited space to work in or to add a second box provided there was enough room to install the second box. Mr. Kennedy recommended placing everything in one box for simplicity. Discussion ensued.

Mr. Kennedy provided a brief AMI update stating there were 35 meters installed and SDG&E had to install two more meters to obtain additional coverage, due to topography issues. He said there

were also some issues with the trunk reads. He mentioned all the issues should be resolved within a week.

11. DEVELOPMENT UPDATE

Mr. Gerdes provided an update regarding current development as follows:

- Pala Mesa Highlands - 124 lots: Progressing slowly - most of the water and sewer installed, anticipate models in late Spring or early Summer 2018.
- Golf Green Estates - 94 lots: Most of the water and sewer installed, four models completed.
- Horse Creek Ridge - 754 lots: Construction on site completed in phases, one phase was sold to to Richmond American, 39 units closed escrow.
- Horse Creek LS: Construction behind schedule, should be complete by late March/April 2018.
- Palomar College: Construction started, completed sewer installation and will tie-in with the Pala Mesa sewer line when the LS is completed, first classes scheduled to start on June 11, 2018.

12. DISCUSSION REGARDING CHANGING CHARTER OF THE COMMITTEE TO INCLUDE OPERATIONS

Mr. Kennedy said Mr. Gasca wanted to see an operations committee to review operational functions. He suggested including operations with the Engineering Committee. He asked the committee for recommendations regarding the type of operational functions to include.

Mr. Marnett suggested adding one standard operational procedure a month.

Mr. Robertson suggested when reworking the charter to keep it very loose.

Mr. Stitle asked Mr. Milner how many distinct operations he managed at a time. Mr. Milner responded with four departments: Operations, Construction, Wastewater, and Technical Services Group. Mr. Stitle suggested breaking down the operational functions by the four departments. Discussion ensued.

Mr. Kennedy stated the direction of the committee was to proceed with the charter change and bring back a draft write up next month.

13. WATER MAIN BREAK ON WILD ACRES

Mr. Kennedy said in 1956 a 12", tar wrapped steel pipeline was built from Turner Tank to Wild Acres and on the evening of February 2, 2018 it broke. He continued the break caused a flood knocking down a customer's fence and erosion damage. He said staff worked through the night to repair the break, although the pipe failed again further down. He said an emergency contractor had to be called in to repair the new break, due to staff being spent. He mentioned the contractor had to expose 120 feet to get to a competent piece of pipe to weld to. He said the pipe was full of pinholes with internal and external corrosion. He pointed out it was number 16 on the high-risk list for replacement. He stated there were 30 people without water over the weekend. Discussion ensued.

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

- Brent Alspach- Newer technology to handle salt brine with zero liquid discharge.
- January 3, 2018 Minutes
- AMI / ABM Update
- Operations Charter
- Update on rates from the Board Meeting

14. ADJOURNMENT

Motion: To Adjourn the meeting.

Action: Approve, Moved by Member Prince, Seconded by Member Stitle.

Vote: Motion passed (summary: Ayes = 7, Noes = 0 Abstain = 0).

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

Timothy Prince, Committee Chairperson

Dawn M. Washburn, Board Secretary

