

**MINUTES OF THE ENGINEERING COMMITTEE MEETING
OF THE RAINBOW MUNICIPAL WATER DISTRICT
NOVEMBER 5, 2014**

1. **CALL TO ORDER** – The Engineering Committee Meeting of the Rainbow Municipal Water District on November 5, 2014 was called to order by Member Fekete at 3:21 p.m. in the Board Room of the District, 3707 Old Highway 395, Fallbrook, CA 92028. Member Fekete, presiding.

2. **PLEDGE OF ALLEGIANCE**

3. **ROLL CALL:**

Present: Member Brazier
Member Fekete
Member Taufer
Member Prince

Absent: Member Saxon
Member Strapac
Member Rhyne

Also Present: Assistant Rubio
Acting District Engineer Kirkpatrick

Members of the public present were Mr. Peterson from West Yost Associates and Mr. Brady from FPUD.

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

There were no public comments.

COMMITTEE ACTION ITEMS

*5. **APPROVAL OF MINUTES**

A. October 1, 2014

Action:

Moved by Member Brazier to approve the minutes as written. Seconded by None.

After consideration, the motion FAILED due to lack of second.

6. DISCUSSION AND POSSIBLE ACTION REGARDING SAN LUIS REY GROUNDWATER STUDY

Mrs. Kirkpatrick introduced Mr. Peterson the consultant from West Yost Associates invited to provide a presentation regarding an update of the San Luis Rey Groundwater Study. Mr. Peterson began by explaining the project objective, which is to identify and demonstrate the feasibility of a proposed project that can capture and utilize the District's imported water return flows at a lower total cost than the total cost of imported water. He said the goals were to evaluate the hydrology of the San Luis Rey basin to quantify the District's imported water return flows that could be developed based on alternative groundwater well field locations, identify any required notification regarding water rights determinations used for quantifying the imported water return flows available, assist with water quality analysis and feasibility analysis of groundwater treatment plant requirements, develop a footprint and preliminary capital/operations and maintenance costs for the associated treatment facilities including wells and conveyance facilities, and identify anticipated regulatory requirements and approvals necessary to construct and operate the project. He outlined the project scope of work as follows:

- Hydrological Analysis: Develop a water budget, develop a groundwater flow model, run a baseline conditions scenario and run alternative project scenarios.
- Water Rights Evaluation: Define water right constraints and key principles, define water right strategy for use of imported water return flows, evaluate potential for cooperative projects to enhance entitlements and project yield, and prepare water rights correspondence for preferred project (if needed).
- Water Quality Analysis: Tabulate water quality goals and treatment targets by beneficial use, select groundwater sampling locations, sample groundwater quality and compare groundwater results to water quality goals and treatment targets by beneficial use.
- Alternative Analysis: Identify alternatives by beneficial use and define criteria for alternatives evaluation, screen alternatives based on cost, available sites, water rights and considerations. Analyze alternatives based on yield, hydraulic impacts, water rights considerations and cost. A final recommended plan and action plan will be provided.

Mr. Peterson briefly described the conceptual model. He said groundwater recharge from precipitation and imported flows go through fractured/weathered bedrock and accumulate in the alluvial aquifer of the San Luis Rey River. He continued the groundwater in the alluvial aquifer is either consumed locally, discharged to the San Luis Rey River or leaves the study area as underflow in the alluvial aquifer. He outlined 3 other basic concepts as follows:

1. A gaining stream surface water flow is resulting from groundwater rising up from the aquifer.
2. A losing stream is when water from the river is feeding into the aquifer.
3. A disconnected stream is surface water flow disconnected from the aquifer because groundwater levels have been drawn down usually due to pumping.

Mr. Peterson provided a summary of pumping effects. He said initially, water is removed from storage in the aquifer, later some groundwater that would have reached the stream is captured, if enough pumping occurs, streamflow can be reduced by seepage to the aquifer, and streamflow depletion can continue after pumping stops.

Mr. Peterson said the U.S. Geological Survey records provided good historical conditions data for the period of 1947-1979, which was used to calibrate the model. He reviewed the following historical conditions:

- Late 1940s-1964: Losing stream, declining groundwater levels due to pumping.
- Early 1960s: Almost no stream flow, groundwater overdraft.
- Post-1964: District imports exceed 10,000 acre-ft/yr, gaining stream, stable groundwater levels.

He pointed out by only having historical data they had to use a new tool to predict present day data and as a result a numerical groundwater model had to be developed. Discussion ensued.

Mr. Peterson said the preliminary water budget demonstrates the inflow and outflow of ground and surface water. He explained as part of this study the preliminary water budget components would be quantified to close in on the imported water number by directly measuring or estimating the following components:

- Stream Flow Gains (May-October 1966-1979): The first recorded annual stream flow gains began in 1965, possibly indicating the alluvial aquifer was replenished by that time. The first May-October gains began in 1966 and exhibited an increasing trend through 1979, possibly in response to imported water return flows. May-October gains averaged approximately 2,400 acre-ft/yr between 1966 and 1979.
- Alluvial Aquifer Underflows: Alluvial aquifer underflow was very small in comparison to the stream flow gains. Underflow Out was 20 acre-ft/yr, Underflow In was 25 acre-ft/yr, and change in underflow was about 0.2 percent of the May-October stream flow gain.
- Phreatophytic (plants) Consumptive Use: Phreatophytic use increased for each year evaluated, indicating increasing groundwater levels, even after 1979, May-October 1976 consumptive use was 970 acre-ft.

He said the calculations for the phreatophytic consumptive use showed an increase for each year indicating increasing groundwater levels, even after 1979. He pointed out the District would have to cut down the phreatophytic to obtain the 970 acre-ft of water. Discussion ensued.

Mr. Peterson went over the Preliminary Water Budget Summary as follows:

- Change in Stream Flow, May-October: Value 2,400 acre-ft
- Change in Underflow: -5
- Phreatophytic Consumptive Use, May-October: 970 acre-ft
- Groundwater Pumping: Unknown
- Estimated Imported Water Return Flows: 3,365 acre-ft

He explained phreatophytic consumptive use and groundwater pumping add to the estimated imported water return flows in the water budget. He said leaving these components out of the water budget results in an estimated imported water return flow of 2,395 acre-ft, which is the estimated average value for May-October period for the years 1966-1979. Discussion ensued.

Mr. Peterson outlined the next steps of this study as follows:

- Use finite element model to extrapolate return flows forward in time through 2013
- Identify legal and institutional constraints on pumping
- Simulate pumping scenarios
- Sample groundwater quality
- Evaluate alternatives
- Prepare final report

Mr. Peterson said included in the report would be the volume of water, cost, and uses for the water. He said the study should be completed by February 2015. Discussion ensued.

7. DISCUSSION AND POSSIBLE ACTION REGARDING MOOSA MITIGATION BANK

Mrs. Kirkpatrick provided a handout listing the proposed quitclaims and easement increases on the Moosa Mitigation Bank in addition to a map showing the locations of the easements. She said after discussing the Districts requirements with the owner she was able to prepare a list of negotiated terms. She explained the reason the owner was requesting to quitclaim certain easements was to remove all encumbrances from the land in order to convert it into a mitigation bank. She went over the owner's proposal as follows:

- #22 Easement Quitclaim: District sewer main not being utilized. Easement contains termination language.
- #23 Easement Increase: Water main easement from 10' to 20' to allow the District a small amount of grading within the easement area.
- #26 Easement Increase: Sewer main easement from 15' to 20' there is no grading necessary.
- #30 Easement Increase: Sewer main easement from 20' to 30' there is no grading necessary.
- #51 Easement Quitclaim: District sewer main not being utilized.
- #54 Easement Quitclaim: Contingent on the District no longer needing this easement (line might be moved to Old River Road bridge).
- #55 Easement Quitclaim: Contingent on the District no longer needing this easement (line might be moved to Old River Road bridge).

Ms. Brazier questioned the increase widths on whether they were adequate enough to enter with District trucks and perform the job safely. Mrs. Kirkpatrick responded the 20' was the District's standard, although she would verify with staff to ensure it provided enough room to perform work. She pointed out this was the first offer and she would continue to negotiate more increases where necessary. Discussion ensued.

Mr. Taufer asked if there were any unforeseen uses of the easements being quitclaimed more specifically easement #22. Mrs. Kirkpatrick responded no. She explained originally this location was meant for a treatment plant and there were no foreseen plans for this location.

Action:

Moved by Member Brazier to recommend to the Board that they hear from operations and consider the required width for doing the job safely and entertain engineering's statement that the District no longer needs the areas being considered for quitclaiming. Seconded by Member Prince.

After consideration, the motion CARRIED by the following vote:

**AYES: Member Brazier, Member Fekete, Member Taufer and Member Prince.
NOES: None.
ABSTAINED: None.
ABSENT: Member Saxon, Member Strapac and Member Rhyne.**

8. CIP UPDATE

Mrs. Kirkpatrick provided the following CIP Updates:

- Horse Creek Ridge development grading expected to start December 15, 2014.
- Warner Ranch development working on EIR.

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

Mrs. Kirkpatrick suggested the following agenda items: CIP Update, New Members and Beck Reservoir.

10. ADJOURNMENT

Action:

Moved by Member Brazier to adjourn the meeting to Wednesday, December 3, 2014 at 3:00 p.m. Seconded by Member Fekete.

Helene Brazier, Committee Member

Dawn M. Washburn, Board Secretary