

Fifteenmile Watershed Council Meeting

Barlow Ranger District Office, Dufur

September 11th, 2018

6:00-8:30

MINUTES

In attendance:	Martin Underhill, <i>Member</i>	Charlie Remington
Tatiana Taylor, <i>SWCD</i>	Shilah Olson, <i>SWCD</i>	Walt Burt, <i>GSI</i>
Abbie Forrest, <i>SWCD</i>	Bill Markman, <i>Member</i>	Robyn Cook, <i>GSI</i>
Phil Kaser, <i>Co-Chair</i>	Mike Kelly, <i>Member</i>	Jason Keller, <i>GSA</i>
Monte Wasson, <i>Member</i>	Gary VanOrman, <i>Member</i>	Commissioner Kramer
Jim Olson, <i>Member</i>	Stan Ashbrook	

Introduction, Review/ Approval of Minutes

Phil called the meeting to order and issued a round of introductions. He called the council's attention to the minutes from the May meeting and gave the council a moment to review.

Mike Kelly moved to approve the minutes as presented, Jim Olson seconded, and the motion passed.

FAST and Instream Lease 2018 – Tatiana Taylor, SWCD

Tatiana began by describing the post season survey she would be handing out after the presentation for those who participated or were involved with the FAST program. She encouraged everyone who could to fill out the survey as it will improve the program by assessing the specific needs of participants. She mentioned that she will be sending out a survey to all 2018 FAST participants who were unable to attend this meeting.

Tatiana gave a brief background on the FAST program, discussing the fish kill in 2009 and how FAST was a watershed council action to NOAA fisheries enforcement.

Tatiana explained the basic components of the FAST ALERT system. An email forecast is sent out to all producers daily and contains a seven-day forecast of predicted daily temperatures for four different sites along Fifteenmile and one along Eightmile. At the top of the email is a banner that displays a message stating if there is an ALERT. Once an ALERT has been called out by the email forecast, the FAST coordinator issues a phone call at 9AM and a text message at 8AM through the Call-em-all system. During the ALERT, the coordinator documents flowmeters and enrolled fields with photographic evidence and visual inspections.

Tatiana described the changes from last year that were implemented in the 2018 season. The first change was a redesign of the email forecast to include decimal points and to add lines to distinguish between Upper Fifteenmile, Lower Fifteenmile, and Eightmile sites. The next change was that well water or supplemental water was not allowed during the 2018 season. Tatiana explained that this was due to Oregon Water Law, which states that supplemental water cannot be used until surface water has been exhausted. Enrolling surface water rights in FAST does not constitute 'exhausting the water right', therefore supplemental water cannot be used. Another change to the program was the incorporation of Wy'East RC&D technology. Tatiana explained that she now had access to three different producer's pumping data and demonstrated the program interface with the pump data. This new partnership will help to cut down on the amount of monitoring needed for the program.

Tatiana described the new FAST ALERT monitoring procedure she implemented for the 2018 season. She mentioned that this procedure will likely change again next year as she focuses on making the procedure concise and efficient. The procedure consists of a “Long Monitoring” & “Short Monitoring” processes. They are named after the number of hours they take to complete. Long monitoring takes approximately six hours and short monitoring takes four hours. Both monitoring processes include checking six different Oregon Department of Fish & Wildlife (ODFW) flow gauges and taking the Air and Water Temperature, Flow, Time, and checking for fish. The Long monitoring includes taking photos of enrolled fields and flow meters. This data is documented as a precaution for a potential fish kill. This documentation would prove that the irrigators enrolled were not irrigating during the warmest parts of the summer, thus providing protection for those participating in FAST.

Tatiana explained the FAST enrollment for 2018. She reminded the council of the responsibilities of each option for FAST. FAST option 1 required full commitment and complete curtailment. There were fourteen participants, which was up from the ten participants in 2017. FAST option 2 requires no commitment and irrigators can shut off at their discretion. There were five participants in 2018, which was down three from the eight participants in 2017. Tatiana called to the council’s attention that several FAST 2 participants have changed to FAST 1 for this season. She noted that this was an encouraging trend because it demonstrated a strong belief in the program. She was encouraged that people are willing to engage in the more regulated and potentially more productive option in the program.

Tatiana went on to explain the 2018 FAST season. There were 10 total days in ALERT however, this year was especially unique. Tatiana discussed the week of ALERTS where the ALERT was ON Monday, Wednesday, and Friday through Wednesday (July 23rd, 25th, 27th-August 1st). The ALERT was OFF Tuesday and Thursday. Tatiana expressed her concern that this variation of temperature ALERTS was both confusing and difficult for the producers. Several council members agreed that this situation was undesirable and that solutions should be addressed to prevent the situation in future years. The second ALERT was a two-day ALERT from August 8th-9th.

Tatiana presented a graph demonstrating the *forecasted temperatures compared to the actual measured temperatures*. She explained that she examined the forecast and collected temperature data for approximately one month. The Pine Creek site has a temperature logger that reports average daily temperatures to the forecast model. The graph presented the measured temperature and compared it to the temperature predicted the day of and the temperature forecasted seven days previously. Tatiana discussed the graph and how it shows that the model is very accurate. The graph shows that both forecasted temperatures tracked with the measured temperatures. Tatiana noted that there is not a consistent margin of error and that neither predicted temperature is consistently higher or lower than the measured temperature. She did discuss her concern that there was a temperature spike around July 17th that did not trigger an ALERT.

The council learned about the challenges faced in the FAST program for the 2018 season. Tatiana discussed the challenges with the model during the alerts. These challenges included the variation of ON/OFF for a week and that a weather station went offline for approximately one week. When ODFW rebuilt the model for the new weather station, the email forecast no longer called out ALERT temperatures. There was a day in which ALERT temperatures were predicted, but the email did not call an ALERT. Another challenge faced was the South Valley Fire, which threatened several producers enrolled in FAST. The fire started during an ALERT and some landowners were concerned that if they turned water on for firefighting, they would be penalized. Tatiana explained to the council that she had discussed this situation with OWRD and decided that the FAST program should follow the same

guidelines as OWRD. In her conversations with OWRD she found that using water for fire or another emergency use is considered an “exempt” use, which is allowed even if water rights are out of priority. Tatiana explained that she will be implementing fire language in the contracts next year and will discuss this possibility with landowners at signup. No landowners were penalized for using water during the South Valley Fire or any of the other fires that plagued the county.

Tatiana discussed the solutions for some of the challenges faced in 2018. A meeting between the FAST partners has been scheduled for mid-October to discuss the 2018 changes. These partners include Oregon Department of Fish & Wildlife (ODFW), The Freshwater Trust (TFT), Wy’East RC&D, and the SWCD. Tatiana explained the changes made to the formatting of the emailed forecast, and the changes they are hoping to accomplish in the coming year. Tatiana mentioned the addition of text messages to the program and the addition of dates to both phone calls and text messages.

Tatiana went on to explain the changes and improvements that the program will undergo in the 2019 season. The first change is the funding tiers. To align with instream leasing, junior water rights will be cut from the program and senior water rights will be compensated at a higher rate. Tatiana noted that she will present this information again at the December meeting and have the council vote on the change. The SWCD will be performing the contracting for FAST and contracts will include specific fire language stating that water is allowed in emergency situations. Another change will be the addition of a site visit for new FAST participants to help make monitoring as effective as possible. Tatiana explained that the email forecast will continue to be adjusted to make it more user friendly. Tatiana also discussed the program need for more collaboration with other agencies.

Tatiana concluded her presentation and asked for questions. Stan Ashbrook expressed his concerns regarding the temperature model. Tatiana revisited the graph and expressed her belief that the model was accurate. Stan expressed his appreciation of the program and the efforts of the staff.

Managed Underground Storage Feasibility Study Final Report and Discussion- Jason Keller,
GeoSystems Analysis, Walt Burt & Robyn Cook GSI

Walt began his presentation by explaining that the study has taken a little over a year, and that a draft report has been sent to the SWCD. Walt noted that cost changes will be added to the draft. Walt gave the council a brief background regarding the project. He noted that this presentation was regarding the second half of a program that was focused on determining storage changes. Two different options were explored at length for this portion of the project. The first option was to draw water for irrigation directly. The second option is to put reserved water back into the creek and use the current point of diversions to draw from the creek.

Walt explained where the council had left off at the previous meeting. The biggest issue faced by the team was to ensure that the water was clean, both for regulation requirements and to prevent plugging up the aquifer. The team completed some test pitting and then drilled holes near Fifteenmile creek. They also did some monitoring of irrigation wells during the early season. This allowed them to look at the aquifer connections around the valley.

Walt noted that the team put a lot of effort into researching the direct discharge option. There was a similar study up above Catherine Creek where one stakeholder was concerned about basalt aquifer water coming into the creek due to potential effects of water quality on the fish. Walt explained that in several

informal exchanges with stakeholders, no one has raised concerns with the direct discharge option. Walt noted that nothing has been formalized in terms of this option, but it is an encouraging start.

The exchange option's main concern is the amount of piping needed from the facility to the individual irrigators. The council was curious if either option would allow more junior water rights to be extended throughout the irrigation season. Walt replied that unfortunately the amount of water that would be released would only be enough to protect irrigators in terms of liability to prevent a fish kill. There would not be enough to water to open irrigation to more junior rights.

Walt summarized the Key Elements of the project. The team investigated Regulatory Feasibility to see if the project was feasible in terms of permitting needed. The team found that they cannot pull water from adjacent aquifers, so they focused on specific volumes of water for the intended aquifer. Another key element was water availability in terms of surface water or source water for the purposes of recharge and storage. The team examined the water quality of the source water for recharge and the quality of the recovered water for irrigation or discharge directly into the stream. The team studied the physical feasibility of both the infiltration and treatment options and for the storage aquifer. Finally, the team investigated infrastructure required for the project and the costs associated for the project.

Walt discussed Regulatory Feasibility. There are two permitting processes in Oregon: one for Artificial Recharge (AR) and one for Aquifer Storage and Recovery (ASR). Artificial Recharge allows for both well recharge or surface recharge. AR is defined as a storage request. AR requires that source water must not degrade the water quality of the aquifer used for storage. Walt noted that this can cause uncertainty, as the definition of "degradation" can be broad. AR required a separate secondary authorization for final use after recovery of stored water. There is a 50% exceedance for AR, leaving more water available and a longer storage period. The other option, Aquifer Storage and Recovery (ASR) allows for well recharge only. ASR is defined as a direct use. This option has a more specific requirement for water quality, defined as source water quality cannot exceed ½ of most drinking water standards. It does include source water authorization. There is an 80% exceedance for this option allowing less water to be available. A shorter storage period is also allowed. Walt noted that both processes protect water instream.

Walt explained the findings of Water Availability. There are two methods for looking at water availability based on water availability basin (WAB). They used both Fifteenmile and Ramsey Creek. The estimated months of water available is four to six months. Walt explained that storage reservoirs are reserved for different purposes and they do not know ODA's conditions for usage of the reservoir. This is the next big step in the process. Walt noted that without access to the reservoir the amount of water available is much less and there would only be two months to recharge. Walt did mention that if they do not get permission for the reservoir, the project isn't dead it just isn't as big of a project.

Walt discussed the Water Quality Evaluation. Water quality sampling was performed in the Spring, which was the latter part of the recharge season. Walt noted that summer flows can be different from winter flows. The team sampled for common ions, general chemistry, and metals. There was one site upstream with sampling for the SDWA suite, including pesticides and herbicides. They also got water quality data from the City of Dufur wells, which was not totally comprehensive and got water from an orchard well. The team checked the geochemical compatibility of the creek water mixing with the aquifer water. Walt noted that basalt is typically not very reactive and found no significant adverse reactions were predicted. The team compared to discharge standards, including aquatic standards and clean water standards. They also had several informal talks with people involved with fish. Fluoride is typically the issue for fish,

however there was a consensus that the flow and temperature benefits outweigh the cost. There will be a need to re-oxygenate the water before putting it back into the stream.

Jason explained the Physical Feasibility of the project including the source water diversion, the treatment needed, and the storage aquifer with favorable characteristics. Jason reviewed the three alternatives that were originally presented. The first alternative is vertical wells screened in the alluvial aquifer, the second alternative is horizontal wells placed in the alluvial aquifer, and the third alternative is a surface diversion with passive infiltration and a collection system. The team performed a field characterization which was comprised of 25 test pits, 3 alluvial aquifer test wells, 6 cylinder infiltrometer tests, and laboratory physical and hydraulic testing. Jason mentioned that Josh Thompson of the SWCD also performed infiltration tests to see how fast water moved through the soil.

In digging test pits, the team found that sandy silt soil was near the top, and became more gravelly as the team descended, eventually transitioning to cobble. Under this was either a basalt layer or a cemented sand layer. Water quality samples were taken in the test pits. Jason showed the council a map of the test pit locations along Fifteenmile Creek.

It became apparent to the team that wells would not work to collect filtered water through the creek. Once that realization became clear, the team examined engineered off basin water storage. For the most part soils were conductive, however there was quite a bit of variability of saturated conductivity. The first two options of either vertical or horizontal wells is not feasible due to the number of wells that would be needed, therefore the team further pursued the third alternative.

Jason explained the alluvial aquifer collection rate analysis. There are six assumptions to get to this analysis. They are as follows: 15% of recharged water not recovered, recharge occurs over a four-month period, the saturated hydraulic conductivity is equal to 2.9 ft/day, the site would be located 20ft from the creek, there is a five-foot alluvial aquifer thickness, and there is a five-foot drawdown. With these assumptions the alluvial aquifer should result in a recharge time length of four months and have a recharge rate of 8.5 cfs.

Jason explained the Data Gaps and Next Steps for the project. There are two data gaps which are as follows: the variability in near surface saturated hydraulic conductivity and aquifer filtration effectiveness. The next steps include identifying potential basin sites based on saturated hydraulic conductivity, conveyance costs, land acquisitions or leasing and right of way costs, and compatibility of land use and ownership. Sites that have high priority will undergo cylinder infiltrometer testing to better define infiltration rates. Another next step would be to perform pilot tests to evaluate aquifer filtration effectiveness. Jason showed the council a map of favorable surface areas based on NRCS soils map.

Walt discussed the storage aquifer evaluation. Walt explained that the biggest question is if the aquifer is favorable for storage. The team evaluated potential capacity (injection and recovery rates) and storage volume limitations (to find if the aquifer is excessively bounded). There was a substantial focus on the Grand Ronde Basalt aquifer because it is deeper and less dissected with fewer wells. There are three wells in the valley and they are under 600ft. deep. They measured specific capacity which is a measure of how efficient the well is and how good the aquifer is. The team has found that the aquifer is productive, although Walt expressed his wish to get more accurate measurements and to collect more data from production wells. Walt explained that the estimated range recovery rates was 1,000-3,000 and had been capped at 3,000gpm based on cost and diameter of the well. The estimated range of injection rates were

750-2,250gpm. Walt mentioned that the lower pumping rate, the less energy in and less energy out. The team used 1,200gpm as a baseline, which is a conservative estimate. Walt noted that the Basalt storage aquifer is not the limiting factor, the water treatment will be a limiting factor. Three wells have similar ground water elevations and similar ground water make-up. This means that they are in similar places in the aquifer, belaying the fear that the faults in a basalt aquifer could cause damming. The team found that the aquifer is not excessively bounded due to the similar water elevations and the long-term pumping responses they found at the three wells. Walt hypothesized that the variation in the pumping data could be from the City of Dufur because there are no domestic wells in the Grand Ronde.

Walt went on to discuss infrastructure required for the project. He displayed a picture of an example recharge basin. A new well will need to be constructed because the project cannot use existing wells. Existing wells are likely being used and are probably too tight for the purposes of this project.

Walt explained the costs the team had come up with. Cost of the project lowers with the replacement alternative because there won't be a need to lay pipe and there is more flexibility in placement of the main infrastructure. The cost of the exchange option is estimated at \$0.99M to \$1.39M per cfs. Cost of replacement option is estimated \$0.72M to \$1M per cfs. The total cost of the diversion option to inject 2cfs into the creek is estimated between \$2.27M to \$3.053M. The total cost to divert and inject 8cfs into the creek is estimated between \$7.989M and \$11.1M.

Walt summarized their findings and the additional information needed for each of the categories. They found no fatal flaws in the study. In terms of regulatory success, the AR (Artificial Recharge) pathway might be more desirable. For water availability, the team needs additional clarification on reservation from ODA (Oregon Department of Ag) and OWRD (Oregon Water Resources Department). The team also needed additional information on water quality in terms of treatment options. Additional information is needed for pre-design considerations such as site-specific testing needed for the variability in soil characteristics. There are several uncertainties left in the project. The first uncertainty is the conditions on access to the reservation. The infiltration gallery specifics (size, treatment optimization) are unknown as well as the basalt well specifics (rates, volumes).

Walt summarized the benefits and challenges of the project. The benefits are as follows: temperature and flow (this is a stakeholder interest), scalability, and incremental implementations rather than all at once. The challenge with the project is that the system will require operations and maintenance, legal and figurative ownership, and commitment.

Monte Wasson inquired if this project would benefit all water rights or just if it would only benefit the senior water rights. Walt answered that the original idea was to have enough water to open junior rights when they previously would have been shut off due to low flows, but they found that there isn't a way to put enough water back into the stream to do that. Due to several factors including the losing reach, the additional water would be for the fish, rather than the irrigators. This water would add a buffer to the flows and would add liability protection for the irrigators. Phil expressed his concern regarding the operations and maintenance portion of the project.

Walt described the initial interim steps needed to define full subsurface potential. The first step is to discover the final use of the water either; replacement, exchange, or a combination of the two, and where these will take place. They will need to verify availability and conditions for accessing the storage reservation. Another step will be to identify and work on governance, funding, and operations with project partners. The next step will be to obtain a limited license (AR) for pilot testing. A pilot test would include a small-scale infiltration/treatment system to assess treatment during recharge season. A final

go/no go decision would be based on this pilot testing, before there is investment in basalt wells and other parts of the project. If a project was to be implemented, the first facility would be built around the pilot test results.

Phil inquired about the lifespan of this project, assuming it were implemented. Walt replied with an estimate of 50 years, however he noted that some 40-year-old wells are just as good as new. Mike Kelly inquired about funding for this project. Walt replied that the funding is all done with the wrap up of this study and new grants will need to be found to continue the project.

The council agreed that more input was needed from more irrigators and decided to hold an additional meeting for solely this project on November 6th.

Substation Fire, Long Hollow Fire, and South Valley Fire- Shilah Olson, SWCD

Shilah and Abbie handed out comment cards for those who had been affected by any fires to fill out. Shilah explained that NRCS had requested funding and FSA money has been approved, however there are still gaps where more funding will be needed. Shilah expressed her hope that the district would be able to backfill any other landowner needs with OWEB funds. Potential funding needs include erosion control and to help replace parts of burned CREP projects. Shilah noted that FSA can cost share for boundary fences and NRCS can help to replace inside fences.

Updates & Announcements

Commissioner Steve Kramer mentioned that he had a meeting with Governor Kate Brown and was hoping to share data on the landowners that have been affected by the fires. Steve mentioned that CRP grazing had been allowed for the agriculture emergency state declaration, but he wanted to present any other needs from the producers.

Shilah Olson gave a brief summary of her trip with OWEB to Washington D.C. and gave a brief synopsis of the meeting the District had with Greg Walden.

Phil asked the council if there were any questions and then adjourned the meeting at 8:30.

The next watershed council meeting will be held on **November 6th, at 6:00PM**

Minutes Prepared by Tatiana Taylor