

Council Study Session

November 6, 2017

Title:	Water Treatment Plant Siting and Status Update	
Item Type:	Informational	
Requested by Council?	Indirectly	
From:	Paula C. Brown, PE	Public Works Director
	paula.brown@ashland.or.us	

Summary:

Before the Council is a summary update on the status of the proposed supplemental 2.5 million-gallon a day (MGD) water treatment plant (WTP) and Crowson II reservoir siting study (Project # 2015-31). The supplemental water treatment plant and storage reservoir are priority projects in the approved water master plan.

Discussion Questions:

The issue is the ability to provide clean water reliably to the City today and for the next 20-50 years. The City has an outstanding water quality staff and operates the plant and distribution system well. The existing plant is in a less than optimal site but has performed well in all but the most extreme circumstances. As such;

- Is council willing to look at viable options at the existing plant site?
- Is council determined to build a 2.5MGD supplemental water treatment plant and run two plants in the City for the next decade?
- Would Council like to build a new plant regardless of cost?

Resource Requirements:

The current adopted biennium budget appropriates a total of \$22,674,000 dollars for the engineering and construction of a new 2.5 MGD supplemental water treatment plant and proposed 2.6 MG Crowson II water storage reservoir. To date expenditures for the water treatment plant and reservoir siting study total \$525,140. These expenditures are valid and will inform staff through the remainder of the water treatment plant study and water master plan work.

Suggested Next Steps:

With the completion of the Talent Ashland Phoenix (TAP) Intertie, a change in public works leadership, and a renewed fiscal interest in the events leading to this decision, staff proposed a suspension on the current plan for a supplemental plant and a deeper investigation into the existing water treatment plant and remaining life of that plant and its ancillary facilities.

Unless otherwise directed, staff will proceed forward to obtain a comprehensive cost comparison from RH2 Engineering as shown in detail under "next steps." Once this cost comparison is

completed, staff will return to Council (likely February 2018) with a recommendation to proceed.

Policies, Plans and Goals Supported:

The projects presented above represent the development and subsequent Council approval of the 2012 Comprehensive Water Master Plan Update. The water master plan update was the culmination of a multiyear effort between Carollo Engineers, AWAC and city staff. Staff is currently in the process of completing a new Water Master Plan Update with RH2 Engineers.

Council Goals:

4. *Evaluate real property and facility assets to strategically support city mission and goals.*
22. *Prepare for the impact of climate change on the community.*

Department Goals:

- Maintain existing infrastructure to meet regulatory requirements and minimize life-cycle costs
- Deliver timely life cycle capital improvement projects
- Maintain and improve infrastructure that enhances the economic vitality of the community
- Evaluate all city infrastructure regarding planning management and financial resources

Background and Additional Information:

The 2012 Water Master Plan developed the recommendation for a supplemental 2.5 MGD water treatment plant and 2.6 million gallon (MG) Crowson II storage reservoir as part of the final capital improvement plan. The 2.5 MGD plant was sized to assist the City in meeting peak projected water usage in the summer seasons and meant to operate year round with the existing plan operating as required to meet system capacity requirements past 2.5 MGD. It was expected the 2.5 MGD plant would be expanded to a full 10 MGD sometime in the future, and the existing water treatment plant phased out of operation. Based upon the prior water master plan, the Crowson II reservoir was initially assumed to be sized for 2.6 MG of potable water storage. Further analysis by RH2 showed that Crowson II was unnecessary, although the need for reservoir improvements will be assessed with the current Water Master Plan evaluation.

The City obtained low interest financing from the Infrastructure Finance Authority (IFA) for Engineering and construction of the water treatment plant. The loan was in the amount of \$14,811,865 with a 1.79% interest rate and \$1,030,000 in principal forgiveness. The Council authorized the IFA loan at the June 7, 2017 Business Meeting. Staff has not secured financing for the storage reservoir and will look to do so in the future once the reservoir size and full need has been determined. The Council approved a financing resolution at the December 6, 2016 Business Meeting that allows for the reimbursement of funds towards the reservoir project to be “reimbursed” once financing is obtained. This financing resolution allowed the project to proceed.

Through a formal selection process the City awarded Keller Associates stage 1, preliminary Engineering of the new treatment plant and reservoir, reference March 21, 2017 Council Communication. Keller Associates was given notice to proceed on the preliminary engineering

of the 2.5 MGD WTP and Reservoir on March 22, 2017. This project had three phases; 1) determine the treatment process for the new WTP, 2) conceptual site selection, and 3) the evaluation of repurposing the TID line; in addition, the contract was amended to include the evaluation of membrane filtration pilot support. With the addendum, the contract price is \$427,825. Award of subsequent contract stages was not guaranteed to Keller Associates.

To date the consultant team from Keller Associates has worked with staff on the siting and preliminary engineering associated with the 2.5MGD treatment plant and reservoir. Numerous workshops have been held with public works staff to determine an appropriate site for development of the new water treatment plant. Three specific sites (all city owned property) were analyzed and compared against each other for placement of the future water treatment plant (Granite Pit site, Asphalt Pit site, Concrete Pit site) reference attachment 3 site map. The same treatment plant train and plant sizing was used for each of the three proposed locations to generate an apples-to-apples comparison.

Criteria were established to compare the proposed site alternatives. Criteria included; capital cost, operations and maintenance costs, environmental/carbon footprint, expandability, access and impacts to existing development.

Subsequently, and as identified in the original request for qualifications, RH2 Engineering was hired to perform peer review on the preliminary engineering work of Keller Associates. RH2 Engineering also competed and was selected through a separate request for proposals process to complete the City's comprehensive Water Master Plan Update. RH2 Engineering has finished peer review of the first phase of Keller Associates' work and is in the process of completing the Water Master Plan.

Keller Associates is currently in the process of addressing comments generated by RH2 Engineering to complete the preliminary design report for the siting of the new plant and reservoir. This will generally complete the phase I analysis and the membrane pilot will be completed in December.

AWAC:

The Ashland Water Advisory Committee (AWAC) continues to be apprised of the status of the project and the preliminary siting study information was presented at their June 27, 2017 meeting. On the August 22, 2017 meeting, staff took AWAC members on a site tour of the proposed supplemental plant location and existing treatment plant. AWAC met again on September 26, 2017 and the members were brought up to speed on the current status of the Keller contract and the Master Plan.

The existing recommendation is to construct a supplemental water treatment plant for 2.5 MGD and construct a 2.6 MG reservoir. The proposal includes running both the new supplemental plant and also maintaining the existing plant.

With a change in public works leadership, completion of the Talent Ashland Phoenix (TAP) Intertie, and a renewed fiscal interest in the events leading to this decision, staff proposed that we take a pause to allow a deeper investigation into the problem we are trying to solve, the existing

plant and remaining life of that plant and its ancillary facilities. Staff asked AWAC for concurrence to suspend the current decision and make a comprehensive cost comparison for a single new 7.5 MGD plant and decommissioning the existing plant as opposed to making improvements to the existing plant for a 20-year life which includes upgrades to the treatment process, and necessary facility improvements to sustain potential earthquake and flooding damage.

After general discussion and better understanding of staff's request for defined fiscal responsibilities, AWAC unanimously supported staff's request.

Next Steps:

Staff has moved forward on obtaining a competitive cost comparison. As time is a factor and as RH2 Engineering has completed the peer review and has the background on the proposed supplemental plant and new reservoir, they have been asked to provide a scope and cost to provide the full cost comparisons for the following:

1. A new 7.5 MGD plant (full operational needs) with comparable treatment process to the existing plant including operations and maintenance costs for 20 years
 - a. Include time to construct and cost to keep the existing plant operational
 - b. Include costs to decommission the existing plant
2. Evaluate the life of the existing plant – can it be renovated for a 20-year life to treat 7.5 MGD
 - a. Include operational seismic upgrades; flood protection, fire, etc.
3. Identify risks to each option
4. Do not cost "like" options (doing exactly the same thing to both options)

Once a cost comparison is completed, staff will return to Council (likely in February 2018) with recommendations on the next steps.

Attachments:

- IFA (Infrastructure Award Authority) Award Letter dated April 22, 2016
- Conclusions and Recommendations, Section 9, Preliminary Design Report-Siting Study
- Preliminary site map (Granite Low Plant Option-Preferred)
- AWAC Minutes, September 26, 2017



April 22, 2016

Mr. John Stromberg, Mayor
City of Ashland
20 E. Main
Ashland, OR 97520

RE: Award for Safe Drinking Water Revolving Loan Fund, New 2.5 MG Water Treatment Plant, Project #S16021, (\$14,811,865), April 21, 2016

Dear Honorable Stromberg:

Congratulations on the City's successful application for the above-referenced project to design and construct a new 2.5 million gallon Water Treatment Plant.

The award consists of a loan of \$13,781,865 and a forgivable loan of \$1,030,000. The interest rate on the loan will be 1.79% for a maximum term of 30 years. The full terms and conditions of the City's award are contained in a contract, which will be sent to the City shortly for your signature.

Please note that the legal obligations for funding and for reimbursement of project expenses are subject to execution of the contract.

The City's project is being administered through the Infrastructure Finance Authority. We encourage the City of Ashland to offer appropriate media opportunities to help build public awareness of the project's purposes and benefits. Please notify us of any event celebrating the project.

As always, we are available to answer questions that may arise during the implementation of the project. If you need assistance, please do not hesitate to contact me at 541-882-1340 or by email at mary.a.baker@oregon.gov

Sincerely,

A handwritten signature in black ink that reads "Mary Baker".

Mary Baker, Regional Coordinator
Infrastructure Finance Authority

enc. Copy of Staff Recommendation

c: Mr. Michael Faught, Ashland Public Works Director
Mr. Scott Fleury, Ashland Public Works Department
Ms. Patricia Foley, Rogue Valley Council of Governments
File

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SECTION 9: CONCLUSION AND RECOMMENDATION

After reviewing the suitability of the proposed sites, Keller Associates worked with City staff to identify factors that should be considered in selecting the preferred treatment plant site. These factors included capital costs, O&M (power) costs, environmental/sustainability impacts, expandability, access, and impacts to the public.

Table 3 shows the comparative capital costs and power costs for each site. These costs include major transmission piping (onsite and offsite), access roads, and site development costs for both the treatment plant and the Crowson II reservoir. More detailed cost breakouts are included in Appendix F of this report.

Table 3 – Capital and O&M Costs (Site, Piping, and Power Only)

	Concrete High	Concrete Low	Granite High	Granite Low	Asphalt Pit
Site (Ex/Backfill, Rdwys, Rting Wall, Site Imp.)	\$ 2,951,000	\$ 3,248,000	\$ 4,140,000	\$ 2,704,000	\$ 4,625,000
Offsite & Major Yard Piping / Offsite PRV Station ¹	\$ 3,399,000	\$ 3,727,000	\$ 4,194,000	\$ 3,692,000	\$ 3,405,000
Pumping Station	\$ 888,000	\$ 1,462,000	\$ 888,000	\$ 888,000	\$ 1,615,000
Subtotal	\$ 7,238,000	\$ 8,437,000	\$ 9,222,000	\$ 7,284,000	\$ 9,645,000
Contingency (30%)	\$ 2,172,000	\$ 2,532,000	\$ 2,767,000	\$ 2,186,000	\$ 2,894,000
Construction Costs	\$ 9,410,000	\$ 10,969,000	\$ 11,989,000	\$ 9,470,000	\$ 12,539,000
Engineering (23%)	\$ 2,165,000	\$ 2,523,000	\$ 2,758,000	\$ 2,179,000	\$ 2,884,000
Total Project	\$ 11,575,000	\$ 13,492,000	\$ 14,747,000	\$ 11,649,000	\$ 15,423,000
Pumping Power Costs (20 yrs) ²	\$ 104,000	\$ 512,000	\$ 92,000	\$ 98,000	\$ 1,052,000
20-Year Comparative Life Cost	\$ 11,679,000	\$ 14,004,000	\$ 14,839,000	\$ 11,747,000	\$ 16,475,000
1. Concrete Low and Asphalt Pit Sites include a small PRV station. 2. Pumping Cost are based on a 4MGD flow 24/7. Discount rate was assumed to be equal to the inflation rate to arrive at the 20-Year Comparative Life Cost. 3. Costs are in 2017 dollars.					

Power costs assume that the available head from the Tailrace is preserved where feasible. For the Concrete Low and Asphalt Sites, the pressure head would need to be cut to limit pressures to no greater than 65 psi entering the membrane facility. This results in higher power costs for these alternatives. It should be noted that if conventional treatment processes are selected, it would likely be necessary to break head somewhere within the treatment plant. Consequently, the annual power costs over the 20-year life of the facility would increase as shown in Table 4.

Table 4 – Added Power Cost for Conventional Treatment

	Concrete High	Concrete Low	Granite High	Granite Low	Asphalt Pit
Added Pumping Power Costs (20 yrs) ¹	\$ 436,000	\$ 956,000	\$ 448,000	\$ 1,018,000	\$ 936,000
1. Added pumping cost based on a flow of 4 MGD. Discount rate was assumed to be equal to the inflation rate to arrive at the 20-Year Comparative Life Cost. 2. Costs are in 2017 dollars.					

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The two most attractive alternatives from a life cycle cost standpoint appear to be the Concrete High and Granite Low Sites. It should be noted that a new concrete bridge/culvert structure was included in the cost estimate for granite sites to mitigate the City's concern of the culvert historically washing out where Horn Creek Road crosses Ashland Creek in the canyon.

A pairwise comparison process was employed to compare each site in terms of the selection criteria mentioned above. This process included an evaluation of selection criteria to develop overall weighting (see Table 5). A similar comparison process between alternatives was developed for each selection criteria. Scoring in the pairwise comparison is as follows:

- 1 Alternative is much worse than the one being compared to.
- 2 Alternative is a little worse than the one being compared to.
- 3 Alternatives are comparable.
- 4 Alternative is better than the one being compared to.
- 5 Alternative is much better than the one being compared to.

For Ashland's capital cost, the ranking went as follows. Similar comparisons of each criteria were developed with input from City staff. (see Capital Costs Row in Table 5):

- Capital Costs compared to O&M Cost – Capital Costs is more important than O&M cost resulting in a score of 4.
- Capital Costs compared to Env./Sust./Carbon – Capital Costs is less important than Env./Sust./Carbon resulting in a score of 2.
- Capital Costs compared to Expandability – Capital Costs is more important than Expandability resulting in a score of 4.
- Capital Costs compared to Access – Capital Costs is more important than Access resulting in a score of 4.
- Capital Costs compared to Impacts to Ex. Develop. – Capital Cost is more important than Impacts to Existing Development; resulting in a score of 4.

Table 5 – Weighting Criteria

	Capital Costs	O&M Cost	Env./Sust./Carbon	Expandability	Access	Impacts to Ex. Develop.	Totals	Weights (%)
Capital Costs		4	2	4	4	4	18	20%
O&M Cost	2		2	4	3	4	15	17%
Env./Sust./Carbon	4	4		4	3	5	20	22%
Expandability	2	2	2		2	4	12	13%
Access	2	3	3	4		4	16	18%
Impacts to Ex. Develop.	2	2	1	2	2		9	10%
							90	100%

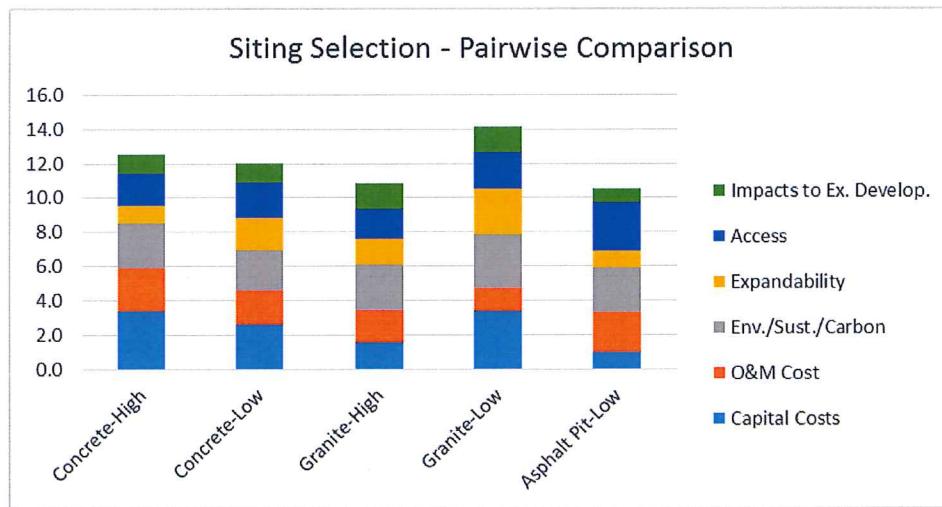
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Appendix E shows the scoring for each selection criteria. Table 6 and Figure 19 show the summary results. **Granite Low scored the highest and is the preferred site**, while Concrete High was ranked second. Both sites have comparable site development costs and retain the available energy from the existing treatment plant Tailrace, allowing for gravity flow conditions for much of the time. Granite Low has a much larger developable area which allows for better site access, more flexibility in building layouts and greater expansion potential. Moving forward, predesign of the new treatment plant and offsite piping will focus on the Granite Low Site.

Table 6 – Summary Scoring

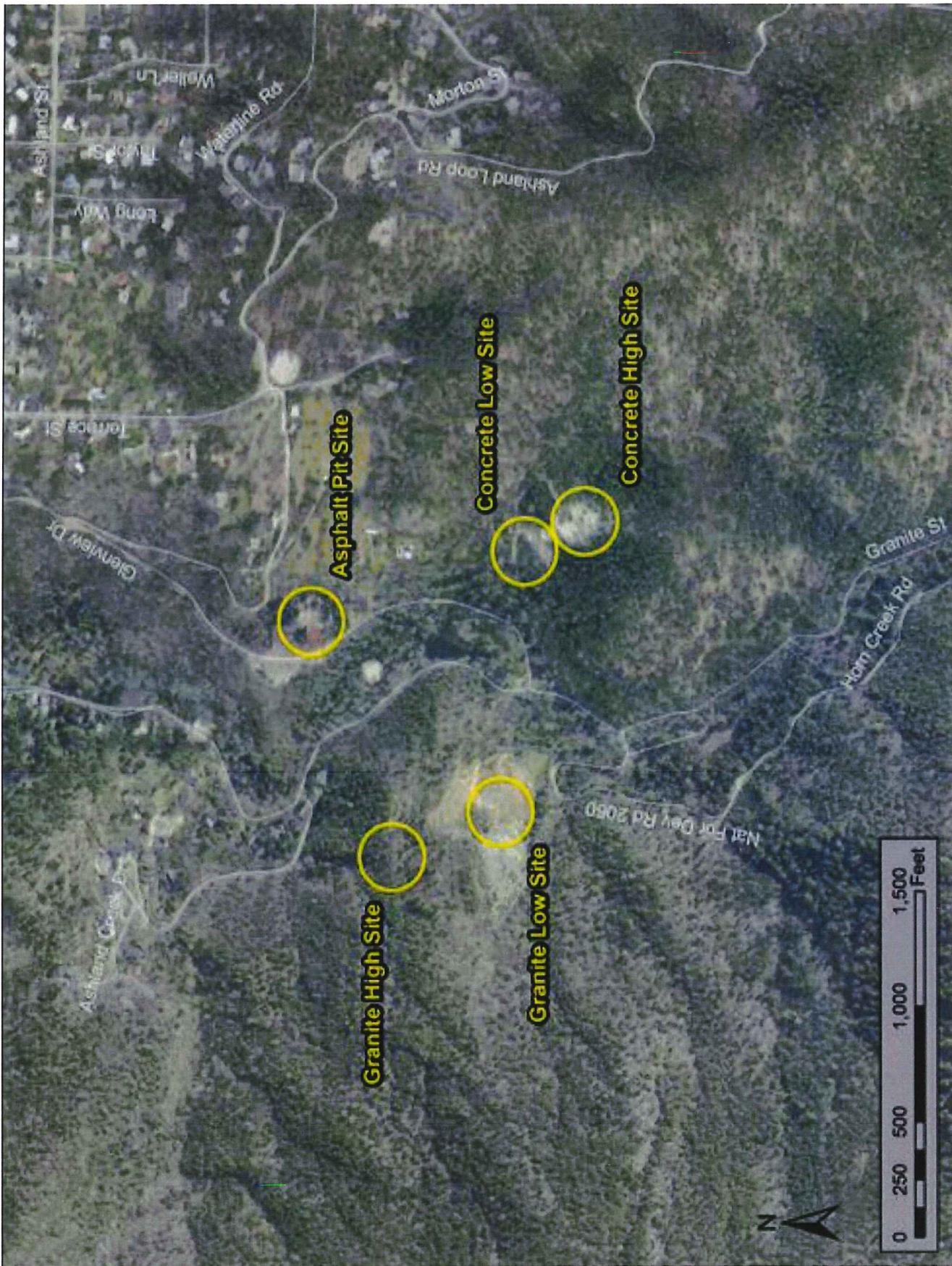
	Capital Costs	O&M Cost	Env./Sust./Carbon	Expandability	Access	Impacts to Ex. Develop.	Total
Concrete-High	3.40	2.50	2.59	1.07	1.87	1.10	12.5
Concrete-Low	2.60	2.00	2.37	1.87	2.04	1.10	12.0
Granite-High	1.60	1.83	2.67	1.47	1.78	1.50	10.8
Granite-Low	3.40	1.33	3.11	2.67	2.13	1.50	14.1
Asphalt Pit-Low	1.00	2.33	2.59	0.93	2.84	0.80	10.5
							60.0

Figure 19 – Summary Scoring



Crowson II Considerations

In order to get a more complete picture for the costs to develop the sites, the tank access road, piping to and from the tank, and tank excavation costs were also included. For the Granite Low Site, this accounts for approximately 30% of the site development capital costs, or \$3,520,000 of the \$11,544,000 total. We also understand that the final tank size has not yet been determined and the City is considering a potential future Crowson III reservoir site adjacent to the Crowson II reservoir. A preliminary review of the proposed granite sites' tank location suggests that two 3 MG tanks could be accommodated. Depending on the selected treatment disinfection technology, construction of Crowson II may not be required, which could allow Crowson II improvements to be completed at a later date.





ASHLAND WATER ADVISORY COMMITTEE
September 26th, 2017

CALL TO ORDER

John Williams called the meeting to order at 4:03 PM

Committee Members Present: Darrell Boldt, Joe Graf, Rich Miller, Pat Acklin, Alex Amarotico, Kate Jackson, John Williams (chair), Don Morris, Michael Morris (Council liaison)

Committee Members Absent: Donna Rhee

Staff present: Tami De Mille-Campos, Scott Fleury, Steve Walker, Michael Morrison, Greg Hunter, Kevin Caldwell, Julie Smitherman, Paula Brown

Staff absent: None

Consultants: Jeff Ballard (RH2)

ANNOUNCEMENTS

Paula Brown gave background on herself and the committee then gave around the room introductions.

APPROVAL OF MINUTES

June 27, 2017

Boldt/Graf m/s to approve minutes. Approved unanimously.

PUBLIC FORUM

None

NEW 2.5 MGD WATER TREATMENT PLANT/CROWSON II RESERVOIR PROJECT UPDATE

Brown shared with the committee that she has been back as Public Works Director for three weeks and one of the things she asked about when she became Director was where are we and what has been happening. In the past three weeks a few things have happened which brings her to recommend taking a pause and allow time to finish the siting study which should be finalized before the next meeting. Keller and Associates lost an intricate member of the group and because of this staff felt it was appropriate to part ways with Keller and look at what phase II brings. With phase II we need to look closer at what problem the committee is looking to solve and why we would want to build a new plant while continuing to operate the old plant. She is a bit perplexed as to why we would operate two plants for a town of our size. She is proposing a phase II for the committee which would be a much deeper review and would include hiring a new consultant to evaluate our existing plant from the standpoint of what lifespan does that plant have left and what risks currently exist and look at what is fiscally responsible.

Brown said a lot has changed since the committee re-formed, one of the biggest things is we now have TAP (Talent Ashland Phoenix Intertie). Brown would like the committee to look at what the policy is for using TAP and what is the realistic expectation for TAP. She wonders how we should best use it, if we are “paying for it’ maybe we should be using it more than we are. She feels there should be a more detailed analysis and doesn’t feel we have the necessary information right now to move forward with a new

plant. Brown questions if the old plant won't last longer than ten years, should we decide to scrap it and just build a new one or if it turns out that the existing plant will last twenty years, then it may be a good deal to keep the old plant and not build a new plant. If the old plant will last between ten and twenty years for a reasonable price then that is a debate we may need to have. She suggests that we spend roughly fifty to seventy five thousand to do a detailed study of a fifty year time period and what the costs of retrofitting the old plant would be versus building a new plant. This study could take three to six months with a new consultant. She is going to put together an RFP (request for proposal) before the next meeting.

There was discussion amongst the committee regarding what has transpired since the committee began its work and Brown said she had a pretty good handle on what this committee has been looking at and in her discussions with support staff she has looked at risk versus affordability and she doesn't feel comfortable moving forward without taking a deeper look at what is best for the community. Acklin shared when they came up with the plan they didn't think there was a good enough solution to the flooding, landscape, seismic issue and they felt like that was a precarious place for the sole treatment plant to be, the thinking was that we have to find another location at some point because it is susceptible. She agreed that several things have changed since they made their original recommendations, including TAP. She also feels if we do not know more about what citizens are willing to conserve we will know a lot more in the future as a result of the computer modeling which is currently underway. While this committee has discussed TAP, they have been circular discussions and the committee hasn't necessarily arrived at a conclusion for how often we use it. She feels it would be foolish to not stop and look more carefully. Graf shared he thought the vision of this committee always was that there would be one plant (the new plant) and the recommendation that came out was a compromise because there was a lot of difficulty amongst the committee in regards to TAP and other things. They landed on 2.5mgd largely because that was the average winter consumption. He doesn't think anyone had any desire in operating two plants long term. Williams shared that for him the idea of a new treatment plant came out of an economic analysis and when looking at the cost of continuing to use the old treatment plant, given the information that was available at that time, it was so close to the cost of building a new treatment plant with the additional advantages of a new treatment plant that was a no brainer for him and that is why he supported that recommendation. Brown said she would love to have a new 7.5mgd treatment plant that does everything we want it to but she would be remiss in not taking these options and the various cost options to City Council. Jackson shared as a continuing member of this committee she feels we need to understand how the decision was made, she can't recall how they decided, other than what Graf eluded to which was there was a lot of disagreement. She's wondering how the committee should reopen the discussion without revisiting all of the old arguments. Councilor Morris recalled at the Council level the discussion was all about the redundancy of running two plants. He shared that he never saw enough of the technical side. His personal opinion is he has always felt that Ashland's problem isn't the impoundment of treated water but it is more the impoundment of untreated water (reservoir) but he never saw real numbers on that at the council level. Boldt shared that when the committee started this process there were

two key factors they were keeping in mind were reliability and redundancy and based on the information they spent a lot of time looking at different options for conservation and with climate change coming along we know that is going to be even more critical. The information they got on the existing plant all weighed into the fact that it has a limited life span that won't be easily extended which then made a lot more sense to phasing the old one out and building a new plant. The redundancy part of the equation was TAP and now that TAP is in place this changes the equation. He is never opposed to going back and revisiting something just to verify that we are going in the right direction. He agrees with Brown's recommendation to step back and make sure the right decision is being made and it is justifiable.

Brown estimated this cost analysis would probably take three to six months and cost maybe fifty to seventy-five thousand. Ballard said a seismic evaluation creates a whole different level of evaluation. Williams said there was a lot of talk about how much money was going to need to be spent on keeping the old plant going and it was adding up and they just want to make sure that even if it does have some lifespan left that it makes financial sense. Brown doesn't believe we have spent bad money at the existing plant and this plant has served the city well through three floods in recent history, there is capacity that may be untapped and there are risk issues that haven't been fully addressed but we owe it to the community to spend the money wisely. Graf said he expected this committee would have to wrestle with the notion of a 2.5mgd plant and it sounds like this is the data staff feels they need in order to make a recommendation and he is fully supportive of moving ahead with this study. He also indicated he has always thought operating two plants is a bad idea. Acklin said as she remembers the process, Pieter Smeenk was instrumental in helping us get what we needed out of Carollo. Brown said the information we have from Carollo and Keller is great information and not something you throw out but she isn't sure if it went deep enough, but we can go deeper. Brown will draft the phase II RFP and hopefully get it out for publishing before the next committee meeting. If there are things that she missed we will bring it back and get those added. She will give an update to the City Administrator and then the plan would be to take it to the November 6, 2017 Council Study Session for their input. The committee voiced unanimous agreement for Brown to draft the phase II RFP.

WATER MASTER PLAN UPDATE

Jeff Ballard, Rh2 Engineering passed around a handout (see attached) and Brown passed around the original committee charter (see attached).

Ballard shared they have all the information they need and the modeling is going through the final steps of calibration and then they will move on to the system evaluation. They are in the process of working with the conservation consultant and should be able to bring that information to the October meeting. He is continuing to build the Water Master Plan Update document itself, but the conservation element will be a big part of it. Thus far there haven't been many surprises, there could be some zone change recommendations made but other than that the system is fairly simplistic with the water all flowing downhill.

Ballard presented the Level of Service Goal recommendations (see attached), those shown in red are his recommendations.

Walker shared that cross-connection (backflow) is really important to make sure we don't have a user who infects the entire supply. Currently we satisfy the Oregon Health Authority regulations requirement which is that we have a database that tracks the testing of the backflow devices that we know of in town. One of the areas that this community hasn't gotten to is going around property by property and identifying hazards on that property and ensuring the homeowner has the proper level of protection installed. That is a huge task and politically it is a hot topic if not handled properly, there is a lot of public outreach to be done to ensure it is handled properly. He said that is a pretty simplistic explanation of it but he hopes this is something we can take a look at in the future. Brown said in addition to the water plant having cross connections, the waste water plant also has cross connection issues. She thinks we will at some point be asking Council to update the ordinances to give the City permission to monitor, check and report on every residential backflow situation, along with the public outreach component which the water conservation division has already been trying to do when they are out with property owners doing irrigation audits.

Acklin asked what the potential is to have power generated with all of our gravity flow. Ballard answered that we started to go down that path as part of the water master plan update, he isn't against evaluating it but where they landed is that within the existing system we have limited locations where there is steady flow which is needed to generate good power. The City's system operates on pressure reducing valves (PRV's) so it allows water to come through as there is demand, you need a large volume of water at a consistent flow rate. There are places where you could generate power but it comes down to cost effectiveness. Graf said with the Climate Energy Action Plan (CEAP) we are going to desperately be looking for ways to save energy and this may come up again because we may come up against a limit as to where we are going to save. Brown said she would like to explore that but that would be a future phase to the plan. Williams said we spent a lot of time talking about a fifty year climate prediction study for our watershed and staff may want to research and see if they did a more recent study during the CEAP process. Ballard said they are using updated climate data for the supply model and so we will want to make sure to have that conversation at the end of next month to make sure we are consistent with what Williams is talking about.

Brown asked the committee to review the original committee charter (year 2010 estimate) handout between now and the next meeting and come back to the next meeting with any questions or comments.

Meeting adjourned at 5:40 pm
Respectfully submitted,
Tami De Mille-Campos
Public Works Administrative Supervisor