

Council Study Session

April 1, 2019

Agenda Item	Ashland Canal Piping Project Alternatives	
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Item Type	Requested by Council <input checked="" type="checkbox"/> Update <input type="checkbox"/> Request for Direction <input type="checkbox"/> Presentation <input type="checkbox"/>	

SUMMARY

Before the Council is a consolidated analysis of the Ashland Canal Piping Project alternatives from the last 14 months of work. Staff has also developed responses to several new questions from Council (see attachment 1) from the study session presentation on February 4, 2019. At that study session, staff presented Council with a project summary and summaries of the engineering and natural resources challenges, and public comments, all of which are available on the City’s website. Staff has worked closely with a team of very capable engineers, surveyors, and technical experts to analyze the complexities of this project. Staff relied on the Ashland Canal Advisory Group (see attachment 2) to assist throughout the process.

Staff will review a short presentation (see attachment 3) of the project goals and location, review the current conditions, update council on community input and answers to previous council questions, go over the net present value (NPV) costs over a 60-year life cycle, and pros and cons for each of the following alternatives:

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|-------|---|-----------------------|
| Alt 1 | Replace the entire canal with all new 24” HDPE pipe | NPV cost: \$3,472,529 |
| Alt 2 | Replace open sections of canal with new 24” and 30” HDPE pipe and line existing piped sections | NPV cost: \$4,339,897 |
| Alt 3 | Replace open sections of canal with urethane under-liner and new concrete channel, line existing piped sections: canal remains open | NVP cost: \$4,334,379 |
| Alt 4 | Aggressively maintain existing canal; phase concrete repairs over the top of existing concrete canal channel | NVP cost: \$3,004,658 |

PROJECT GOAL

The goals of the canal piping project are to:

- 1) reduce the amount of contaminates that enter the City owned section of the canal, and
- 2) conserve a significant amount of water currently lost primarily through seepage.

By replacing 10,700 feet (approximately 2 miles) of the existing canal with a below ground pipe, additional water contamination will be removed, and water conservation and efficiency goals will be realized and a vital piece of water infrastructure that delivers an alternate raw water supply to the City’s water treatment plant will be fully replaced.

POLICIES, PLANS & GOALS SUPPORTED

City Council Goals:

Allocate resources to essential services: drinking water system

Continue to leverage resources to enhance value service: address climate change (tier 1), and water conservation (tier 3)

BACKGROUND AND ADDITIONAL INFORMATION

The City of Ashland places priority on improving water quality and efficient water management. As identified in the City's adopted 2012 Comprehensive Water Master Plan, piping the front section of the Ashland Canal (approximately 10,700 lineal feet) from Starlite Place to Terrace Street is intended to meet the goal of improving water quality in Ashland Creek and overall water efficiency. In years when water supplies are limited, the Ashland Canal is used as a supplemental water source. The water is treated to drinking water standards at the City's Water Treatment Plant (WTP). Raw water in an open canal is vulnerable to contamination from a variety of sources. These contaminants reduce the water quality of Ashland Creek. Ashland Creek routinely exceeds the State's maximums for E. coli bacteria in the summer months. Additionally, open canals are susceptible to water losses through seepage and evaporation. Water losses in the Ashland Canal are approximately 23% (91% of the loss is from seepage and 9% from evaporation).

At the [August 1, 2017 business meeting](#), Council authorized a DEQ Clean Water State Revolving Fund (CWSRF) loan of \$1.3 million to complete the Ashland Canal Piping project. At the January 16, 2018, business meeting, staff received Council approval to award a professional services contract to Adkins Consulting Engineering, LLP (\$192,257). In addition, staff entered into a contract with StingRay Communications (\$31,000) to assist with strategic communications and public outreach, and with Siskiyou BioSurvey for a vegetation and tree assessment (\$14,790). The Southern Oregon University assisted with a wildlife survey. To date, the preliminary engineering and miscellaneous project expenses total \$238,047.

PROJECT BACKGROUND

The City owns and operates a gravity fed concrete lined canal constructed in the early 1900s, which was originally intended for irrigation purposes. The Ashland Canal receives water from the Talent Irrigation District (TID). This water originates at Hyatt and Howard Prairie Reservoirs. The City has a contract to receive up to 1,369 acre-feet of water from the TID. Currently, the City purchases this water from TID for \$51.17 per acre foot (\$0.20/1000 gallons) of water delivered to the City's point of delivery at Starlight Terrace. The cost of this water once pumped, treated and delivered to City residents is \$0.40/1000 gallons. By comparison, the City also can use treated water from the Medford Water Commission through the City's TAP (Talent Ashland Phoenix) pipeline at a cost of \$1.15/1000 gallons.

The City's section of the canal is located primarily within easements on private property. The majority of the easements describe a tract of land that is 10 feet on either side of the canal centerline for a total width of 20 feet. These easements allow for the construction, maintenance and operation of the canal across private property, and only grants the City access to the property. The City's canal section within the project area is approximately 2 miles in length beginning near Starlite Terrace and terminating at the wet well at the Terrace Street Pump Station. The existing concrete liner varies in condition from fair to poor with isolated sections of cracking mostly caused by tree roots or failing subgrade. Currently there are some sections of the canal that are piped under roads or driveways, they consist of several segments totaling 3,350 linear feet. In addition to the City's public utility easement, portions of the Ashland Canal also have recreational trail easements granted to the Ashland Parks and Recreation District from property owners. However, there are large sections of the Canal without trail easements.

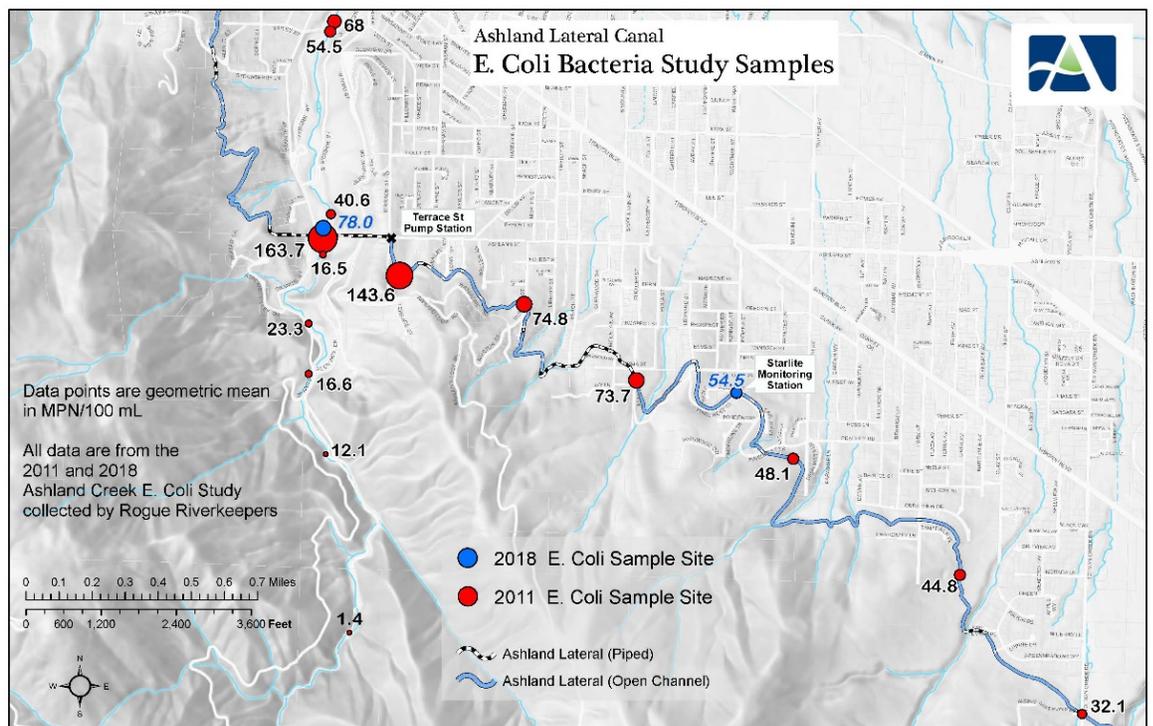
The Canal is in operation seasonally from April through October in most years and is based on TID’s water availability. When the Canal is in operation there is continuous flow into Ashland Creek from the Terrace Street Pump Station, which is necessary to account for the fluctuating canal flows into our wet well, as well as fluctuations in the demand for water from the irrigation customers along the canal.

It is a common misunderstanding that residents think they have “water rights” to the Canal water. The City and Southern Oregon University (SOU) have water rights, whereas, the residents who receive water from the Ashland Canal are purchasing the municipal irrigation water from the City, but do not have actual water rights. Being a municipal water right, the City can supplement the raw water supplied to the City’s Water Treatment Plant with canal water to help offset the use of Reeder Reservoir (Ashland Creek water) and treated water purchased from Medford Water Commission through the Talent Ashland Phoenix (TAP) pipeline. All raw water is treated through the City’s Water Treatment Plant. In recent years, Canal water has been pumped to the Treatment Plant in 2009, 2013, 2014, 2015 and 2018.

Raw water in an open canal is vulnerable to contamination from a variety of sources and reduces the water quality of local waterways. Additionally, open canals are susceptible to water losses through seepage, evaporation and transpiration by vegetation. Like many other local waterways, Ashland Creek routinely exceeds the State’s maximums for E. coli bacteria in the summer months. The City regularly samples Ashland Creek for bacteria and posts public health notices along Ashland Creek when Oregon Health Standards are exceeded.

The Ashland Creek E. coli Bacteria Study (2011 Rogue Riverkeeper) shows that the Ashland Canal is a major contributor of E. coli into Ashland Creek. The Study also shows that E. coli concentrations increase from Tolman Creek Road to the Canal outfall into Ashland Creek. It is suggested that pet and/or animal waste adjacent to

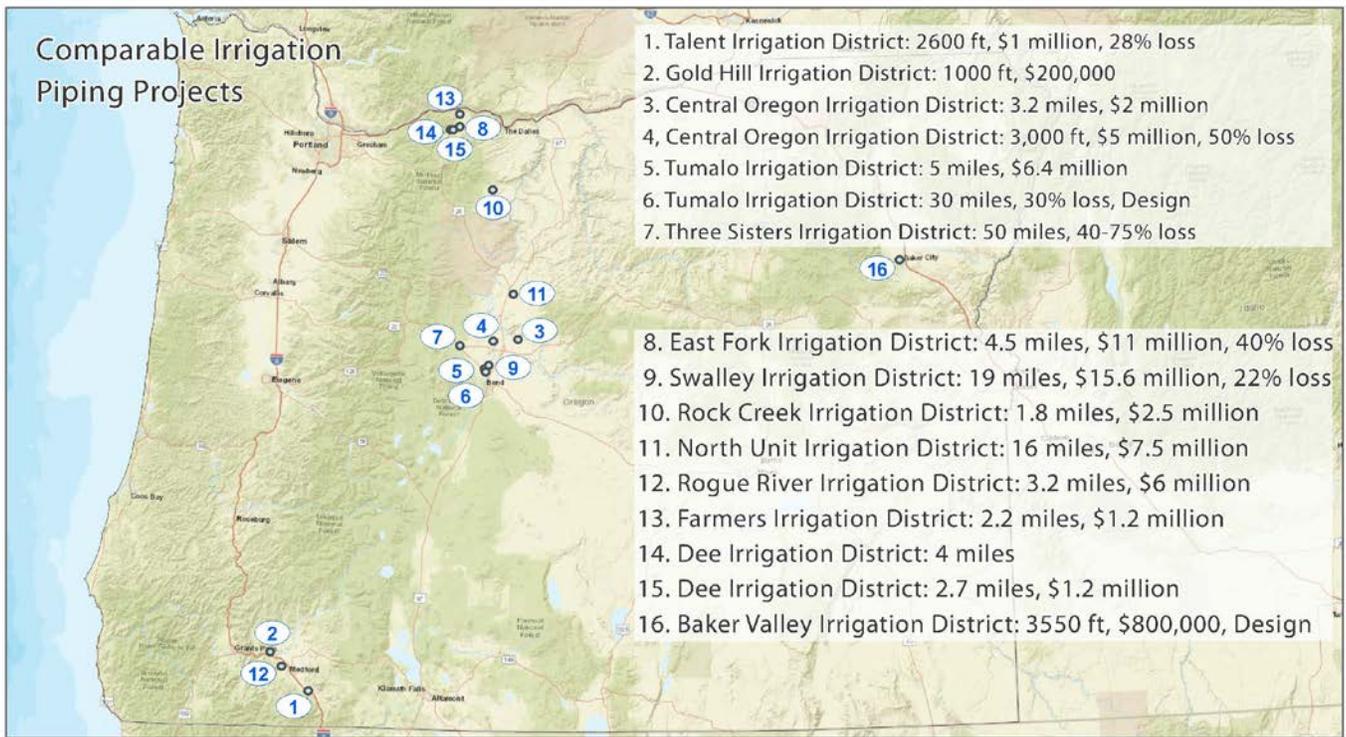
the Canal may be contributing the higher than normal levels of bacteria in the Canal which is then conveyed to Ashland Creek. The graphic to the right is in the presentation and added here to illustrate the prior studies of E.coli through sections of the canal and in Ashland Creek.



This project has produced a significant amount of research and information, all of which is available on the City web site (<https://www.ashland.or.us/ashlandcanal>). The detailed staff project summary was presented at the February 4th meeting, and links are available to all reports on the engineering options, ecological analysis of the trees, wildlife impacts, ACAG meeting presentation and meeting summary notes, answers to frequently asked questions, the project map and current trail easements locations.

Staff and council have heard from many constituents that are not in favor of piping the canal. Reasons for not wanting to pipe the canal range from cost to potential tree loss within the easement to perceived loss in property values to the visual and aesthetic values of seeing water in the canal during irrigation season. Many just don't want to have the canal piped. Many of those opposed have potentially received inaccurate information. Some just do not believe in the data collected by staff and our consultants. There are misconceptions that the trail will be turned into a "20-foot logging road" denuded of all vegetation – that is simply not the case; it will remain a trail.

Staff has been asked several times about other municipalities or agencies that are completing irrigation piping projects. The following graphic depicts locations in Oregon for piping projects.



The information provided with this report and in linked staff reports, as well as the pros and cons shown on the attached presentation attempt to quantify the concerns and present the information in the most objective manner possible. All of the alternatives presented are achievable, however, the only options that meets both of the project goals is to pipe the canal (alternatives 1 and 2).

Staff is eager to present this to council at the May 7th council business meeting to obtain Council's decision to move forward on the selected alternative.

FISCAL IMPACTS

Due to the complexities of working in a very narrow maintenance easement area and anticipated additional expenses, the preliminary engineering cost estimate has grown from the original budget estimates of \$1.3 to \$1.8 million to pipe the canal. Current project estimates; design, permitting, and construction, have grown to a range between \$2.4 to 3.9 million depending upon the selected alternative. This range identifies the cost differences for the four project alternatives including full pipe replacement, partial piping and partial pipe lining for the existing piped sections, or full canal lining and partial pipe lining for the existing piped sections, to an aggressive maintenance and concrete relining over time. The project costs have increased largely due to a very constricted easement area of only 20 feet in width along with tree removal and property protection. Costs will be refined during final engineering as the engineering team can get a better and more complete picture of the specific impacts for each property owner along the canal during the construction phase. The following summary defines the capital costs, annual operation and maintenance cost the projected life of each construction option, salvage value (remaining life at the end of 60 years) and the resulting net present value (NPV).

	Alternative #1	Alternative #2	Alternative #3	Alternative #4
Method	All new 24" pipeline	30" & 24" Pipeline	Replace Canal Liner	Aggressively Maintain
Pipe Material	Corrugated HDPE	Corrugated HDPE	Concrete & Urethane	Phased Repairs
Capital Costs	\$3,095,000	\$3,950,000	\$2,429,000	\$855,000
Annual O & M	\$12,500	\$12,500	\$39,000	\$75,000
Life of Option	60 - 100 years	60 - 100 years	40 - 60 years	20 - 25 years
Salvage Value	\$354,280	\$335,560	0	0
Net Present Value *	\$3,472,579	\$4,339,897	\$4,334,379	\$3,004,658

This project is 100% SDC eligible. The 2017-19 Biennium Water Fund Capital Improvement Project (CIP) budget includes System Development Charges (SDC) funds for contracted services in the amount of \$1,452,000 for this project. Expenses for this project are intended to be reimbursed through a low interest (1%) Department of Environmental Quality (DEQ) Clean Water State Revolving Fund loan of \$1.3 million authorized by Council at the August 1, 2017, business meeting. As noted above, the preliminary engineering and miscellaneous project expenses current total \$238,047. Should Council move forward to final engineering (staff anticipates bringing this at the May 7, 2019 Council business meeting), staff will identify additional sources of funding for the selected alternative.

DISCUSSION QUESTIONS

Council is not being asked to make a decision tonight. This discussion is in preparation for a decision on which alternative to pursue at the business meeting on May 7, 2019. Staff anticipates Council discussions will likely surround the project cost and cost benefit, pros and cons of water quality and water conservation benefits, and the need to remove a significant number of trees regardless of the alternative selected.

As noted on the presentation, there are several common concerns with each of the alternatives, including:

- **Tree loss** within the existing canal in construction zones. Of the 287 trees originally identified to be at risk, less than 100 trees will need to be removed for construction. The exact number and location of those trees to be removed will be included on final engineering plans and will depend upon the selected alternative.

- The true impact to **property values** is unknown and although an understandable concern to each homeowner, is somewhat speculative.
- The ability to fully improve **public access** and trail connectivity throughout the canal sections is up to each property owner. If this is a desire, staff will require Parks Department assistance and coordination with property owners.
- The canal is of **historic value** and although it is not specifically listed on the historic register, there may be a way to adequately memorialize the canal to preserve the importance. These details will be determined through the permitting stages.
- **Klamath water rights** final adjudication is unknown for the basin as irrigation water rights challenges began in the basin in 1975 and litigation continue today. The Oregon Water Resources Department (ORWD) is fully engaged in determining water rights and annual allocations especially during drought conditions that are dependent upon rainfall, snow melt, and groundwater in the Klamath basin. Ashland receives TID water through a water right from the Bureau of Reclamation (BOR). This is not a simple solution and the City will rely on OWRD and the BOR to determine flows and allocations.
- The full impact to **wildlife** is unknown. Although this is not a “wildlife corridor,” wildlife frequent the open canal during irrigation season. If the canal is piped, animals will need to find alternate water sources.

Staff and consult representatives will be available to discuss the project in detail and to discuss options available as Council moves toward a decision.

SUGGESTED NEXT STEPS

Staff anticipates bringing this item to Council for a decision to move to the next phase for final engineering on May 7, 2019. Staff is available and can schedule tours of the canal with Council members to better understand the concerns of community and existing conditions within the canal easements.

Once the preferred alternative is identified, final engineering will be completed with more detailed drawings, impacts and any additional right-of-way identified, and a final cost estimate will be prepared. Staff will identify additional revenue options prior to returning to council for approval on construction.

ATTACHMENTS (new)

1. Responses to Council Questions
2. Ashland Canal Advisory Group Membership
3. Presentation for April 1, 2019 study session.

REFERENCES

1. February 4, 2019 Council Study Session [staff report](#) and [minutes](#)
2. [2012 Comprehensive Water Master Plan](#), Carollo (see page 7-7)
3. [Atkins Engineering executive summary](#) (Full reports available at www.ashland.or.us/ashlandcanal)
4. [Siskiyou BioSurvey executive summary](#)
5. [SOU Letter \(Wildlife\)](#)
6. [ACAG presentation](#)
7. [ACAG meeting notes](#)
8. [FAQs](#)
9. [Project Map](#)
10. [Trail Easement Map](#)