

ASHLAND WATER ADVISORY COMMITTEE

March 26, 2019

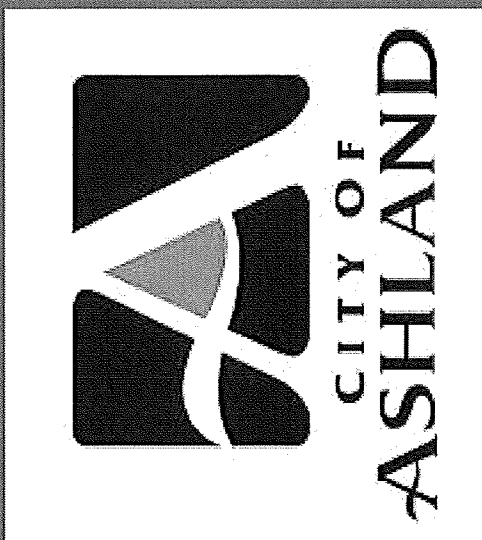
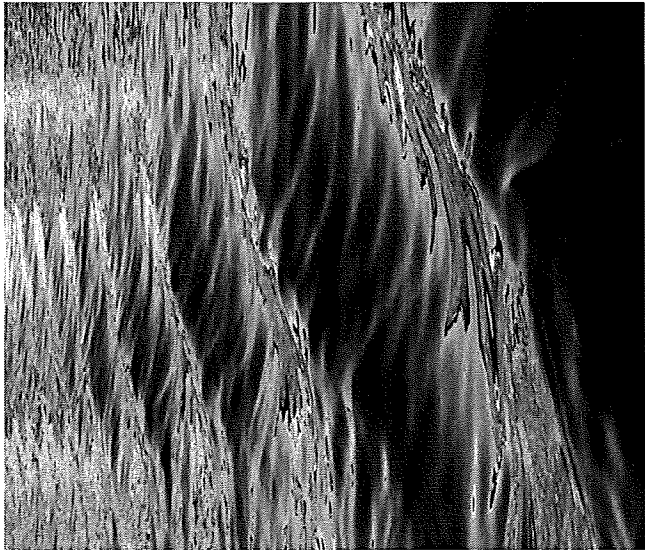
AGENDA

- I. CALL TO ORDER**: 4:00 PM, Siskiyou Room, 51 Winburn Way Ashland, OR
- II. ANNOUNCEMENTS**
- III. PUBLIC FORUM**
- IV. OLD BUSINESS**
 - A. T.I.D. Canal Piping project update
 - B. Water Treatment Plant pre-design progress
 - C. Next steps for Water Master Plan
- V. NEW BUSINESS**
- VI. ADJOURNMENT**: 6:00 PM

Next meeting April 23, 2019 4:00pm – 6:00pm



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Ashland Canal Piping Project *Council Study Session*

April 1, 2019



City Council Study Session Expectations

- Recap of project goals, project location
- E.coli data
- Condition of canal today; deferred maintenance concerns
- Community feedback and input
- Presentation of alternatives and their pros and cons
 - Common concerns with all alternatives
 - Alt 1 Replace Entire Canal with New 24" HDPE Pipe
 - Alt 2 Replace Open Sections of Canal with New 24" and 30" HDPE Pipe and Line Existing Piped Sections
 - Alt 3 Replace Open Sections of Canal with Urethane Underliner and new Concrete Channel, Line Existing Piped Sections: canal remains open
 - Alt 4 Aggressively Maintain Existing Canal; Phase Concrete Repairs over the Top of Existing Concrete Canal Channel
- Cost comparisons
- Next steps
 - Council decision – May 7, 2019 (Council Business Meeting)
 - Final Design and Permitting (June 2019 – June 2020; depending on the selected alternative)
 - Construction (start October 2020 depending upon the selected alternative)

Note: Alternative #4 replaces the "do nothing" alternative as doing nothing is not truly feasible.

Project Purpose & Benefits



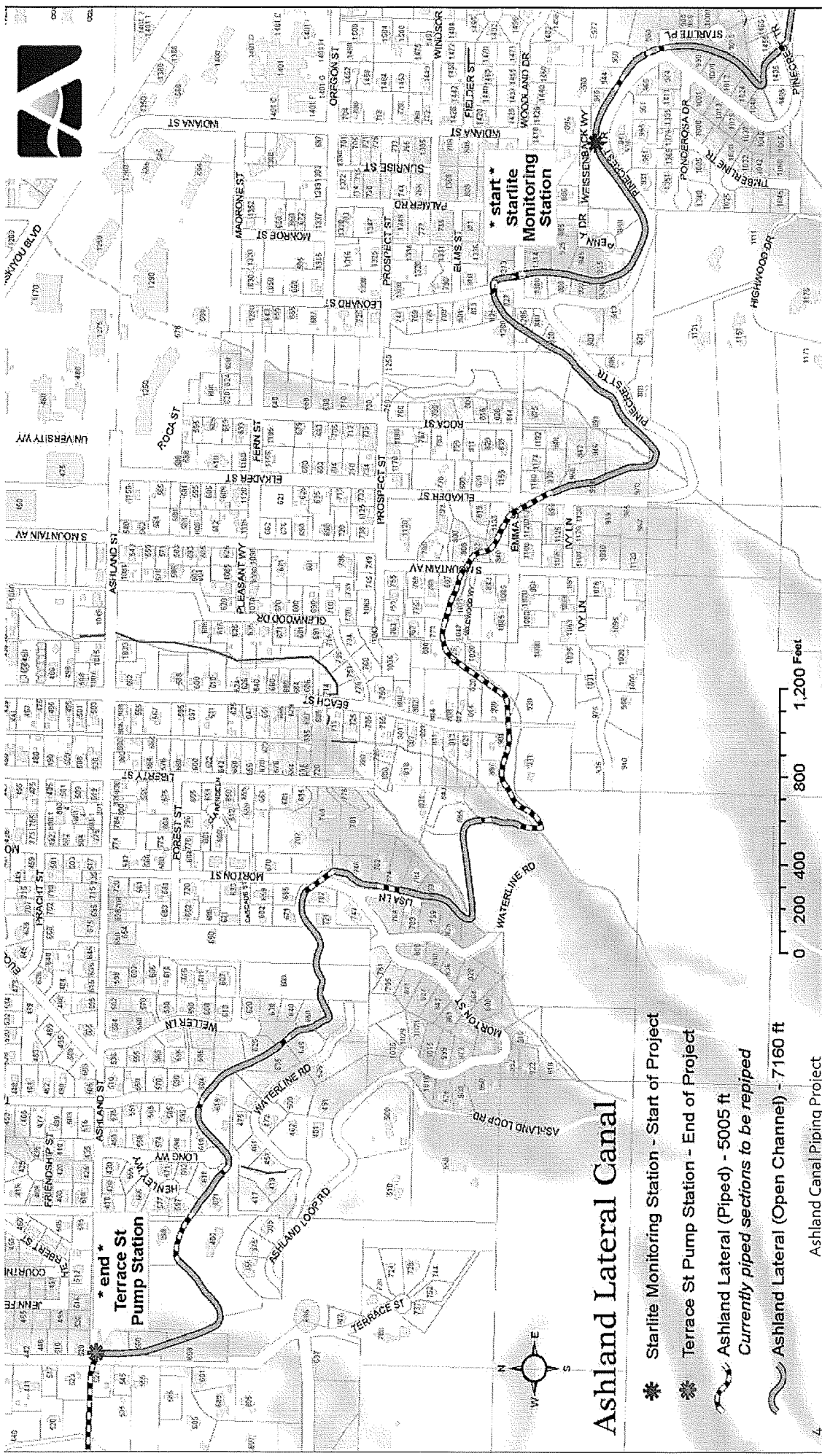
Purpose:

- Replace 10,700 feet of Ashland’s open-channel irrigation canal from Starlite Place to Terrace Street with below-ground pipe to improve the water quality in Ashland Creek and to assist the City’s goal for overall water conservation.

Benefits:

- Minimize water contaminants and health risks in Ashland Creek
- Reduce water loss due to seepage and evaporation
- Maximize water resource – *Right Water Right Use*
- Protect drinking water sources

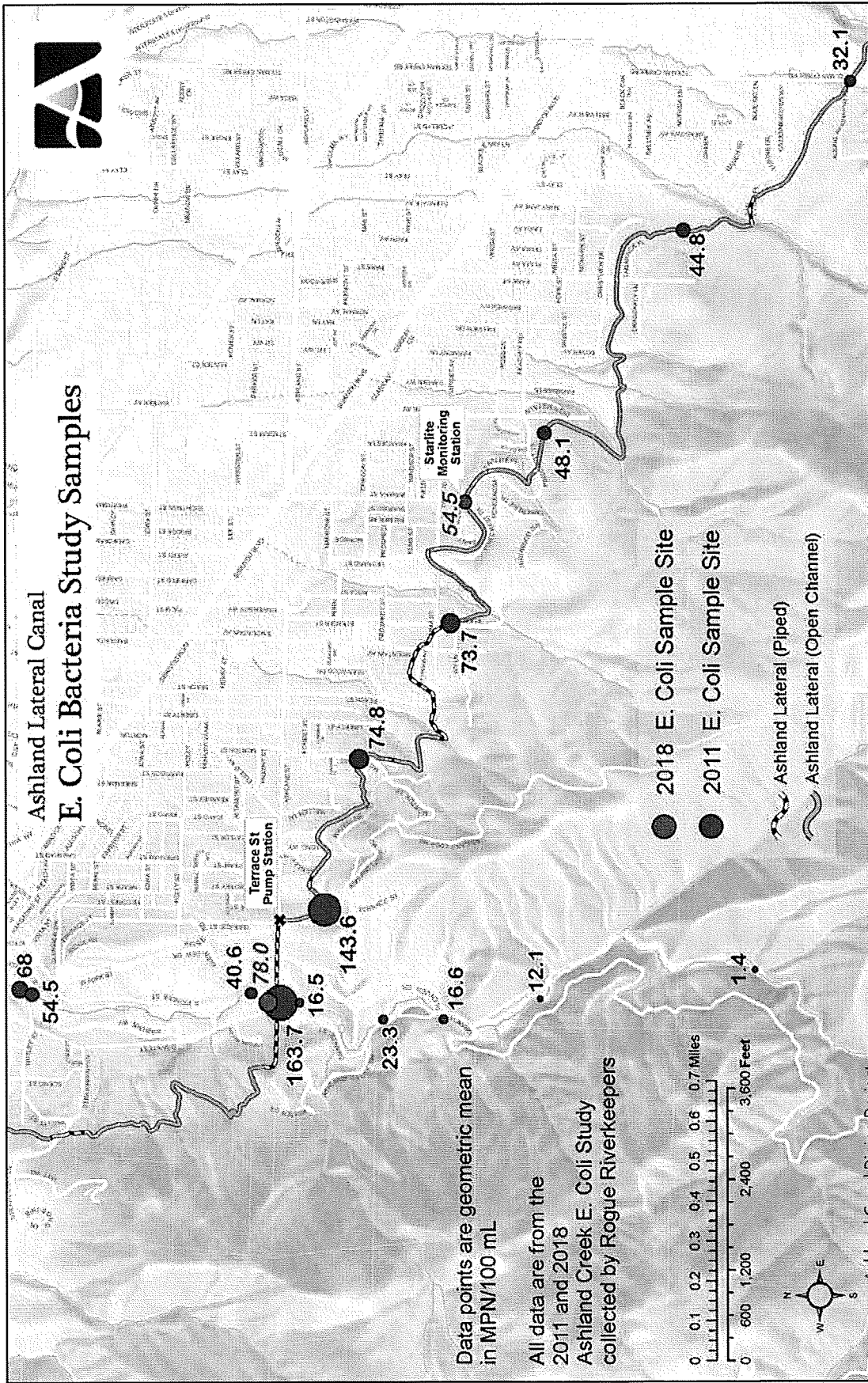
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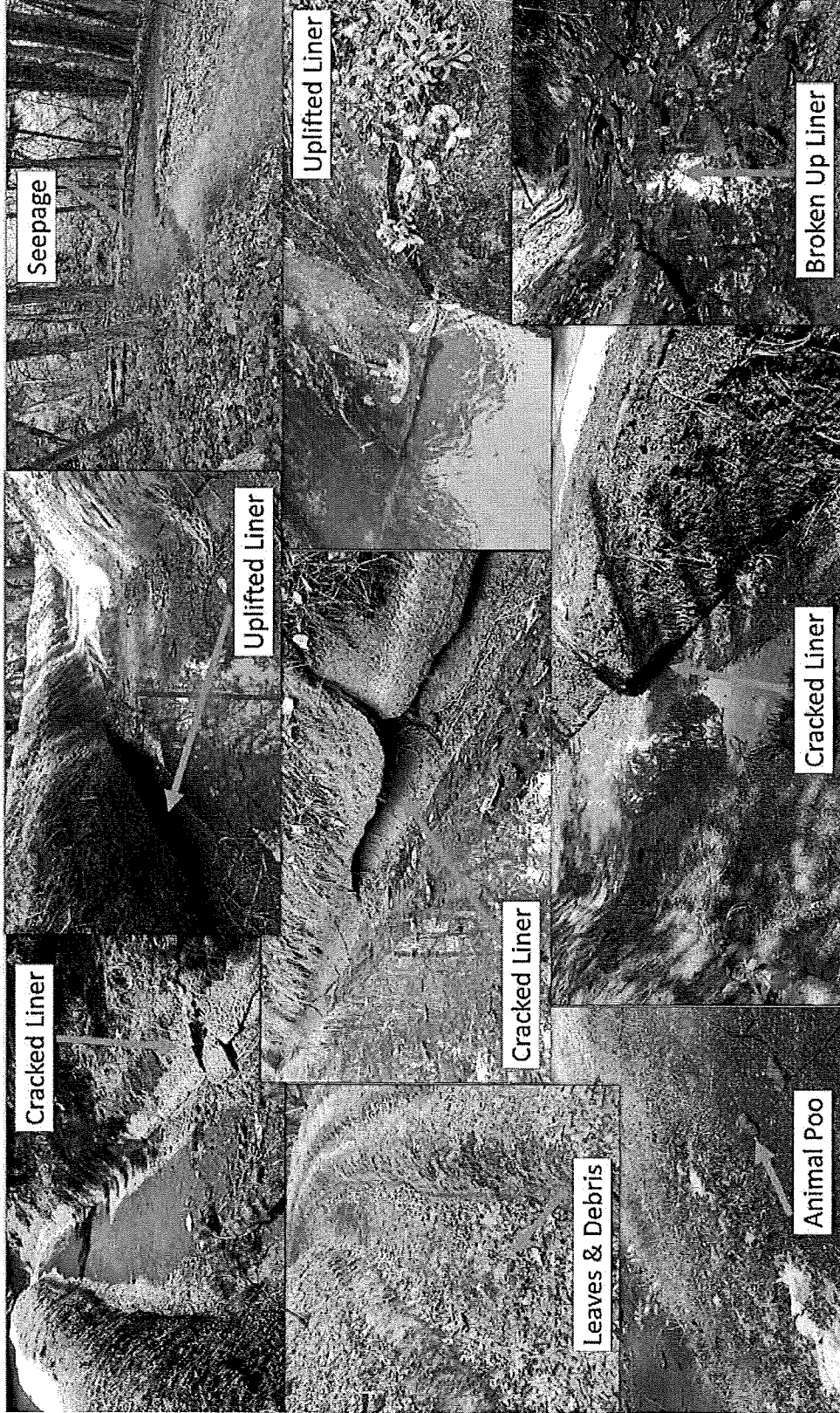
Ashland Lateral Canal

- Starlite Monitoring Station - Start of Project
- Terra St Pump Station - End of Project
- Ashland Lateral (Piped) - 5005 ft
Currently piped sections to be repiped
- Ashland Lateral (Open Channel) - 7160 ft

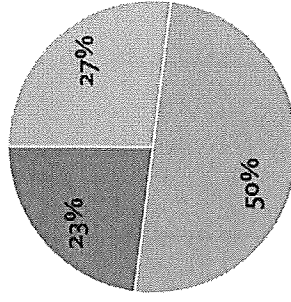
Ashland Canal Piping Project



Ashland Canal Maintenance Issues



Current Concrete Liner Condition

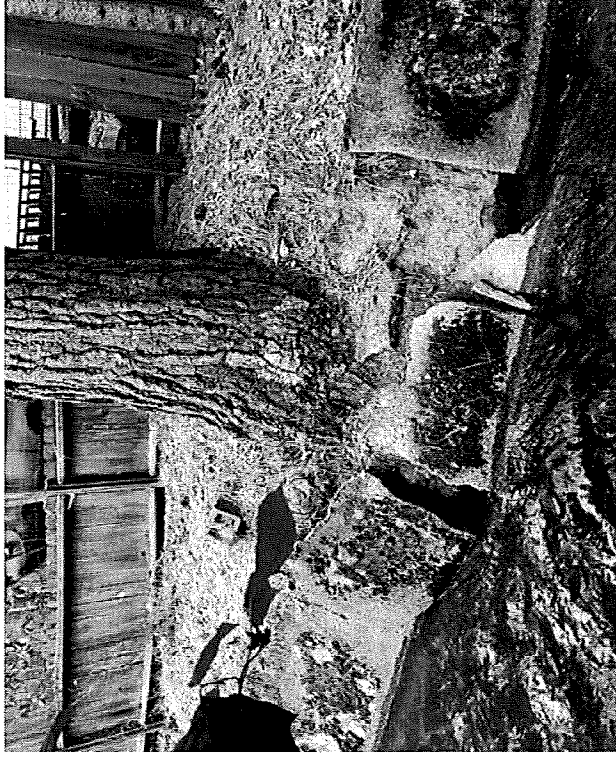


■ Good ■ Fair ■ Poor

Community Feedback & Input



- Impacts on trees & vegetation
- Project costs
- Aesthetics of water “feature”
- Property Values
- Not a community priority
- Trail access
- Impacts on wildlife
- Drainage
- Homeowner access during construction
- Wildfire
- Privacy
- Disturbance and removal of homeowner bridges, fencing, rocks, driveways, etc.
- Water efficiency / quality



Alternatives Assumptions



Alternative Criteria

- Meet minimum design criteria of 7.2 cubic feet per second flow rate
- Ensure maximum upstream water elevation of 2,327.05 feet

Funding

- Alternatives 1-3 assume the City will apply for new grant funding and/or secure additional loan funding from the DEQ
- Potential grant funding sources:
 - Natural Resources Conservation Service
 - Oregon Watershed Enhancement Board
 - US Bureau of Reclamation
 - Oregon Water Resources Department
 - Rogue Basin Partnership

Alternatives Assumptions



Common Concerns with All Alternatives

- Tree loss within the existing canal in construction zones
 - of the 287 trees identified, 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
- Unknown true impact to property values
- Ability to fully improve connectivity throughout the canal sections
 - will need Parks Department assistance and coordination with property owners
- Historic status of the canal is unknown and will be determined through the permitting stages
- Klamath water rights adjudication is unknown for the basin
- irrigation water rights challenges began in the basin in 1975 and continue today
- Wildlife impact
 - although this is not a “wildlife corridor”, wildlife frequent the open canal in the summer and if the canal is piped, will have to find alternate water sources



Alternative #1 - costs Replace Entire Canal with New 24" HDPE Pipe

Estimated Initial Capital Cost:

~~\$3,095,000~~

Estimated Life Cycle Cost (NPV) at 60 years:

~~\$3,472,579~~

DRY

*NPV – net present value 2018 costs; Adkins p. 49
includes an anticipate salvage cost of pipe – indicating there is still “life”
available in the pipe

Alternative #1 – pros and cons

Replace Entire Canal with New 24" HDPE Pipe



Pros

- Maximizes water efficiency – 23% of water conserved
- Maximizes water quality
- Reduces any contaminants / E. coli from entering the canal
- Improvements in irrigation service (less sediments)
- Improved trail, potential for more connectivity
- Restores natural stormwater drainage
 - stormwater no longer travels in the canal
- Improved and metered irrigation connections
- Improvements in irrigation service
 - less sediment and debris in private lines
- Protection of a secondary potable water source
- Reduces chances of canal failure – all new pipe
- Safer environment for children and pets
- Minimizes water theft
- Removes seepage risk to foundation failure

Cons

- Loss of open waterway
- Loss of trees
 - This alternative is likely to have the highest impact as it is full replacement
- Potential increase in trespassing
 - Without the canal to define the easement, trespassers may wander
- Improvements in irrigation service
 - less sediment and debris in the line
- Greatest impact to property owners during construction
 - entire section is replaced
 - this alternative has the most excavation

Alternative #2 – costs

Replace Open Sections of Canal with New Pipe (30" and 24" HDPE) and Line Existing Piped Sections



Estimated Initial Capital Cost:

~~\$3,950,000~~

Estimated Life Cycle Cost (NPV) at 60 years:

~~\$4,339,897~~

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*NPV – net present value 2018 costs; Adkins p. 49
includes an anticipate salvage cost of pipe – indicating there is still “life” available in the pipe

Alternative #2 – pros and cons

Replace Open Sections of Canal with New Pipe (30" and 24" HDPE) and Line Existing Piped Sections



Pros

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 - less sediment and debris in private lines
- Protection of a secondary potable water source
- Reduces chances of canal failure – all new pipe
- Safer environment for children and pets
- Minimizes water theft
- Removes seepage risk to foundation failure

Cons

- Loss of open waterway
- Loss of trees (less than Alt #1)
- Potential increase in trespassing
 - without the canal to define the easement, trail users may wander
- Significant impact to property owners during construction
- Transition of new/old can leak over time
 - must be actively monitored
- Highest capital cost
 - \$4 million
 - two different pipe sizes required to maintain capacity and hydraulic head
- Highest life cycle cost
 - \$4.3 million

Alternative #3 - costs

Replace Open Sections of Canal with Urethane Under-liner and new Concrete Channel, Line Existing Piped Sections: canal remains open

Estimated Initial Capital Cost:

\$2,429,000

Estimated Life Cycle Cost (NPV) at 60 years:

\$4,334,379

*NPV – net present value 2018 costs; Adkins p. 49
no salvage value



Alternative #3 – pros and cons

Replace Open Sections of Canal with Urethane Under-liner and new Concrete Channel, Line Existing Piped Sections: canal remains open



Pros

- Improves water efficiency – 21% of water conserved
- Retains visual and aesthetic value of open seasonal waterway
- Minimal impacts or changes to trail
- Improved and metered irrigation connections
- Reduces chances of canal failure – new urethane line
- Removes the seepage risk to foundation failure
- Lower capital costs (\$2.4 million)
- No new trespassing concerns as the canal and easement trail is visible

Cons

- Canal is open to contaminants / E. coli intrusion
- No additional protection to our secondary potable water source
- Water loss to evaporation/transpiration
- Loss of trees (less than Alt #1 and 2)
 - True with all alternatives
- Stormwater drainage will still enter the canal
- Canal can flood/overflow, risk to private property
 - Debris and debris dam potential
- Transition of new/old can leak over time; must be actively monitored
- Significant impact to property owners during construction
- Does not reduce safety concerns for children or pets
- Does not reduce or eliminate water theft

Alternative #4 - costs
Aggressively Maintain Existing Canal, Phase
Concrete Repairs over the Top of Existing Concrete
Canal Channel; canal remains open



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\$27,429,000
\$4,334,379

Estimated Initial Capital Cost:

Estimated Life Cycle Cost (NPV) at 60 years:

*NPV – net present value 2018 costs; Adkins p. 49
no salvage

Alternative #4 – pros and cons

Aggressively Maintain Existing Canal, Phase Concrete Repairs over the Top of Existing Concrete Canal Channel; canal remains open



Pros

- Slightly improves water efficiency over time (will not get 21%)
- Retains visual and aesthetic value of open seasonal waterway
- Minimal impacts or changes to trail
- Reduces chances of canal failure as sections are repaired
- Removes the seepage risk to foundation failure as sections are repaired
- Least immediate impact to property owners, but impacts are more frequent
- Least initial capital costs
- No new trespassing concerns as the canal and easement trail is visible

Cons

- Canal is open to contaminants / E. coli intrusion
 - No additional protection to our secondary potable water source
- Water loss to evaporation/transpiration and seepage
- Loss of capacity with additional concrete in the canal
- Least immediate loss of trees
- Stormwater drainage will still enter the canal
- Canal can flood/overflow, risk to private property
 - Debris and debris dam potential
- Transition of new/old can leak over time; must be actively monitored
- Does not reduce safety concerns for children or pets
- Does not reduce or eliminate water theft
- Will require significant repairs each year; will have to replace some sections of existing concrete and likely line existing pipes



ALTERNATIVE COMPARISONS

(2018 Costs)

Method	All new 24" pipeline	30" & 24" Pipeline	Replace Canal Line	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

* Life Cycle Cost / Net Present Value from Adkins Final Report p. 49

Next Steps

Questions?

Concerns?

Interested in a canal tour?

Next Meeting – alternatives decision:

May 7, 2019

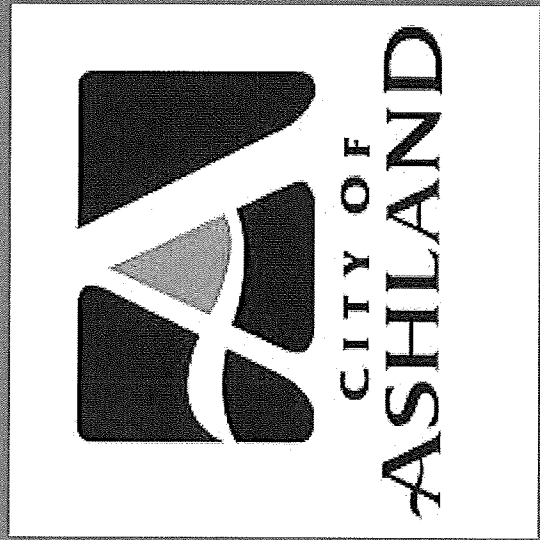
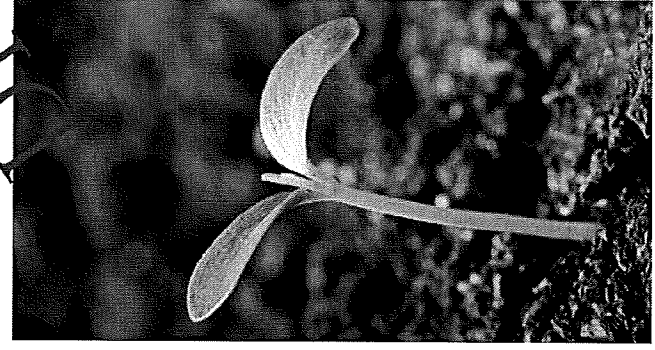
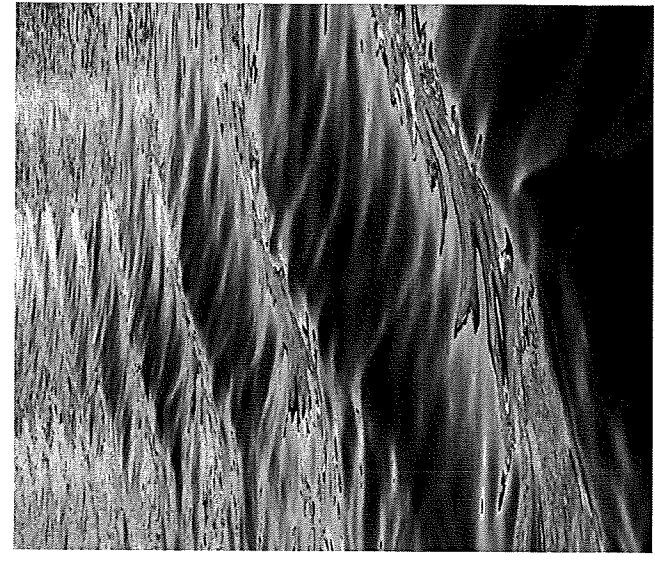
Council Business Meeting

More Information: www.ashland.or.us/ashlandcanal

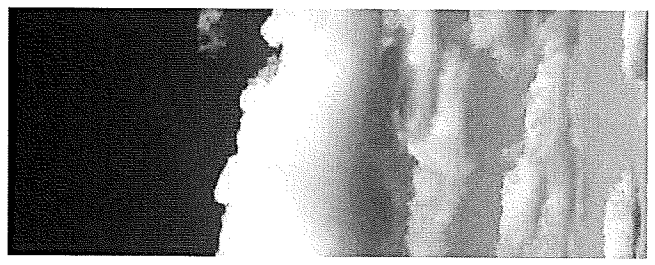


*"We do not see things the way they are,
we see them the way we are."*

-- Anais Nin



Thank you!



Ashland Canal Piping Project Frequently Asked Questions

What is the Ashland Canal Piping Project?

The project entails piping approximately two miles of the Ashland Canal to improve the water quality of Ashland Creek, (the outlet of the Ashland Canal) and minimize losses through seepage and evaporation. The open-channel irrigation canal will be replaced with a below-ground pipe to meet the city's goal for overall water conservation and improved water quality.

Where is the project located?

The piping will take place along approximately two miles of the Ashland Canal from Starlite Place to Terrace Street. [View](#)

Why is the project being proposed?

The City of Ashland places priority on improving water quality, water conservation and water system efficiencies.

Raw water in an open canal, like Ashland Canal, is vulnerable to contamination from a variety of sources. These contaminants require additional treatment at our Water Treatment Plant and reduce the water quality of Ashland Creek. Additionally, open canals are susceptible to water losses through seepage and evaporation. Ashland Creek routinely exceeds the State's maximums for E. coli bacteria in the summer months.

In addition to improving water quality, conservation efforts will help Ashland to manage its water resources for the future. The city loses approximately 30 percent of the canal water due to evaporation and seepage. Piped canals mitigate these losses and conserve a significant portion of this water.

What is the purpose of the Ashland Canal?

The Ashland Canal is a regular source of seasonal irrigation water around the city. The Canal has also been infrequently used as a raw water source for the Water Treatment Plant (WTP). It was most recently used in 2015 due to dropping water levels in Reeder Reservoir.

The city has a contract with the Talent Irrigation District (TID) for approximately 1,369-acre feet of water annually. The front section of the Canal terminates in the wet well of the Terrace Street Pump Station. From there the city can: 1) Choose to pump to the Water Treatment Plant for potable water treatment, 2) Gravity feed into a Siphon that conveys the water across the Ashland Creek drainage to the back section of the Canal, or 3) Gravity overflow through a pipe into Ashland Creek at Lithia Park.



What is the history of the Ashland Canal?

The Canal was constructed in the early 1920's and is in operation seasonally from April through October (approximate). The Canal consists of an open ditch among most of its length, though some portions have been piped due to past maintenance issues. Water is conveyed to individual users via a combination of piping and ditch systems that run through the city; these networks are owned by either the City of Ashland, Talent Irrigation District, or private land owners. Use of TID water is through individual agreements based on the property size and are generally unmetered.

Where does the city get its water?

The city's primary source of raw water comes from the Ashland Creek watershed. In 1928, the city constructed Hosler Dam at the confluence of the West and East Forks of Ashland Creek. The resulting impoundment of Reeder Reservoir provides 280 million gallons (MG) of storage for the city's water supply. Water from the reservoir is conveyed to the city's Water Treatment Plant (WTP) located along Ashland Creek, approximately one mile below Reeder Reservoir.

The city has an agreement with the Talent Irrigation District (TID) to provide additional raw water supply in drought years. When needed, TID water is pumped from the Ashland Canal by the city's Terrace Street Pump Station up to the WTP, where it is treated with the Ashland Creek raw water supply.

What is the project timeline?

The preliminary engineering phase (survey and field work) began in February 2018 and is expected to take eleven months. Construction is not anticipated until 2020.

- Phase 1A, February 2018 – December 2018: Preliminary engineering phase (survey and fieldwork)
- Phase 1B, December 2018-June 2019: Public outreach, obtaining permits, easements and construction work agreements
- Phase 2, June 2019-December 2019: Final engineering
- Phase 3, 2020: Construction of piping project

Who are the city's piping partners?

On January 16, 2018, city council approved a contract with Adkins Consulting Engineering, LLP to perform preliminary engineering work associated with piping a portion of the Ashland Canal.

How is the project funded?

The project is funded by the Oregon Department of Environmental Quality Clean Water State Revolving Fund. The loan was authorized August 1, 2017, by city council.



How will this project benefit Ashland citizens?

- Minimized water pollution and health risks: reduced E. coli contributing bacteria as well as other contaminants in Ashland Creek.
- Conserves water lost to seepage and evaporation: approximately 30%
- Protects drinking water resources: in drought years, canal water is pumped to the Ashland Water Treatment Plant and treated to drinking water standards.
- Safety improvements: piping the canal eliminates some falling and drowning hazards and will drastically reduce the chances of overtopping and bank blow-outs.
- Trail and Surface Improvements: will create a wider smoother gravel path with reduced maintenance.
- Improved irrigation water quality: less debris and sediment buildup

How much water will the Ashland Canal Project save?

During the irrigation season, Ashland Canal loses approximately 30 percent of water to evaporation and seepage. Piping the canal will mitigate these losses and conserve a significant portion of this water, providing more efficient delivery to customers.

How will this project affect the trail along the Canal?

Temporary trail closures will be required during construction as well as some trail restoration after construction. This project is not intended to create additional trails or to secure additional trail segments. However, by burying a pipe this project will un-intentionally remove previous seasonal trail obstacles (the open Canal with water). The City will work closely with adjoining property owners to mitigate any concerns regarding the trail and the removal of previous obstacles. The Ashland Parks and Recreation Division is interested in securing additional trail easements if property owners are interested. If you are interested in these opportunities, please contact Parks Superintendent Michael Oxendine at 541-552-2252.

How will the canal along the Cottle property open space be accessed?

Access will likely be the same as the existing access.

What will happen to the trees along the Ashland Canal?

We are currently in the preliminary engineering design phase and are evaluating and surveying the landscaping and the trees along the Ashland Canal to determine the impact. Efforts will be made during construction to reduce negative impacts to the trees and landscaping.

What is an Easement?

An easement is a right to cross or otherwise use someone else's land for a specified purpose.

- The City of Ashland has a maintenance easement along either side of the Ashland Canal from Starlite Place to Terrace Street.
- A trail easement is an agreement with the homeowner and City of Ashland Parks Department to allow trail access along the Ashland Canal. All current trail easements will remain after the project is complete.



Do I have a trail easement on my property?

To find out if you currently have a trail easement through the Parks Department, please contact Parks Superintendent Michael Oxendine at 541-552-2252.

What is the Talent Irrigation District's involvement in the project?

The Talent Irrigation District (TID) currently serves water, mainly used for irrigation, within the Talent and Ashland areas via several storage reservoirs and canals. Waters are conveyed to users within the City of Ashland via the Ashland Canal, which extends from the Green Springs Power Plant, along the south side of the city, to its terminus at Wright's Creek. The TID supplies water to the Ashland Canal. The City of Ashland owns and operates the Canal for municipal purposes.

The city has an agreement with the TID to provide additional raw water supply in drought years. When needed, TID water is pumped from the Ashland Canal by the city's Terrace Street Pump Station up to the WTP, where it is treated with the Ashland Creek raw water supply.

What is happening upstream from the 2 miles that is being piped?

The Talent Irrigation District (TID) owns and maintains the canal upstream of the City's monitoring station at Starlite Place. TID does not plan to pipe their section of the canal at this time.

Will TID chemical water treatment in the ditch change with the piping of the canal?

TID does not use any aquatic chemical in its canals.

How will this project benefit irrigation customers?

During the irrigation season, Ashland Canal loses approximately 30 percent of water to evaporation and seepage. Piping the canal will mitigate these losses and conserve a significant portion of this water, providing more efficient delivery to customers. We anticipate the addition of better filtration at the head of the piped section, this will reduce the amount of debris in the canal and ultimately reduce the debris in the Canal lateral lines.

How will irrigation access be established to the pipe for current Ashland Canal irrigation water holders?

We have a few different ways of connecting to the pipe, it will be somewhat dependent on the existing connection/conditions. We will plan for these specific connections with a standard detail or custom detail (depending on the connection). For future connections, an Inserta Tee will likely be the easiest connection for public works. There are no "TID" water right holders attached to this section of canal.

I have an irrigation water right through TID? Will my property be affected?

TID irrigation water right holders will not be affected by this Ashland Canal piping project.



How do I find out if I have Ashland Canal water for irrigation or if I get my water from TID?
Call us at 541-552-2062

Why is the canal being piped rather than lined?

There are three reasons the city chose to pipe over lining:

- 1) **IMPROVED WATER QUALITY:** Piping Ashland Canal will reduce contaminants in Ashland Creek, lining the Canal still leaves it open to contaminants.
- 2) **CONSERVATION:** Potential to conserve 30 percent of the canal water due to evaporation and seepage. Piped canals mitigate these losses and conserve a significant portion of this water. Lining the Canal will reduce seepage, but requires frequent and costly repairs to maintain this benefit.
- 3) **COST:** While lining may be less expensive to implement in its first installment cycle than piping, it requires significant maintenance and replacement cycles. In the long run maintenance and replacement costs exceed the cost of piping over time.

Why can't the current concrete stay in the ditch? Why does it have to be removed at all?

The concrete canal lining is beyond its service life and has deteriorated to a point where it needs replacement. Long term, it is more cost effective, less maintenance and less water loss to replace the concrete lining with a buried pipe.

What will the area look like after the canal is piped?

The pipe will be buried at grade level and, when the project is completed, the city will restore the trail. The city is exploring partnerships with Ashland Parks and Recreation District and the Southern Oregon Trail Alliance. (can we link to our rendering here?) Add more

What kind of pipe will be used in the Ashland Canal project?

The pipe diameter is yet to be determined, but will likely be between 24 inches and 48 inches.

We are very early in the design process, and have not determined the pipe material to be used. However, it is common to use ADS N-12 Low Head pipe in these applications. <https://www.ads-pipe.com>

How large of a grade drop will be needed to accommodate the larger pipe?

It depends on multiple factors; of which we are currently working through.

Can the new piping, after it is backfilled be driven over? What is the weight limit for the pipe being used?

Yes, the pipe can be driven over with the proper backfill and trench requirements. The weight limit is dependent on these factors.

How will piping the canal impact natural resources?

Phase 1B of this project, estimated to begin late in 2018 will include wetland surveys and approaches. Currently, the City is working with natural resources professionals to determine



and/or mitigate impacts to vegetation. We estimate this analysis to be complete by the end of 2018.

How will this project affect the wildlife?

In its current state, water is in the canal April through October. Wildlife is used to not having access to water six months out of the year and will continue to seek other water sources like ponds and natural water bodies.

How is this project going to affect my property?

The city is committed to working with homeowners to address all concerns. To learn how your property might be impacted by this water quality and conservation project, please contact the Public Works Department at 541-488-5587.

Is the City going to be working on my property?

City staff and our partners have thoughtfully considered the impact this project may have on residents and properties that border this section of canal. The city will do its best to minimize impacts to adjoining properties and irrigation customers from project design through construction. The City has easements that allow the placement, operation and access of the canal on private property. If the Canal crosses your property and you not aware of an easement, please contact us as we may be able to help.

What kind of safety precautions are going to take place during construction?

The contractor will ultimately be responsible for complying with OSHA and state rules for construction access and safety; this will more than likely include temporary fencing, flagging, etc. Additionally, we will have a project representative onsite to ensure the contractor complies with these rules.

What are going to be the working hours of the construction crews?

8:00 a.m. -5:00 p.m. Monday- Friday

Where is the stormwater that is currently being routed into the canal going to go?

The stormwater that is currently entering the canal will likely be rerouted to adjacent drainages. We will also be considering other alternatives, such as low-impact-development solutions like rain gardens or bio swales. We are currently still in the preliminary design phase of the project and will have more information as we move forward.

How can I learn more about the project?

We invite you to contact the city to learn more about the project at 541-488-5587 or visit www.ashland.or.us/ashlandcanal. If you wish to be included on our email notification list, please send an email to ashlandcanal@ashland.or.us.



Ashland Canal Questions from Councilors and a couple others

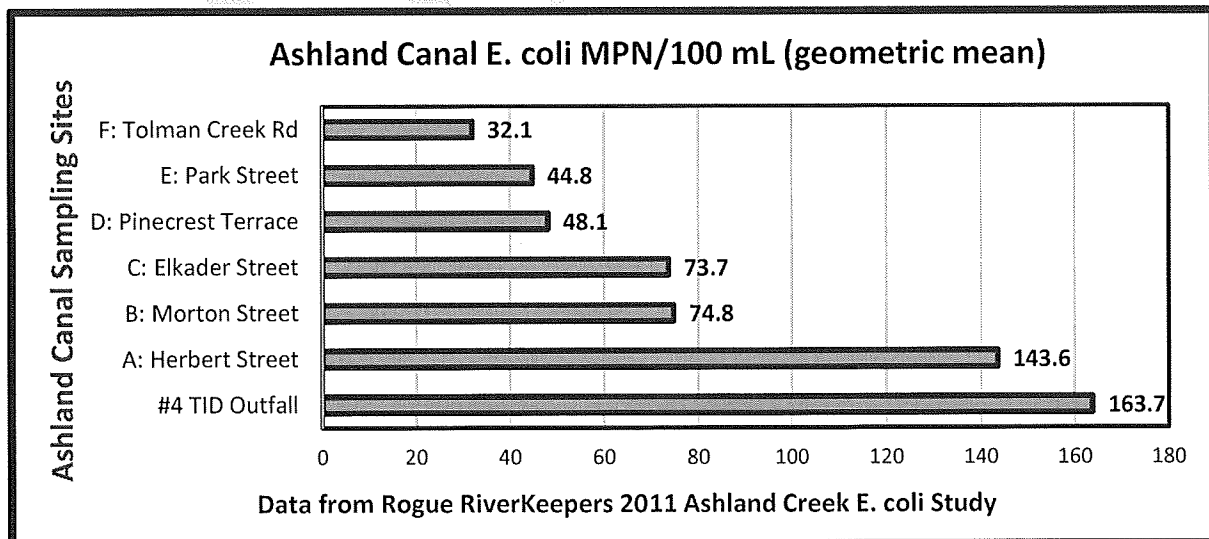
1. It looks like TID is still our preferred backup for drinking water over the Medford source (Talent Ashland Phoenix intertie TAP) because it is cheaper to buy raw water for our treatment facility than it is to buy treated water from Medford. Is that correct and what is the difference in cost? How much have we used for drinking water over the last five years or so?

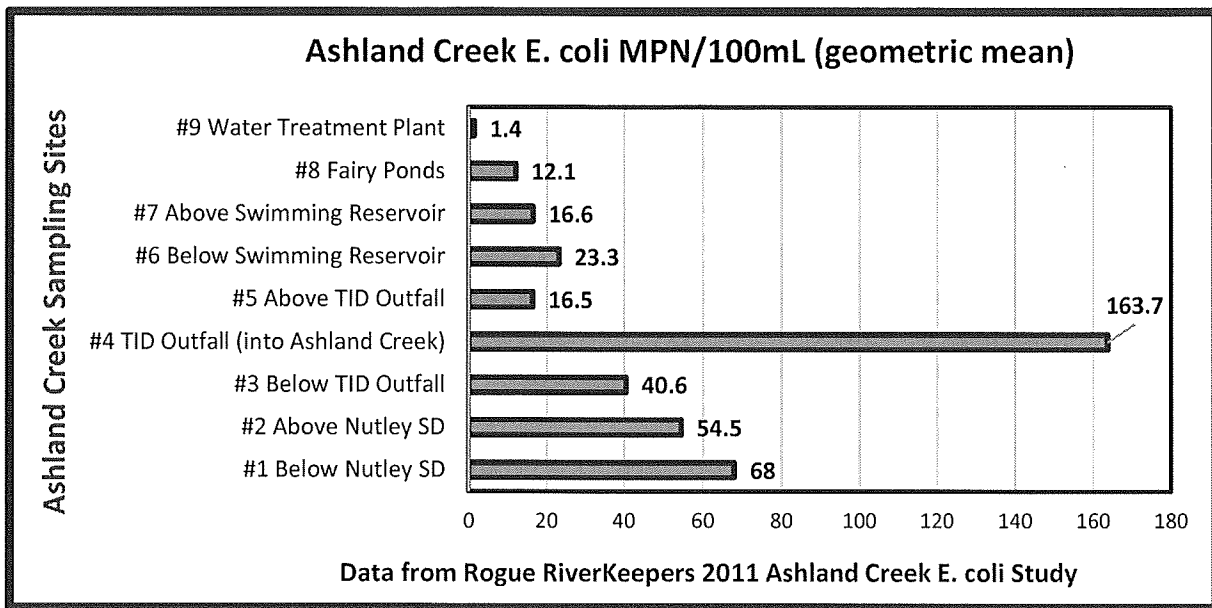
Yes, we supplement our drinking water first with TID water as allowed by the municipal uses of the TID and the much lower costs. We purchase TID water for \$.20 per 1000 gallons, however when the pumping and treatment costs are added, the total TID water cost is \$0.40 per 1000 gallons. Our costs for TAP water delivered into our system are \$1.15 per 1000 gallons. Since 2009 we have pumped 457 million gallons of TID water and 176 million gallons of TAP. In addition, TAP is classified as an emergency water source. Our use of TAP at this point has only been for system evaluation and testing, not for emergency use. TAP is still considered an emergency source only.

2. Is temperature a problem at the Ashland Canal outfall in Ashland Creek? Are we collecting data to track that? We are not aware of any temperature studies for the canal outfall. The Parks Department likely has some data from their E. coli sampling that includes temperature, but likely not collected for a temperature study for the Canal outfall.

3. Is there an E-coli threshold below which we are not experiencing a health hazard? Do we know what the baseline E-coli amount is in Ashland Creek before our canal water enters the natural stream? If our canal water did not pick up any more E-coli as it headed through town, would that be enough to keep us out of trouble in terms of health risks and signs telling people not to go in the water?

The state of Oregon health standard for E. coli in waterways is 406 MPN/100ml for single sample exceedance. The state considers waterways to be hazardous to public health when E. coli levels are above 406. Since 2013, the City has posted the swimming area of the playground in Lithia Park “unsafe to enter” 18 times. This swimming area is below the Ashland Canal outfall into Ashland Creek. The 2011 Ashland Creek E. coli Bacteria Study, available on our project website (www.ashland.or.us/ashlandcanal) goes into great detail regarding E. coli. In summary, the average E. coli concentrations in Ashland Creek just above the TID outfall are 16.5 MPN/100ml. The average E. coli concentrations just below the TID outfall are 40.6 MPN/100ml. The E. coli directly from the TID outfall averaged 163.7 MPN/100ml. While we can’t control everything that enters into Ashland Creek, it’s obvious that minimizing the E. coli that is contributed by the Canal will go a long way towards making Ashland Creek safe for the public.





4. *It sounds like we do not meter existing Ashland customers who buy irrigation water from the City. Would this project allow us to meter those customers (plus the 800 new customers)? If so, is that cost figured into the estimate?*

We do not meter the irrigation water purchased by our irrigation customers. Part of our design is to meter all connections for better accountability, and those costs are included in our estimates for the current connections. Future meters are not included as we don't know when those costs will be realized. Any future connection would be an added revenue source.

5. *The memo says that it costs us around \$75,000 per year to maintain it, yet more than half is in poor or fair condition. Have we been under-resourcing this work or are we at a place in the lifecycle of the canal where it's just not possible to hold it together with maintenance?*

Our current Canal maintenance expenses are approximately \$50,000 per year. We have been under resourcing this asset. We have been discussing piping the Ashland Canal since the adoption of the 2012 Water Master Plan. Due to the need for piping, our efforts have been focused on maintaining the canal as is and no major repairs have been scheduled. Most of the sections classified as poor/fair are in need of replacement. Every year that we do not complete the piping project or delay the construction has an incremental increase in the amount of deterioration.

6. *I recall hearing a year or two ago about an update to the Water Master Plan, which I believe is the document that calls for this project. Is that plan in the process of being updated? If so, to what extent is it taking into consideration climate change and when do we expect it to be done?*

The 2012 Water Master Plan originally identified the need to pipe the Ashland Canal. In 2013 Council approved the DEQ loan to complete the piping project. We are currently updating the Water Master Plan and anticipate it to be completed in June 2019. The canal piping project is a part of the new Master Plan project list. Climate change is not specifically discussed in the Water Master Plan but anticipated drought periods are planned. Piping the canal will protect the water from seeping and ensure full allocation of water is available for our residents.

7. There is a claim that maintaining the trail will create an effective fuel break, but that was put forward by the company that completed the ecological study. I would like to see an opinion from our fire department regarding the utility of this trail as a fire break - or as a means of accessing the area for firefighting in the event of a wildfire heading toward town. If it is to be used as a fire break, it will need to be maintained in a specific way. Is that part of the cost estimates for maintenance after the piping is installed?

We have received a memo from Ashland Fire and Rescue regarding this project and will forward to Council. We are planning on designing the trail so that it can be accessed by the Fire Departments' brush trucks in the event of a wildfire emergency in the area. The easement area will be maintained to allow for emergency fire and pipeline access.

8. It seems that Parks and Rec handles some amount of the dealing with the trail next to the canal. Is there any potential to work with landowners to develop easements that allow Parks and Rec to essentially manage this area as a lateral park/fuel break?

Possibly. While the Public Works Dept has not specifically asked land owners to grant additional trail access, we believe there are some opportunities for the Parks Dept and have worked with them through this process. The canal trail is listed as a priority in their planning documents. Additional trail easements need to be negotiated with the property owners that do not have specific public access easements.

9. I heard at the meeting last week that the canal is sometimes used to transport storm water. If that's the case, then climate change may require that we use the larger pipe assuming we pipe it. There was also talk about possibly doing bioswales to deal with that water. Has there been any consideration of building those bioswales into this project or would that be a separate project?

We would like to include bioswales in this project for minor amounts of storm flow, but our geotechnical report cautions against it due to soil conditions. This will be further evaluated if this project moves forward. Storm flows into the Canal were studied by our Engineers and they found the flows to be less than anticipated. This is primarily due to the fact that most of the Canal has roads upslope that redirect some of the storm flow into our storm system. This is discussed in the Preliminary Engineering Report, which can be found on our website at www.ashland.or.us/ashlandcanal.

9. Do we actually have to take out the liner? Given the access considerations and root problems, and potentially the need to create bio-swales, would it be possible/preferable to pipe, cover, and landscape the canal above ground while leaving the concrete liner and many of the trees in place?

There are several engineering/design reasons why we must remove the liner and excavate a small amount below the liner in order to pipe the Canal. Our elevations are fixed at the beginning and end of the project and it's very important that we maintain the same flow line and hydraulic characteristics we have now. Proper construction techniques require an appropriate amount of bedding/gravel to be placed below the new pipe, also requiring liner removal.

10. In terms of the **cost**, I need to clarify a few things. It says that preliminary engineering costs have gone from 1.3 to 1.8 million. Then design, permitting, and construction has gone from 2.4 to 3.9 million. I assume these two categories are additive meaning that the total cost of the project (assuming we go with the preferred alternative costing 3.1 million) would be 4.9 million total. Is that correct or are the preliminary engineering numbers included in the estimate for design, permitting, and construction? Also, I am assuming that the 250k or so that has already been spent is included in the 1.8 million, but please correct me if I'm wrong.

The \$3.1 million estimate is to finish the design and construction of the Staff recommended piping alternative. Construction alone is \$2.2 million. The \$3.1 does not include costs to date (\$250,000). That total is \$3,350,000.

11. The message says that CIP funds are available for this, but it would help considerably to have a master CIP 20-year plan with information about how we intend to pay for these projects in hand prior to making this decision. It seems that this is heading our way later this spring, but I think we need it before this and the city hall questions get decided by the Council.

- a. There is concern in the community that CIP funds have been being stockpiled for specific projects and are now potentially going to be used for something different than what was originally intended.

Not true. Funds are set aside by enterprise and for specific projects.

- b. How would we likely fund this (the part not being funded by the CWSRF loan) - with a larger CWSRF loan, a bond, or our CIP budget? Likely through a different loan agreement.

- c. Or are there other grant-based funding sources?

Yes, there are several opportunities well suited for this project.

- Oregon Water Resources Department
- Natural Resources Conservation Service
- Oregon Watershed Enhancement Board
- US Bureau of Reclamation

- d. It will be very hard to me to approve going forward with final engineering without at least a ballpark idea of what this will cost (including all aspects of the actual project and maintenance including the costs of repairing landscaping for homeowners) and our options for paying for it.

Estimates to finish the design and complete the construction are \$3.35 million, costs for the restoration of neighboring properties are included.

12. I understand that the WISE project is no longer looking to pipe the rest of the irrigation canals in the valley. It seems this canal is an offshoot of the main canal and terminates in Ashland Creek. Please let me know if either of these understandings is wrong.

We are not aware of any significant changes to WISE, but are hearing that it is not on the front burner. Where to get the funding has been an obstacle for them. The Ashland Canal is fed by TID-BOR owned canals and terminates where we decide: the water treatment plant, Wright's Creek or Ashland Creek. In normal operation, our canal terminates into Wright's Creek, but there's always some spillage into Ashland Creek.

13. Do we have a legal risk of storm water - or a massive failure of the canal - flooding property owners along the canal? Is there a legal risk to the City for doing something that may decrease property values (I doubt this second one is the case, but people are talking about it so I just need to confirm).

Flooding and canal failure risks will be significantly reduced by this piping project. If the project moves forward, we will work closely with the City's legal team to address legal risks relating to property values. It is very difficult to quantify property value changes.

*14. This may seem like a strange question, but do we know how many gallons of water we are conserving annually because of our **water conservation program** and the actions residents are taking?*

Our city residents and water users have been very diligent with water conservation practices. Typical savings range between 2-4 million gallons per year. On average about 3 million gallons are conserved each year from the actions that residents are taking by participating in the water efficiency programs the City offers.

15. For the sections that are already piped, when was that piping done and what is the life expectancy of the pipe?

We don't have accurate construction records for the currently piped sections. Some are relatively newer and some are not. It's estimated that about 60% of the currently piped section have tar lined metal culverts and the rest are plastic pipe. The metal pipe is likely beyond its design life and it's known to corrode on the bottom and leak substantially. The plastic pipe appears to be in fair condition.

16. Will we be able to see the results of the questionnaire that was handed out to the participants at the meeting last week?

This information was provided to Council and is on the project webpage: Council Study Session Presentation. www.ashland.or.us/ashlandcanal

17. Can you tell me how many customers we currently serve with canal water, how much money that program brings in, and an estimate of how much water those current customers use?

This section of canal serves 99 properties and the backside of the Canal serves 86 properties. Total TID sales for FY 2018 were \$64,846.23. Based on estimates from other landscapes of similar sizes, we estimate that properties are using anywhere from 30,000 - 70,000 gallons over a six-month period. It depends on how many square feet of landscaping is being watered and whether they are watering lawn, shrubs, trees or a mixture of all. This range of water use assumes at least 2,500 square feet of shrub and tree landscaping going up to 5,000 square feet of landscaping that incorporates a mixture of lawn, shrubs and trees.

18. It would also be helpful to know how many of the affected property owners are receiving irrigation water from the canal and which ones have a public use easement in place already? (In addition to the maintenance easement)

There are 19 properties within the project area that have irrigation service from the Canal. The map of the trail easements is on the project website (www.ashland.or.us/ashlandcanal). There are approximately 30 properties representing 56% of the total canal length in the project section that have trail easements in place now.

19. My thinking is that the community would like to have an unimpeded **trail** along the canal whether it gets piped or lined and I'm wondering if there could be some packages created where we offer hook ups and/or some amount of irrigation water in exchange for public use easements in the areas where the City does not already have them. If we did that, people could decide to water some of the trees that are in danger of dying once the pipe is installed.

Interesting policy question for council, additional public trail easements need to be negotiated with property owners.

20. I'm also wondering if it would be possible to get Parks and Rec involved in funding the acquisition of the public use easements. If there is a way to avoid some of the tree death by spending a bit more money on different installation techniques, Parks and Rec might be able to help with that if the end result is a continuous "canal" trail.

Parks would love to have this and be involved, additional public trail easements must be negotiated with individual property owners.

21. Lastly, you have probably already thought about this, but would it be possible to lay the new pipe above the current canal rather than digging out all of the concrete? Any chance we could build it up and mound over it with soil rather than digging down? Seems that might avoid the tree root problem and provide easier access for future repairs.

This was addressed in the engineering reports available on the project website (www.ashland.or.us/ashlandcanal) and with question #9 in this document. The new pipe has fixed points at the beginning and end of the project and is generally flat in elevation. It's very important that we maintain the current flow line and hydraulic characteristics of the current canal, the whole system is gravity fed and is a driving factor for engineering/design.

22. I'm not clear on what the 62,000,000 gallons of lost water refers to. Is this from the 2 miles proposed to be piped or the part of the canal operated by the city, or the total 17 miles of the Ashland canal? Can you clarify what this statistic refers to?

That is the estimated amount of water lost through seepage and evaporation in a typical irrigation season from the 2 miles of canal in the project area.

23. What is the current amount spent annually on maintenance of the project section of the canal? How much is spent on whole section operated by the city?

The City spends approximately \$50,000 on annual maintenance for the whole canal. The City maintains this 2-mile section and the "back" side which is another 2 miles in length. These costs are for the whole Canal;

24. How many current customers receive irrigation water from the city section and how much does the city currently receive in payments from those who get irrigation water from the city? How many requests has the city received asking to start get irrigation water from the city?

This section of canal serves 99 properties and the backside of the Canal serves 86 properties. Total TID sales for FY 2018 were \$64,846.23. On average we get about 5 requests a year for new TID service. The last time we installed a new connection was 2016, most of the time people are asking for it where it's not available or there isn't enough capacity or they determine the costs for installation are too high.

25. Has this section of the Ashland canal been maintained to the same level as the other approximately 130 miles of TID canal?

We don't have specifics on what the TID does regarding canal maintenance. However, our Water Distribution Staff have many responsibilities, the canal is a small portion of their responsibilities.

26. Why do the 27% of the project area canal in good condition need to be piped or redone?

Much of the current canal is showing signs of failure of some type and the liner is beyond its design life of 60 years. The areas considered "good" now are likely to degrade significantly in the near term. Also, leaving some sections open will allow for contaminants to enter the canal. It's important in design that we minimize the amount of piped connections, this also reduces construction costs. Excessive pipe connections of new to old sections brings up concerns of leaks and potential failure. The most robust solution with the lowest life cycle cost is replace all sections with new pipe.

27. Do you think the 20% factor is enough of a margin for the ditch project? The 24" diameter pipe has a cross sectional area which doesn't seem like a lot for high water events. The report addresses the area of the project but much happens at the southern, open stretches of the ditch that might not be addressed and may impact the area at the transition to the piping.

Yes. Water delivery from TID is limited by their canal and hydrology. Our design includes an overflow system at the beginning and mid-point of the piped section to mitigate potential storm surges.

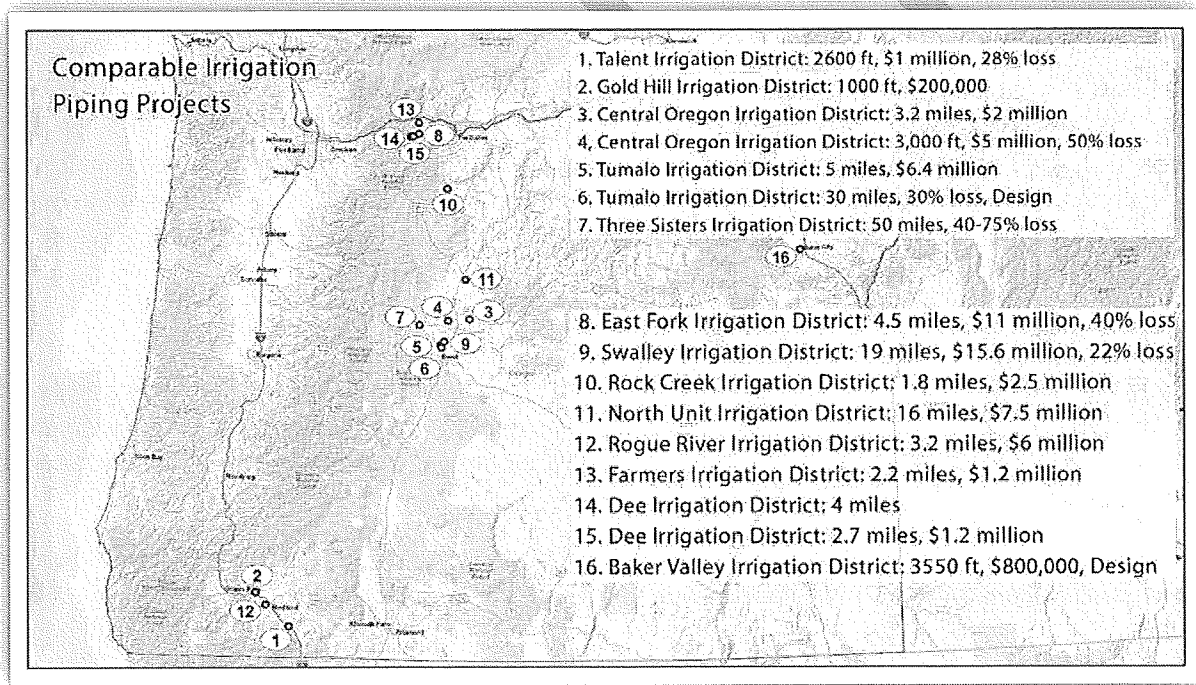
28. Over time, the ditch has come to serve storm run-off functions that may not be addressed by redirecting to the storm water collection system. I am curious if drainages like the Roca Canyon system can deal with the additional runoff.

These issues will be addressed during final design. The total storm flows are less than we realized, partly because much of the canal has a road network uphill that directs storm flows into our storm system already.

29. They are wondering whether the water rights adjudication process going on in the Klamath has any potential to affect our receipt of water in the future, particularly as it relates to native tribes in the region and their claims to water rights. Essentially, the question is should we invest significant amounts of money now when the adjudication process could eliminate the source of the water we would be transporting?

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 Division (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.

30. They want to know if there are examples of other places where irrigation ditches have been piped. Given that TID hasn't piped their ditches yet, there seems to be some mistrust around the idea that other areas are moving toward piping rather than open topped canals.



31. There are people questioning whether the WISE project is still moving forward and whether piping is still what is wanted in the rest of the canal. From what I have heard, it still is the goal, but money is the issue. Is that correct and is there any way for the public to hear that message directly from the WISE program or TID - perhaps at the upcoming study session?

Yes, as far as we know, the WISE project it is still a goal however, securing funding for such a large project has been difficult. We have invited a WISE representative to the April 1st Study Session.